

Make **KDE 2.2.1** for Linux work for you

Subscriber Copy NOT FOR SALE

Rs 100

www.thinkdigit.com

digit

December 2001

>> Your Technology Navigator

zero1 AWARDS 2001

OUR TEST CENTRE
REWARDS OUTSTANDING
TECHNOLOGY PRODUCTS



Master your Mailbox
in **10 easy steps**



Always Cheated?
Make sense of your
Product Warranty

Battery Free?
Alternative Power
for Mobile Devices



How does **DDR SDRAM** work?



WINNING STRATEGIES
12 MAJOR GAMES

Jasubhai
DIGITAL MEDIA

International price: United States \$5



123 78 025 223 6



What about the Training Institutes?



“Die-hard computing enthusiasts will tell you that they learnt much more by themselves while fiddling with a PC”

There was a time when every college kid worth his salt was clamouring to sign up for ‘a three year degree in computer science’ which promised to set you up for the rest of your life with a career you could only dream of. You just had to look up on almost any street to find a huge hoarding that advertised the latest course from a private computer institute that guaranteed to transform your life.

Just collect the keys to that BMW on your way out, was the underlying message.

As a result of fewer opportunities in the IT industry and considerable insecurity created by the shutting down of several fly-by-night computer institutes, most people are a lot more wary of empty promises.

It is pretty obvious that every one of these computer institutes delivered much less than they promised, despite their much touted training methodologies and supposedly world-class facilities. So many of us spent the best part of three years sitting in classes being taught Visual Basic by someone who had no more real world experience in programming than us. Or being taught how to become designers by someone who just barely understood the R, G and B of colour. Instead of giving us the valuable education that we expected after spending tens of thousands of rupees, these institutes provided little more than some course material and a certificate of debatable value and recognition.

But where does the major share of the blame lie? With those who made every thing sound so simple or with those of us who chose to believe that life could be so easy?

Most successful IT professionals will assure you that they learnt almost everything useful that they know at their workplace. Die-hard computing enthusiasts will tell you that they learnt much more by themselves at home while fiddling with a PC than they did at any computer class.

Which should be reason enough to avoid blindly entrusting someone else with your future. Instead, strive yourself to ensure that you get a real education that is based upon practical experiences.

Unless computer institutes can find a way to provide students with a considerably more stimulating environment than they currently do, it is unlikely that they will be able to regain the popularity they enjoyed.

They need to move beyond handing out empty certifications and towards delivering a wholesome education.

Karan Manral

Karan Manral
Assistant Editor
karan_manral@jasubhai.com

CgNTENTS

D E C E M B E R 2 0 0 1

EDITORIAL CONTENTS COLOPHON PULSE

VSNL to lift ban on VoIP
3D games come to PDAs
Microsoft to head bug disclosure group
Intel's out, Apple's at the plate
Hypethesis: corDECT
Quicktake: S. Angaiah of Adobe Systems India
Whois?: Douglas E. Van Houweling
Tomorrow's Technology: One-molecule thick transistor

DIALOG

CONNECT SPOTLIGHT
Ashok Jhunjunwala shows you how technology can come cheap

FACE-OFF
Should instant messengers sign out at workplaces?

TECHNOLOGY NEXT
Just a little more with alternate sources of power

DROOLMAAL
Get out the popcorn, the show's about to start!

WIDEANGLE
How technology gives the disabled a helping hand

PASSPORT
Get your career going with software development for mobile platforms

FIRSTHAND
Warranties: the do's and don'ts

NETRETURN
Give your home a new look—online!

RESOLVE WIRED
Having fun with Linux—KDE style

Make Outlook Express 6 dance to your tune

UNWIRED
Editing documents on the handheld

S.O.S.
Put an end to your PC woes

TIPS & TRICKS
Get the one-up with these gaming tips

SELECT ZERO1 AWARDS
The worthy winners

INSIGHT
The clear picture on TFT136

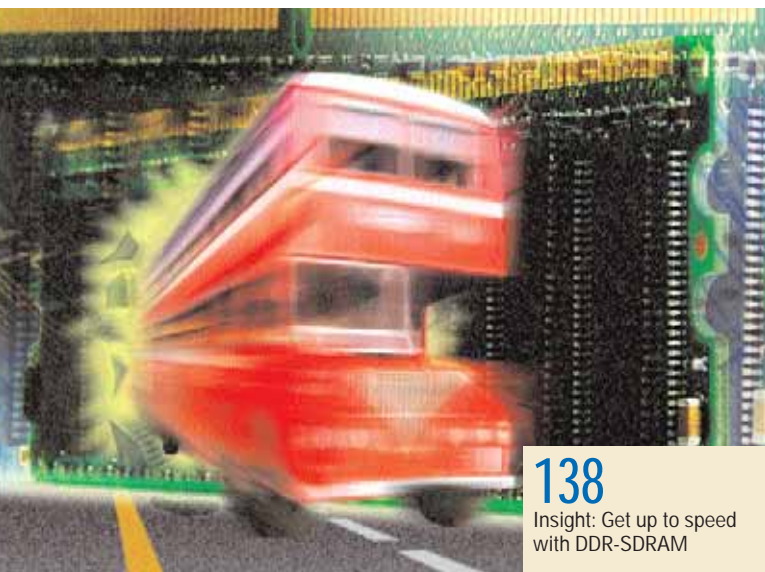
What's hot about DDR-SDRAM?



42
Warranties warrant attention

REPORT CARD
Radar: Tested products 144
Reviews: Books you should read 150
Undercover: Agent 001 has his eyes wide open for the best monitor 151

DIGIT DIARY BACKBYTE 152 154



138
Insight: Get up to speed with DDR-SDRAM



60
Editing text on the Palm

Mindmatters

Enjoy eBooks and whitepapers

Arena

The gaming zone

138

A sharper memory with DDR-SDRAM

92

Winners of the Digit 01 Awards

56

Gaining mastery over Outlook Express

26

Get that extra boost with alternate sources of power



ON THE CD

Mindware

RESOLVE
TROUBLESHOOTING
FAQs on CD-RW

WORKSHOP

Hands-on: '5 ways you might be damaging your PC' in this video workshop

E-PAPERS

Working with PDFs and eBooks

SOFTWARE DEVELOPERS

CODE METRIC V1.02

This program provides line and comment counting and automatic code formatting

CODE DEPOT V2.3

This source code snippets



manager gives you full control over the source code

GRAPHICS

MICROANGELO V5.5

This software supports creation, installation and animation of icons for Windows



desktops

3D CANVAS V4.23

Create your own 3D world with this real time tool, which uses a drag-and-drop approach

AVIEDIT V3.1

Enhance your videos using more than 30 built-in effects and capture single frames or entire movies

HOME

ADVANCED WMA WORKSHOP V1.5

This encoder/decoder can convert WAV, MP3 and OGG files to WMA 8 or convert WMA files to MP3 format and more

BABYLON-PRO V3.2.30

This powerful dictionary tool

Software on CD

Mindware

DEVELOPER TOOLS

Delphi Tips N Tricks (Freeware), DzSoft Perl Editor (Shareware), RealJ (Freeware), Hackman (Freeware), HotDog Professional (30 day trial), Mozilla (32-bit) (Freeware), VB Lister (Shareware), Winamp 3 beta (Freeware), WinSQL (Freeware)

GRAPHICS

Acloon VideoViewer (Shareware), CadStd Lite (Freeware), Color Pilot (Shareware), Jasc Animation Shop (Demo), Moho (Demo), RadLight (Freeware)

HOME

Blinking Ball (Freeware), Crorepatibaniya QUIZ (Demo), DenebaShare (Demo), DoubleClick PRO (Shareware), Image Carousel (Shareware), Movie Enigma

Contd on page 8...

...Contd from page 7

(Freeware), NumerologyWiz (Freeware), Read Plus (Freeware)

INTERNET

AI RoboForm (Freeware), HTTrack (Freeware), ICQ 2001b (Freeware), Yahoo Messenger (Freeware)

OFFICE

Daystar Address Book (Freeware), eXY (Shareware), Integra Office (Shareware), Professional Quest PE (Shareware), ScheduleMaster (Trial)

RESOURCES

Acrobat Reader 5.0 (Freeware), Shockwave Player (Freeware), Stuffit (Shareware), Winzip (Evaluation), DirectX 8.1 (Freeware)

UPDATES

AVG Updates (Freeware), nVidia Drivers (Freeware), MSN Explorer (Freeware), MSN Messenger (Freeware), UltraEdit (Trial)

UTILITIES

AFM2000 (Freeware), DU Meter (Shareware), Encrypt Decrypt (Freeware), KeyBoard Enhancer (Shareware), NoteTab Pro (Trial), SPLiT (Freeware), WinClaws (Freeware), WinSettings (Trial), WinTweak 2001 Gold (Freeware)

Playware

ARENA

AOE: Rise of Rome (Strategy), Tribes 2 (Action), Rally Trophy (Racing), Primal Prey (Action), Zoo Tycoon (Management), Steel Beasts (Simulation), Monkey Brains (Puzzle), Rubik's Cube (Puzzle)

GALLERY

Wallpapers, screensavers, skins and themes

provides translations, conversions and information about any word or value you click on

INTERNET

CUSTOMMAILER V3.0

This powerful and easy-to-use tool lets you send customised e-mail

FAST BROWSER PRO V4.03

This tool embeds more than 500 search engines with 100



search categories including features such as translation, voice feature and more

IN MAGAZINE

KDE 2.2.1

A powerful open source graphical desktop environment for Unix workstations

OFFICE

ADDRESS ORGANIZER DELUXE V1.8

Organise and manage all your contacts and addresses



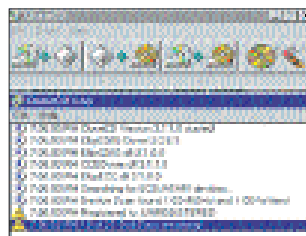
EDWIN'S POWER TOOLS V3.5

An add-in for Excel with a range of features including 3D formatting tools, filters, selection tools and more

UPDATES

CLONECD V3.1.1.0

This CD copying program can produce real one-to-one copies of CDs in RAW mode, even if they are copy protected



UTILITIES

POWERSTRIP V3.02

This tool provides configuration and fast access to display settings, enlargement and reduction of desktop size and more

IN PRINT

PRICEWATCH

Check out the latest PC component prices

BUILDING BLOCKS OF E-COMMERCE

Tutorial for end-users
Complete, free course from



MINDMATTERS

EBOOKS

Dead man's dollar, Unleashing the idea virus and more e-books

WHITEPAPERS

Whitepapers on hard disk technologies

TIPS & TRICKS

Tips and Tricks database



Playware

GALLERY

The usual lineup of wallpapers and themes for you to give



your PC a festive look! And get your Winamp grooving with these cool skins

SURGE

Trailers of *Serendipity*, *The Others* and some cool MP3s to go with them

ARENA

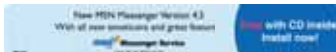
GAMES

FIFA 2002

Experience the joy and heart-break as you travel the road to the Fifa World Cup 2002



CONNECT



SITEMAP

Get the job that's just right for you at monsterindia.com

INDIA SITES

Some new Indian sites and ISP news

BOOKMARKS

Play for the big winnings with online contest sites

NEWSLETTERS

Newsletters on online music sites

DROOLMAAL

Feast your eyes on the beautiful and downright gorgeous!



VOLUME 1, ISSUE 8

Chairman and Publisher Jasu Shah
Associate Publisher and Editor Maulik Jasubhai
Assistant Editor Karan Manral

Editorial

Writers Anil Patrick R., Vidyaramanan S.,
 Sriram Sharma, Avina Lobo, Prashant
 Masrani

Features Editor Sveta Basraon
Copy Editors Anshul Chauhan,
 Julian Vongeyer, Roopa Sukumaran

Design

Consultant G.V. Sreekumar
Art Director Marshall Mascarenhas
Manager - Design Swaroop Biswas
Senior Designer Shivasankaran C. Pillai,
Visualiser Shyam Shirsekar
Graphics Solomon Lewis, Jaya Shetty
Digital Imaging Artist Neeta Wadiker
Photographers Rahul Sharma,
 Mexi Xavier
Illustrator Mahesh Benkar, Ram
Contributing Illustrator Farzana
 Cooper

Test Centre

Head Marco D'Souza
Deputy Head Hatim Kantawalla
Reviewers Dipayan Choudhury, Aliasgar
 Pardawala, Yatish Suvarna, Mitul Mehta
Co-ordinator Veda Kurani

Multimedia

Co-ordinator V. Ravi Shankar
Designer Kabir Malkani, Jo-Ann
 Rodricks, Priyamvada K.K.
Programmers Liu Ai Chin
Content Vaibhav Kapoor

Media Studio

Co-ordinator Bimal Unnikrishnan
Producer Priya Ramanathan
Editor Afzal Mazgaonkar
Production Manager Prasanth Uyyul

Production

General Manager Shivshankar Hiremath
Managers Harish Suvarna, Shiv
 Hiremath, Shailesh Iyer (Operations)
Sr Executive Amit Navrange
Executives Mangesh Salvi, Sriram Iyer
Prepress Prashant Nair, Shailesh Salvi,
 Ravindra Dighe

Circulation and Logistics

Head-Circulation & Logistics
 Akhilesh Singh

Distribution & Logistics

Nicholas Kiro, Arup Ghosh, Sandeep Rane

Marketing

Brand Manager Louis D'Mello
Marketing Manager Anurag Gour
Asst Manager - Consumer Mktg
 Nabjeet Ganguli
Marketing Communication Mithun Roy

Audience Development

Head Sarang Dash
Assistant Manager Abhyuday
 Mukhopadhyay
Customer Service Namita Shetty,
 Reema Sadarangani, Roshan Jeypaul,
 Ronny Joseph

Cover Photograph: Colston Julian,
 assisted by Bajirao Pawar

Make up: Kumar **Stylist:** Chola

Model: Peeya

◆ How to contact us

EDITORIAL

Products for Test/Review

Send a complete working copy of the product (not a 'trial' or 'demo' version) to the Digit Test Centre. Only products that are currently available in the Indian market will be considered. The products must have the complete name of the manufacturer or developer, details regarding the name of the model and its type and the end-user price. Product brochure and a complete specification sheet must be included, along with the name of a person to be contacted for information.

DIGIT INTERACTIVE

Contact Vaibhav Kapoor, Content Co-ordinator, Multimedia (cdcontent@jasubhai.com) for inclusion of software on Digit Interactive. A write-up detailing the features of the software, complete loading instructions and a letter certifying that the



product is original must accompany the software. The software must also have the complete address, telephone number

and e-mail of the developer.

CUSTOMER/ SUBSCRIPTION SERVICES

E-mail: Any queries or problems regarding Digit Interactive, subscriptions or other problems can be mailed to

help@jasubhai.com

Post: If sent by post, please

Pager: 9623-987273 at Mumbai

Pager: 9624-329229 at
 Pune, Hyderabad and Bangalore

mark 'Customer Service'. In case of subscription problems, please mention the subscription particulars.

MARKETING SERVICES

IT companies whose products have been declared winners in a



Digit Test can use the Digit Test Centre logo. They must address their

requests for licences, reprints and bulk orders of Digit to Navin Sahni (navin_sahni@jasubhai.com), at our Nerul office in Navi Mumbai.

◆ Sales & Marketing Offices

HEAD OFFICE

Navi Mumbai
Sandip Maiti
 Vice President
 Sales & Client Marketing
Parag Prabhu
 Client Marketing Executive
Rakesh Rana
 Ad Sales Support

NEW DELHI

Vijay Adhikari
 Regional Manager
Rajesh Arora
 Ad Sales Manager
Arvind Prabhakar
 Phone: +91 11 6445320-25
 Fax: +91 11 6445321

BANGALORE

S. Saikumar
 Regional Manager
Raghu Pillai
 Ad Sales Manager
 Phone: +91 80 5325670/88, 2899287
 Tele-Fax: +91 80 5098717

MUMBAI

Rupesh Sreedharan
 Regional Manager
Bhavesh Thakore
 Ad Sales Manager
 Phone: +91 22 6591849-50, 6591651
 Fax: +91 22 6591592

SECUNDERABAD

S. Venu
 Phone: + 91 40 6329190/6329181

CHENNAI

Sahayaraj Prabhu
 Phone: +91 44 8235186-89
 Fax: +91 44 8230731

PUNE

Vinayak Inamdar
 Phone: +91 20 4482059, 4494572
 Tele-Fax: +91 20 4482059

CALCUTTA

Jayanta Bhattacharya
 Phone: +91 33 2822183, 2827842, 2828016
 Fax: +91 33 2827673

◆ Advertisers index

CLIENT	PAGE
ACI	11
Base Corporation	100, 101
Cdac	127
Elnova	66
Emerson Network	
Power (India) Ltd.	103
Gigabyte	17
HP	97, 113
ICFAI	51
ICICI Direct.com	37
Kobian	111
KSDL	25
Microstar	99
Monarch Video Vision	125
Neoteric	115
NetVarsity.com	129
Powerware International	
Pvt Ltd	Back Cover
Ramadevi Software	
Pvt.Ltd	41
Rank Data	117
Rashi	9, 19
Sap Labs	47, 49
Seagate	12, 13
Sony India	4, 5
Symantec	95
Unistal System Pvt Ltd	59
Vision Multimedia	45
Wipro Infotech	23

HEAD OFFICE:

EDITORIAL, MARKETING AND CUSTOMER SERVICE

Plot No D-222/2,
 TTC Industrial Area, MIDC, Shirvane,
 Nerul, Navi Mumbai 400 706
 Phone: 022-7629191/9200
 Fax: 022-7615225, 7629223/24
 Printed and published by Jasu R. Shah on
 behalf of Jasubhai Digital Media Pvt Ltd, 26
 Maker Chambers VI, 2nd Floor, Nariman
 Point, Mumbai 400 021, India.
 Editor: Maulik Jasubhai
 Printed at Tata Infomedia Limited,
 Prabhadevi, Mumbai 400 025

hypethesis

corDECT

▲ What is it?

Wireless Local Loop (WLL) technology developed by IIT, Madras and Midas Communication Technologies, Chennai that promises to bring very affordable telephone and Internet access. The small size of a corDECT box makes it easy to install in homes and contains ports for a telephone and PC.

▲ What's so special?

corDECT does not require standard cabling as used in conventional telephone systems. Instead, it uses wireless technologies which saves substantial costs in cabling and installation. A single corDECT system can provide a maximum bandwidth of 70 kbps per household which is shared between voice and data.

▲ Where can it be useful?

With the corDECT technology, the cost of bringing telephone access to villages is significantly less. Together with access to telephones, this system also allows villagers access to the Internet with similar ease and low cost.

SNAPSHOT 76 per cent

is the viewership for television

while the Internet, despite being a gargantuan source of information, enjoys a viewership of just 8 per cent

Source: www.nielsen-netratings.com

3D games: now for PDAs

Gaming addicts will no longer feel the fright of withdrawal symptoms in leaving their PCs and consoles at home. Now they can take their fix with them. Finnish gaming company Fathammer has developed a 3D gaming engine called X-Forge, for Pocket PC based handhelds. Obviously, the first question that comes to mind is how 3D graphics can be achieved in



the first place with the limited resources in a handheld? Without a doubt, the tech demos have been very impressive so far with catchy music and vivid 3D imagery. But what's more important is that X-Forge also works with Linux and Symbian OS, giving game makers a lot of flexibility in making use of this graphical breakthrough in handheld computers.

April fools with VoIP

It's time to rejoice for fans of VoIP. The current block on long distance calls over the Net is finally nearing its end. Come April 1, 2002, VSNL will finally lift the ban on VoIP. This is the announcement made by India's IT minister, Pramod Mahajan.

Once it arrives, however, and knowing the government's wonderful sense of sniffing out an opportunity, don't be surprised if VoIP comes at a price. Nonetheless, it should be much cheaper than making an ISD call to the US.

Hotmail to trim excess flab

With many e-mail services moving towards a subscription, it is nice to know Hotmail is still free. But attention Hotmail users! Check your Hotmail e-mail at least once every 30 days or you're going to lose it! Microsoft threw up this announcement to users of



Hotmail's free e-mail service in a move to hopefully convince its users to shift over to their pay-for-premium service. Though the pay service will not expire after a period of inactivity, attracting long-time users of free e-mail will be a very difficult task.

Benchmarking the benchmark

A huge controversy has been raging over the new drivers that ATi released recently. We all have heard about performance boosts from the new detonator XP but this one comes from ATi. It seems like these have been specifically written with *Quake III: Arena* in mind and there are *Quake III* specific instructions in the Windows 2000 Radeon 8500 drivers version 5.13.01.3276. With this new driver set people have reported to have found up to 20 per cent increase in frame rate in *Quake III*. Effectively, with this driver you can safely say that the Radeon 8500 will beat the nVidia Geforce 3 Ti500 hands down.

Now whether or not this driver set is cheating the 'benchmark' is yet to be seen and understood. Nevertheless, it is effectively a massive increase and can only be achieved by some major tweaking. Now to be very frank, the ATi team is not known to churn out some amazing drivers and are at most times blamed for botched up driver releases.

Also, you really can't judge quality in a fast moving demo and only after a close scrutiny of image quality in actual gameplay can one come to a conclusion. So whether or not the ATi driver is compromising on quality (which is holy to *Quake III* fanatics) is yet to be seen. Also consider the fact that *Quake III* is without doubt the most widely used gaming benchmark. It's almost the 'holy benchmark'; if you win here, you win everywhere!

quicktake

Illustrating the point: S. Angaiah, business development manager, Adobe Systems India, talks about Illustrator 10.0

▲ What are the advantages of Illustrator 10.0 over version 9?

Whether your graphics are printed or available in other media formats, the new tools in Illustrator 10 enable you to produce your designs with freedom, flexibility, and finesse.

Web designers will appreciate the control of object-based slicing and the efficiency of symbols. Web



S. Angaiah
Business development manager, Adobe Systems India

developers will appreciate the programmatic accessibility of Illustrator 10. With integrated support for AppleScript, Visual Basic script and JavaScript, developers in publishing environments can streamline their workflows by reducing the amount of time spent on simple data replacements.

▲ How do Illustrator 10 and InDesign 2.0 tie in with Adobe's vision of a paperless office?

Designers can create visually

rich templates that are easy to edit, and quickly attach variables to their artwork. Once the template is linked to a data source, it's easy to generate any number of artwork variations for a single device, or for multiple destinations, including personalised Web pages, eBooks, PDAs, and wireless devices.

InDesign 2.0 lays the foundation for network publishing with its ability to build XML-based structure into new and legacy documents.

In the future, we'll be focusing on Network publishing, ePaper strategy and anti piracy.

With Intel away, it's Apple at play

The time is perhaps right for Apple to dive into consumer electronics; Intel has announced its departure from the scene.

Apple's newest iPod is a sleek MP3 player with 5GB of storage space. A lithium polymer battery accompanies the



iPod giving it 10 hours of life at a stretch. A fine piece of technology no doubt, but maybe Apple has jumped the gun a bit too quickly. Despite the fact that only a fraction of computers out there

are Macs, the iPod is only compatible with Apple computers. Specifically, only their premium end machine with FireWire support. Unless Apple gets in gear and develops a Windows compatible gadget, the advantage of Intel's absence could be for nothing.

The iPod looks amazing, Apple. But let us not trip on our own shoelaces, hmm?

From RIAA to TV networks

First, RIAA wanted to prevent MP3 players from making an appearance. Now, TV networks want to successfully pull off a similar feat with a suit against SONICblue over the latter's ReplayTV 4000. The ReplayTV is a device that captures television programs over the Internet and shares it with

other users of ReplayTV. This Internet-ready digital video recorder is yet another target for major networks in an attempt to control the distribution of copyrighted music. In light of the massive music piracy through file-sharing networks such as Audiogalaxy and Gnutella, networks do

have a genuine concern about rampant piracy of TV programs. Whether or not they are victorious in their lawsuit against SONICblue remains to be seen. However, judging by the ruling of the RIAA-Diamond Multimedia case, the ReplyTV 4000 should manage to pass through.

Redalert

Office XP + IE 5 = Privacy bug

If you are using Office XP in conjunction with Internet Explorer 5, you could be in for an unpleasant eXPerience. A recently discovered flaw describes a scenario whereby the security of personal user information may be breached in the event of a program crash. A feature that sends back reports of errors and crash information also sends along other information in memory at the time of the crash, including personal info. But before the information is actually sent, users are presented with a dialog box requesting their permission to send back data to Microsoft. If you refuse, you don't have a thing to worry about.

W32.Klez.D@mm

A variant of the W32.Klez.A@mm worm, it comes within an e-mail attachment of 64 Kb and takes advantage of security holes in MS Outlook and Outlook Express to execute itself when the message is read. The worm can trigger itself just by previewing an infected e-mail. It also spreads across a network which hosts an infected computer. The worm even passes the Windows Address Book (WAB) and sends an infected e-mail to everyone in the address book. The worm detonates its payload on the 13th of an un-even month (January, March, May, etc) to cause all local and mapped drives to be filled with a random arrangement of 0's and 1's. Patches for this virus are available, check the site of your AV software maker for a download.

realitybites

"Next year I hope a lot of people in the audience will be taking their notes on a Tablet PC"



Microsoft chairman Bill Gates speaking at Comdex 2001 on his vision of the pen-driven Tablet PC which will have its own version of Windows XP

With the kind of brute force the software giant has, the next thing you know your toaster oven will support XP too!

"While we know the experience won't be as good (with a PC), we will probably look at that down the road"

Apple chief Steve Jobs on the future of the iPod which is supported only on the Mac

After all, how far can sales go when you target only 20 per cent of computer users in the world?

"After careful deliberation... and consideration of developments since the announcement of the merger, I have decided to vote against the transaction."



Walter Hewitt, descendent of HP co-founder William Hewitt after he originally voted in favour of the HP-Compaq merger.

Dilute share prices with the merger or suffer a \$675 million break-up fee. You're swimming upstream either way.

Ring tone legal issue

One can easily understand the concerns of the record industry over the MP3 phenomenon. Since the courts have rested in favour of the music biz, you'd think they might rest easy for a while, right? Wrong! Record labels now have their



sights set on the booming ring tone industry. With over \$300 million worth of ring tones sold in Japan alone, it's no doubt that this is a surprisingly booming business. The majority of ring tone material sources from copyrighted music, but don't expect anything even close to music from a 'bleep-bloop' cell phone.

"Set your phasers for stun.."

It's not *Star Trek* but it might just be as effective. The Air Force Research Laboratory (AFRL) in New Mexico, USA, has devised a new non-lethal weapon designed to heat the skin of its target. Using focused microwaves, Active Denial Technology (ADT) uses a 2-metre dish to shoot out these waves, which AFRL claims only penetrate 0.3 mm into the skin's surface and heats it to around 45°C. But there is suspicion that even brief exposure to the weapon's beams can be harmful.

thermometer

Hot Gaming consoles

With the release of X-Box and Gamecube, revenues are expected to skyrocket between now and 2005

Windows XP

It's the fastest selling version of Windows ever

Cold Broadband

Despite its obvious advantages, subscriber growth in India is very low

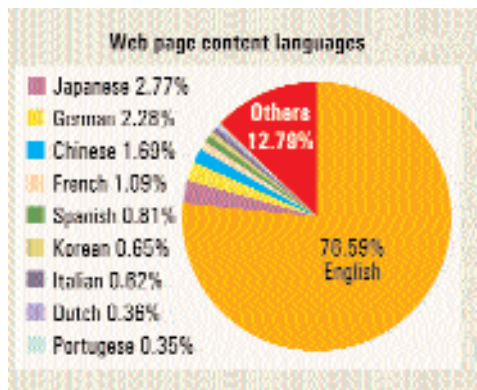
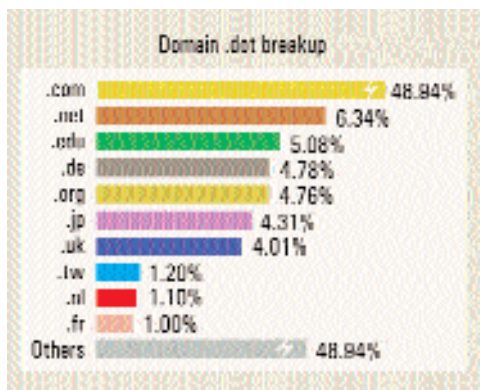
Excite.com

After paying \$7.8 billion for it, Excite@Home sold the loss making porting for a scanty \$10 million.

thumbnail

The Web Wide World

The popular suffixes for domain names and the language the Web speaks



Source: www.netstatistica.com

◆ Java-based phones making presence felt in Asia ◆ Bleem shuts down ◆ Sun pushes UltraSparcIII to over 1GHz

metrics

► **459 million**

The approximate number of people worldwide with Internet access

Indian households with multiple PCs

► **5 per cent**

Source: www.nasscom.org

Surfs up, dude! WAAAY up!

If you surf, you know what it's like to find that oh- so-perfect wave. What if you were told

talking about surfing on the World Wide Web. It's more real-world than that.



After closely studying different waves across the world, scientists have been able to create artificial reefs that control waves and adjust them to a particular preference.

Using large sandbags (about 20 metres long and weighing 300 tons) and placing them with the help of a satellite-based global positioning system (GPS), these reefs can be custom designed to change the speed and size of the wave.

that it's now possible to use technology to make the one you want?

No, for a change we are not

tomorrowstechnology

Scientists make transistor one-molecule thick

Scientists have developed a transistor which contains only one active molecule. This is something that will one day turn current technology on its head.

The goal for miniaturisation has taken a tremendous step forward and the possibilities for this technology are

utterly limitless.

As we shrink the size of technology and its applications, we are able to achieve feats previously unheard of. Aside from the advantages of portable technology, for areas like medicinal research, this form of nanotechnology is the Holy Grail of progress.

Bugged DVDs

So you think the Internet and pirated software are the only ways to catch a virus on your PC? Even those who purchase software might be at risk—if you're a fan of the Powderpuff Girls, that is. Warner Brothers confirmed that the DVD titled *Meet the Als* packs an added 'bonus' called the FunLove virus.

Though rare, such incidences catch users who trust purchased software off-guard and thus makes them prone to virus attacks.

Think about Microsoft's dilemma when users of their on-line tech support got infected.

Who is?

Douglas E. Van Houweling

▲ *Who is he?*

He is president and CEO of the University Corporation of Advanced Internet Development (UCAID), which is spearheading the Internet2 project.

▲ *Why Internet2?*

Douglas and the cause of Internet2 believe in designing a network from the ground up which will move data faster than today's Internet. The applications to consume a new pool of bandwidth would predominantly be audio and video, the two aspects of data that are hungry for bandwidth. So far, HDTV programs have successfully been transferred over Internet2.

▲ *Increased Security?*

Developing an infrastructure from the ground up allows developers to correct any and all flaws. The UCAID is analysing current security flaws of the Internet and developing a better infrastructure to make Internet2 more secure.

A degree in computer fashion

Does a degree in Wearable Computing sound like something straight out of science fiction? It is more real that you think. The Graz University of Technology in Austria claims to offer the first series of programmes that offers degrees at the undergrad, graduate and post-graduate levels. If it sounds like a total pushover, it



isn't. Students also run through typical subjects such as computation, physics, electronics and math.

There is no doubt that wearable computing is the next big trend in technology and this course may give you the opportunity to be a guru by the time its expertise is needed.

◆ ATI A3 Athlon XP chipset revealed ◆ Windows XP causes Intel mobile chips to overheat ◆ Palm to replace buggy devices

The gaming wait

Dear Karan,
I have been reading Digit since 1998 and have enjoyed it immensely. However there is one thing that I have found missing lately. There's simply too little about gaming.

I know that you guys put in some games in the CD but few of them are what I would call the latest and greatest. Some games like *Max Payne* came into the CD much after they were released, and others like *Red Faction* I haven't even seen yet. Why make us wait for so long? Also I would like to see more information on upcoming games, like *Doom3*, that everybody is excited about.

In short, gimme more games!

ABHAY
Via e-mail

digit

Hello Abhay,
We hear you. Starting with the Tips and Tricks section of this issue (our guidelines for gaming supremacy) you can expect more stories and game reviews in Digit. As far as the latest game demos are concerned, you can rest assured that we will get you the freshest downloads as soon as we can get our hands on them. And from the completely redesigned January issue onwards, avid gamers like yourself can expect a regular section devoted exclusively to gaming.

Second time smart

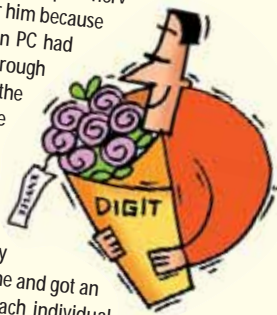
Hello,

I picked up the October 2001 'Smart Buyers' issue of Digit because I had to buy a computer for my cousin. I had been quite nervous about deciding what was right for him because my experiences while buying my own PC had not been very good. After reading through the magazine I realised that many of the problems that I faced with my PC were due to the wrong choice of motherboard and graphics card. My PC refused to run half the games that I wanted to play.

This time I did my homework by going through old issues of your magazine and got an idea of the essentials before I picked each individual component.

I would like to congratulate the entire DIGIT team for working hard to bring out this superb issue.

PRASHANT RANA
Via e-mail



digit

Hello Prashant,
We're glad to hear that our Smart Buyer's special issue achieved its objective of helping you make a more informed purchase. Just keep writing in to us about what you would want and like in Digit, and what you would not—this is your magazine! All the best in your adventures with computing and be assured that We'll be there when you need help along the way.
Ciao!

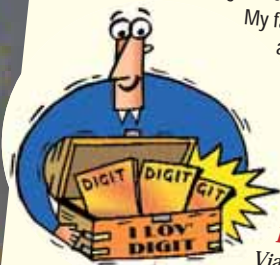
Ave, Agent 001!

To the Digit team,

I have been reading Digit since the first issue and have every copy stored carefully at home. My favourites are the comparison tests that you carry every month and the reports of Agent 001. Both these sections are really interesting.

I have seen other letters that ask for articles that teach you how to perform some basic tasks on your PC. I think that you should have more articles that explain how to do different things on the PC like designing a Web page or installing Windows.

PRASANNA
Via e-mail



digit

Hello Prasanna,
While we have already devoted a significant amount of our magazine and cover CD to providing solutions and workshops in its various sections, we are aware of your need for even more information on practical and solutions-oriented articles. This is going to be reflected from the forthcoming January issue of Digit where you will see a lot more content focussed on practical aspects of application software and computing in the form of workshops and do-it-yourself articles.

Happy reading!

Driver updates

Hi,

I would like to suggest that you provide the latest driver updates on the Digit CD to help us keep our PCs performing at their best.

SIBO THOMAS
Via e-mail

digit

Hello Sibo,
Thank you for the suggestion. We will be including drivers of commonly available hardware on our cover CDs. Look forward to it from the forthcoming issues.

Think Digit

Dear Digit,

You used to carry the PDF version of the magazine on CD. For some reason this seems to have been stopped. Is it possible to make these available for download on your Web site? Or even better, publish older workshops and articles on the Web site, where it will be easier for us to find them.

FEROZ
Via e-mail

digit

Hello Feroz,
Beginning with December, we will be adding considerably to the number of articles on our redesigned Web site. From now on you can look forward to finding some of our most popular articles and tutorials at www.thinkdigit.com

Download request

Dear Digit,
Why don't you start a 'requests' section which includes software and downloads that readers want to see on the CD? Considering the bandwidth that is available to most of us I think it would really be appreciated.

BRIJENDRA CHAUDHARY

Via e-mail

digit

Hello Brijendra,

Even today the software that we include in the CD is driven by e-mail requests that we receive from our readers. If there is a particular download that you would like to ask for, just write us at cdcontent@jasubhai.com

digit

Hello Vishal,

While the idea of using icons to represent the different licenses for the software has occurred to us in the past, quite often it doesn't turn out to be specific as required. For example, some software is free for personal use but not for commercial use. Similarly there are distinctions

in trial software too; some are time limited whereas others are feature limited.

As you can imagine, these subtle differences cannot be accurately demonstrated by the use of a simple graphical icon, which is why we continue to use simple text to spell it out for you.

Iconic CDs

Hi,

Please try and use some kind of symbols or icons to make it easier for us to differentiate between shareware and freeware on the Mindware CD.

VISHAL DOSHI

Via e-mail

Gypping guarantees

Hi Karan,

I am an established photographer and got hooked to digital imaging a little over two years ago. To meet the increased demand of storing scanned images I bought a 20 GB drive about six months ago. A month back, the vendor I bought my PC from commented that the drive was more noisy than normal and might crash shortly. The service technician that the drive vendor sent over insisted that there was nothing to worry about and that the drive was fine even though it was making some weird noises.

A couple of days later my PC flashed me a warning about impending failure of my drive. The technician took away the drive and claimed that the data would be

recovered and the drive returned in a couple of days. A week later I got to know that I lost about 8 MB of data which constituted over 40 hours of painstaking work. To add insult to injury, I had to pay Rs 1,750 as an 'upgrade price' for a 30 GB drive because I couldn't get a 20 GB replacement. All this is despite the fact that this was a product from a manufacturer that claims to be the world leader in hard disk drives and was purchased from an authorised distributor.

This has left me extremely annoyed as well as disappointed. Is this the best that can be expected from a warranty, even one coming from an international brand?

Sincerely

SWAPAN MUKHERJEE

Via e-mail

digit

Hello Swapan,

Your story and those of several others that wrote in to relate similar experiences prompted us to take an even closer look at how product warranties are honoured.

There are several things that you can do to protect yourself against such problems. First, you need to pay a lot more attention to this when you are actually making a purchase. Take the time to locate local service centre for the product and try sticking to the brands that have their own service setup in India (this is not true for all brands). Make sure that you get a proper warranty card and that you get a clear understanding of the dealers or service centres' interpretation of the terms of the warranty.

The only way you can avoid this particular situation in the future is by making it very clear to your vendor, at the outset, that you are not going to let him take you for a ride.

Goof Ups

■ Saikiran has rightly pointed out that we goofed up in the IDE hard disk drives test. The IBM DeskStar 60GXP (41 GB) drive has a sequential write speed of 39 MBps as stated in the write-up and not 11 MBps as mentioned in the bar graph.

■ Oops! In the e-books section of the Digit Mindware CD, the blurbs for Arthur Conan Doyle's *The Adventure of the Devil's Foot* and Edgar Rice Burroughs' *At the Earth's Core* are the same as that for Jane Austen's *Sense and Sensibility*. Thanks Satish Kumar, for pointing it out to us.

Notice any goof-ups? Write to goof@jasubhai.com

Short Bytes

Diverse drivers

Dear Karan,

In the article 'As Easy As Pie' (Digit, October 2001), you have mentioned something called 'thermal paste'. What exactly is this thermal paste and how does it work?

S. Balguru

Via e-mail.

Thermal paste is what helps the heatsink do its job of helping the processor keep its cool. It's a compound that allows you to fill all the gaps between the processor surface and the heatsink surface. It serves as a 'heatbond' that aids in transmitting heat from the processor to the heatsink.

A sticky situation

Hello Digit,

The adhesive that you use on the sticking tape that closes the CD packet is too strong and tears the packet every time I open them. Please consider an alternative sealing idea.

Via e-mail

If you have suggestions on how to make Digit better, come participate in the reader survey at <http://www.thinkdigit.com/survey/betterdigit>

Send your letters marked 'Readers Letters' to the Digit office:
D-222/2, MIDC, TTC Industrial Estate, Om Sagar Building, Nerul, Navi Mumbai 400 706, Phone: 022-7629191/9200; Fax: 022-7629224
E-mail: readersletters@jasubhai.com

The Connectivity Railroader

Technology is expensive stuff, therefore out of reach of the common man or villagers in rural areas. Not so! Ashok Jhunjunwala and his team prove that being digital doesn't have to come at a heavy price

AVINA LOBO

Does the idea of broadband over railway cables sound very far fetched to you? How about a wireless telephone system that promises to take cost-effective, high-quality voice and data connectivity to both urban and rural areas?

These technologies aren't just confined to the insides of a lab, they are seeing the light of day thanks to Ashok Jhunjunwala and his team of talented researchers at the Telecommunications and Computer Networks group (TeNeT) at IIT, Madras. TeNeT works in areas such as Networking, Digital Systems Architecture, Fibre Optics and communication software.

Jhunjunwala, Head, Department of Electrical Engineering, is the driving force behind the

around with technology and learning a lot."

Along with his former students, he floated several R&D companies like Midas Technologies, Banyan Networks and n-Logue that work in partnership with TeNeT to develop and commercially manufacture products like corDECT Wireless in Local Loop system, Railway Signalling Network, Fibre Access Network, Remote Access Switches, Ethernet Switches, IP Switches, etc.

In the news lately is the corDECT WILL technology, developed by TeNeT in collaboration with Midas Technologies that costs just a third of the CDMA WILL technology. This revolutionary new technology provides voice communication using 32 Kbps ADPCM, and Internet connectivity at 35/70 Kbps. (To read more about corDECT and other technologies developed by TeNeT, head over to www.tenet.res.in). corDECT is being commercially manufactured in India under license by companies like Crompton Greaves, HFCL, etc. corDECT has been installed in India and also countries like Iran, Argentina and Brazil.

Who would ever think that the railway cables which are used to power trains could be used to power the Net? Jhunjunwala and his team along with Banyan Networks did. They hit upon an idea to use the spare quad copper cables connecting railway stations to transfer voice and data connectivity using HDSL technology. A pilot project has been initiated covering 40 km of railway track linking Vijayawada and Guntur on the South-Central Railway. Cybercafe kiosks have been built along the stretch and corDECT base stations have been deployed at Guntur and at Mangalagiri providing Internet connectivity to subscribers in these areas.

Jhunjunwala's achievements have won him several awards including the prestigious Dr Vikram Sarabhai Research Award in 1997, and more recently the Millennium Medal at Indian Science Congress in 2000. In addition, he is a Fellow of the Indian National Academy of Engineering, Indian National Science Academy and National Academy of Science and a Governor of International Council for Computer Communications (ICCC).

His vision is to see all villages in India connected in three years. "We want to see India as a design house and want India to have 200 million telephone and Internet connections. If we are the best, we must deliver." ■



Ashok Jhunjunwala, Head, Department of Electrical Engineering at IIT, Madras, also the driving force behind the innovative use of railway cables to provide Internet connectivity

"We wanted to do something for the country... we see India as a design house"

innovations at TeNeT. The group is also guided by faculty from the departments of Electrical Engineering and Computer Science & Engineering and supported by several researchers, engineers and technical staff

After a B.Tech from IIT, Kanpur in 1975, Jhunjunwala went on to obtain a PhD from the University of Maine. He also served as Assistant Professor at Washington State University. But then India beckoned and since 1981, Jhunjunwala has been a professor at IIT, Madras.

Together with his colleagues, Bhaskar Ramamurti and Timothy Gonsalves, also ex-IIT-ians, he set up TeNeT at IIT, Madras more than 10 years back. Jhunjunwala reminisces, "My colleague Bhaskar was into wireless systems, I had some knowledge of telecom systems and Gonsalves was a software expert. We had an urge to do something for the country. So we started playing

tIMe for a chat

Are instant messengers productive or disruptive in the workplace? **Anil Patrick R.** chats with industry representatives to get their take on the issue

Instant Messengers can increase the productivity levels in the workplace tremendously. They provide fast and almost instantaneous two-way communication between people, unlike e-mail.

This advantage of Instant Messengers is a great boon, especially for organisations like

Darshan Patodi

Assistant Manager—Marketing,
Baazee.com

tages in my opinion is the conferencing facility, which allows any number of users to attend a specific online meeting.

Now take a moment to think of the traditional telephone board system used in most offices. At the most you can get two or three people at the same time in the conference facility provided by these. On the other hand, if an Instant Messenger is used, I can have a meeting with any number of

Instant Messengers (IMs) are a major cause of waste of time and resources as they tend to induce employees to waste time chatting, especially for personal purposes. In our call centre, employee productivity is very closely monitored and disciplined to ensure maximum productivity. For this to happen, we try to ensure that office productivity is not degraded due to people using the Internet for all kinds of

such cyber crimes, which can get the company into trouble. There have been several instances in the US where people have used the Internet access from their offices as a staging area to conduct all kinds of malicious attacks on Web sites or even individuals. Now that cyber laws have come

Kunal Bhatia

Senior Engineer (Networking),
Intellicom Contact Centers



"It's a great way to cut down costs and increase the speed of communication"

"A lot of features that are now available in IMs eat into precious WAN bandwidth"



What do you think? Come, speak your mind at www.yahoo.co.in

ours with offices spread all over India as well as abroad. In our case, we have over six offices at various parts of India. Most of the time we prefer Instant Messengers for interaction between these offices. It's a great way to cut down costs and increase the speed of communication. We already have 24-hour Internet connectivity at our offices. This makes it all the more sensible to use Instant Messengers for communication.

Compared to conventional methods of communication such as telephone lines, Instant Messengers have several advantages. One of the main advantages

colleagues from all over the world, at one time.

Apart from using Instant Messengers for intra office communication, we also use them to communicate with our alliance partners. We often have to do file transfers for various purposes. The file sharing mechanism in most of the Instant Messengers is very useful for this purpose.

All these advantages have made Instant Messengers an integral part of our work culture. They do help in improving productivity levels since communication is vital for the success of any organisation. ■

non-business uses.

A lot of features that are now available in IMs, such as voice and video chat, and file transfers, lead to misuse of available resources such as bandwidth. While the basic text chat feature of an IM does not hog significant bandwidth, the newer features now available can surely start eating into precious WAN bandwidth, which may be required for other mission-critical business applications.

Yet another danger of the use of IMs is the possibility of employees indulging in online harassment of people and other

into effect in India, it is up to companies to guard against misuse of online resources, lest they get caught up in legal issues.

IMs can allow a disgruntled employee to send confidential data over the Internet, causing loss of proprietary information. It's also well known that most commercially available messengers have security problems, which could allow crackers access to office networks. The best way to avoid such attacks on your network is to simply rule out such problematic and insecure software applications. ■

www.yahoo.co.in

Catch 'em live on Yahoo!

Darshan Patodi December 10 at 4 pm and Kunal Bhatia December 20 at 4 pm



Power dynamics

Adding complexity to portable electronic equipment usually means increased power consumption, but despair not. Here's more power for those hungry handhelds

SRIRAM SHARMA

One of the smaller revolutions within the digital age has been the proliferation of portable electronics that help people on the go stay in touch, keep themselves organised and get on with their work. However, the current life of batteries impedes the spread of promising new technologies and features. For instance, 3G (third generation wireless technology) allows for full motion video, audio downloading and high-speed data, but at the cost of ridiculously low battery life (less than an hour in trial conditions). Thus, mobile devices have to walk the tightrope between providing new whiz-bang features and economising on power at the same time. Internet, convergence, connectivity, higher processing power, and new wireless technologies may very well push current battery technology into obsolescence.

R&D teams at various corporations and alternative energy researchers are fiercely competing with each other to capture the \$6 billion battery market. Researchers are discovering new ways to maximise battery life, to make devices more independent, perhaps self-sustaining. Battery technologies are entering new frontiers with exotic cocktails based on modern polymers,

metals and carbides. Researchers are also thinking out of the box, tapping into solar and kinetic energy. It might not be long before you are wearing polymer boots and solar vests that recharge your MP3 player, your cell phone and your notebook.

Lithe Lithium

Most laptops and mobile phones today work on Lithium-ion batteries. They are lightweight and rechargeable, albeit expensive and toxic. But as of now, Lithium-ion batteries have reached their physical limit in terms of storage power. Of course, new developments currently taking place could improve performance drastically. Matsushita Industrial, better known as Panasonic, has developed a coin-type lithium-ion battery capable of 10 times as much current as existing cells. The new battery has a capacity of 140 milli-Ampere hours (mAh) and can be recharged up to 500 times. The extra voltage could power next generation portable devices such as GPS devices and terminals. Scientists at Brookhaven National Laboratory are trying out a cheaper and less toxic Boron-based additive. This development opens up new possibilities for electrolytes that can be developed for the Lithium-ion batteries. If the development cycle works out as planned, the new batteries may be on the market in two to three years.

Imaging: Neeta Wadiker

Standard lithium batteries contain a metal oxide and a graphite electrode, with a shapeless polymer acting as the electrolyte. But a new solid-state polymer by St Andrews University, Scotland, promises greater densities and improved battery designs. The solid-state polymer serves as both the electrodes and the electrolyte, leading to greater densities and thinner battery designs. Under test conditions, solid-state polymers have shown to offer greater conductivity than amorphous polymers.

Scientists at the US Department of Energy have developed a new metal alloy that will enhance the life span of batteries. The alloy, made of nickel, tin and lanthanum, contains no toxins or the expensive cobalt and it will be cheaper and environment-friendly.

A battery of changes

The problem with the batteries of today is that they work on principles of electrochemistry that date back to the 18th century. The technology curve for them has plateaued out and even the best batteries have little chance of enhancing the power-to-weight ratio. Conventional batteries also contain toxic ingredients such as mercury and cadmium.

Fuel cells, which use hydrogen as a source, have a lot of inherent advantages. They produce only carbon dioxide, water and heat as waste products. Methanol and hydrogen-based fuel cells can provide 20 hours of talk time on a cell phone compared to the maximum airtime of four hours offered by lithium-based counterparts. Instead of plugging in your cell phone overnight, or swapping batteries, you need to simply snap in a new methanol cartridge.

Fuel cells are like power plants, and the technology has larger applications such as powering buses and cars. Thanks to miniaturisation, the industry is gearing up to make fuel cells small enough for consumer electronics. Electronics giants such as Motorola, Samsung and NEC are already set on getting a piece of the action in this high-stakes industry. The competitors are betting on different designs, but methanol-based fuel

cells promise applications that we are likely to see very soon. These fuel cells will sit at the back of battery compartments, and recharge the battery up to a month, eliminating the need for the battery's nightly snooze next to a wall socket.

Another long-term goal is to create fuel cells that store hydrogen and take oxygen from the atmosphere to create power. Many research institutes are simultaneously working on using pipe-like carbon molecules that have the ability to store and release hydrogen. Using Nanotechnology, researchers have created nano canisters filled with hydrogen encased in micron-sized carbon tubes. There have been credible results to date at the MIT and the Chinese Academy of Sciences, where researchers have reportedly made carbon nanotubes that can store 4.2 per cent of their weight in hydrogen.

Electronics giants too are knee-deep in experiments with carbon molecules. Japan-based NEC Corporation, together with two Japanese research institutes, has developed a fuel cell for use in mobile devices that could enhance your notebook's battery life to around three days. The new fuel cell uses a type of nanotube called a nanohorn, discovered by the team three years ago. They are called so because of their horn-like shape, which lets them have a larger surface area, making them better suited for use as fuel cell electrodes. The new fuel cell has about 10 times the ener-

gy capacity of a similar-sized high-density lithium battery, such as those currently used in notebook computers or portable electronic devices. NEC is hoping to commercialise this technology sometime between 2003 and 2005.

Aluminium power

Aluminum-Power Inc, Canada has developed an aluminium-air fuel cell that can revolutionise the mobile electronics and automotive industries. A breakthrough technology that offers high, sustained power over extended periods, it's an environmentally friendly approach to powering emerging technologies and improving old ones.

While most other energy cell technologies

Zinc + Air = Power

The zinc-air battery has arisen as a new choice for handheld electronics, because it can outrun conventional alkaline batteries such as the Energiser by three times, while being more compact than its alkaline counterparts. Zinc-air cells work in the same way as conventional batteries do in that they generate electrical power from chemical reactions. But instead of packing the necessary ingredients into the cell, zinc-air batteries borrow one of their main components, oxygen, from the air outside.

Using a reactant from the air saves on space, reducing the size and weight of the battery. Zinc-air cells contain no toxic compounds and are neither highly reactive nor flammable. In fact, they can be recycled, safely disposed of, or in some cases, recharged with new zinc. A US-based company called Electric Fuel is developing zinc-air battery technology for automobiles. Instead of polluting exhaust fumes, cars could one day be breathing out air.



Prototype of a Methanol fuel cell powered mobile

Wired Wear

Scientists in Germany have developed synthetic fibres that generate electricity when exposed to light. Researchers say the fibres could be woven into machine-washable clothes—the ultimate in portable solar cells. Just like the photovoltaic cells found in many pocket calculators, the new wires work by sandwiching three layers of malleable silicon between two conducting electrodes. One of the biggest challenges is making contact with each strand in a fabric. There are other issues too that need further work. Solar cells based on amorphous silicon are less efficient than their crystalline cousins. But they have advantages too. Besides being flexible, amorphous silicon is about a thousand times better at absorbing sunlight than the crystalline form. And the fashion conscious need not arch questioning brows as colour is not a problem. The fibre is transparent; it can be made to take on different colours by adjusting the thickness of the transparent protective coating. Depending upon the thickness of the layer, it could be made to look blue, brown or greenish.



Freeplay's self-powered radios and lanterns can be powered simply by winding each unit's handle

rely on gas or liquid, the aluminium fuel cell derives its power from a solid-state fuel. Because of the relative density of its power source, more energy can be liberated over a longer period of time at a considerably reduced cost. Experts estimate that the manufacturing costs of the aluminium fuel cell will be significantly lower than those of the lithium-ion or nickel metal hydride cells that are currently in use.

Traditional rechargeable batteries have a limited shelf life, low output capacity and require an auxiliary power source. The aluminium fuel cell can be recharged to its original capacity simply by replacing its rechargeable cartridge. This makes it ideal for use in instances where an auxiliary power source is unavailable.

Power dressing

In the not-so-distant future, you might literally get a charge out of hiking, walking or cycling. Your sweater could one day provide all the power you need to run your MP3 player, your mobile phone or your palmtop computer. If wearable computers are one of the recent revolutions in the digital industry, another is about using the kinetic movements of your body to charge electronic devices. And scientists are trying to figure out how exactly it can be done.

SRI International, a research firm in California, is working on boots that will convert the mechanical energy resulting from walking into electric power to charge gadgets, batteries and other devices. The idea for such an application came from an accidental discovery when SRI was working on artificial muscles. They created a polymer that contracted like a human muscle when electricity ran through it. They realised it could also work the other way round, creating electricity when it was compressed and released. To create electricity, the pressure could be applied while walking. The prototype boot generates about 0.5 watt of power, which is just about enough to recharge a cell phone. But Ron Pelrine, director of SRI, hopes that the boots' output could be raised to nearly 2 watts—enough power output to power a cell phone, a handheld computer, and a radio simultaneously. He estimates that the earliest we may see power-generating footwear hit the streets would be two years. And that depends on whether SRI receives the funding necessary to move the boots beyond the prototype stage. MIT Labs are also investigating heel generators, but the applications are not going to be dramatic given that power output will be severely limited.

This kind of promise has special applications

in the US military, which is interested in developing unconventional energy sources to power a soldier's equipment such as radios and electronic gun sights. By harvesting power generated by walking, soldiers of the future won't have to carry as many batteries and will have more room for other supplies such as ammunition and food.

Power to the chip

The silicon chip has been the fundamental building block that has powered the computer revolution. Silicon's properties make it possible for information to be moved quickly via miniaturised transistors. But the silicon revolution is not over yet; it may very well be used as a power source too. Scientists have successfully made fuel-based chip processors that channel chemical reagents to produce power. In one experiment, scientists successfully created a tiny steam engine out of a silicon chip. Instead of electrical impulses carrying data, the chip's channels carried steam. In another experiment, researchers at Sandia National Laboratories made a geared engine on a chip.

Such chip-based fuel processors coupled with miniature methanol or hydrogen-based fuel cells could power portable electronic devices in the future. This has many implications, and could trigger a second silicon revolution. A working power plant on a silicon chip could be used to miniaturise electronics. Scientists speculate that one chip alone could not power a laptop, but say that several of these chips working in tandem could easily power a mobile device. One experiment in Germany indicated that chip-based fuel processors could power laptops for up to 10 hours—a lot longer than the current capability of standard batteries.

Less gives more

PicoDyne, a semiconductor start-up, plans to release a range of chips that consume 50 to 100 times less power than current notebooks. Most of today's chips require 3 volts; Picodyne's chips promise to power high performance electronic gadgets with far lesser power. These chips could save power in a range of equipment, from laptops and PDAs to cell phones and hearing aids.

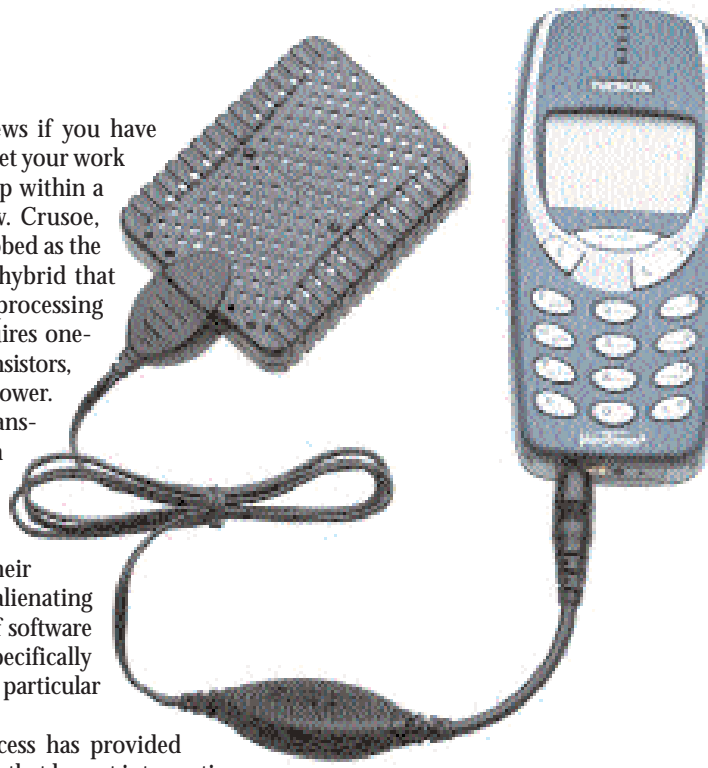
Transmeta was the first to announce Crusoe, a low power chip that is Intel-compatible with one-tenth the power requirements of a Pentium

III. That's good news if you have been struggling to get your work done on your laptop within a three-hour window. Crusoe, which has been dubbed as the software chip, is a hybrid that shifts most of the processing to software. It requires one-fourth as many transistors, and hence less power. Simultaneously, Transmeta has found a way to radically improve the ability of chip designers to make changes in their products without alienating the huge libraries of software that have been specifically written to run on a particular piece of hardware.

Transmeta's success has provided the proof of concept that has set into motion similar projects by IBM, HP, and others. Elbrus, a Moscow-based group has also designed a prototype on similar lines. Its E2K chip is pegged to run faster than Intel's new Itanium chip and still be compatible with all existing Intel-compatible software. A six-year-old IBM project, code-named Daisy, has looked at similar development techniques for the PowerPC chip. Compaq's Wiggins/Redstone project uses a sampling technique, which determines where most of the CPU cycle's time in a program are used, which it then dynamically optimises.

In fact, Intel itself has employed dynamic translation techniques to mimic the Itanium instruction set. The goal of the Intel project is to create a virtual Itanium-compatible chip in the software layer, which can run on Intel's current generation of processors. Software developers will thus be able to write applications for Itanium even before the chip is available. A project, code-named Dynamo, from the HP Labs is being tested at four universities. While a 700 MHz Crusoe chip would work only as fast as a 500 MHz Pentium, HP claims that applications will run faster with Dynamo than without due to code optimisation.

With battery power and power consumption entering new vistas, the days of racing to get the work done before your notebook battery runs out of juice may soon be over. ■



Zinc-air batteries can outrun alkaline ones by three times

<http://www>

<http://www.mbi.panasonic.co.jp>

For news and updates on Panasonic's research on Lithium-ion batteries

www.homepower.com

For technical know-how on building a self-powered home

www.realgoods.com

A site for eco-friendly products

www.research.ibm.com/daisy

Information on IBM's Daisy project

SET YOUR SIGHTS ON 'EM

The year rolls on. So does the personal gadget market, this time with Clicksmart cams, heady headphones, Aibo additions and more



↑ Panasonic SV-SD05 Small wonder

This headphones-only device manages to squeeze 64 MB on to a storage card. The SV-SD05 is a foldable all-in-one headphone with a built-in digital audio player, weighing in at only 3.2 ounces. It uses and comes with one AA rechargeable battery with charger and plays both AAC and MP3 files. Songs are stored on the 64 MB SecureDigital card, which can be upgraded as higher capacity SD cards become available. Buttons on both sides of the headset control the functions of the player and it can connect to the PC for music transfer via a USB cable.

Web site: www.panasonic.com

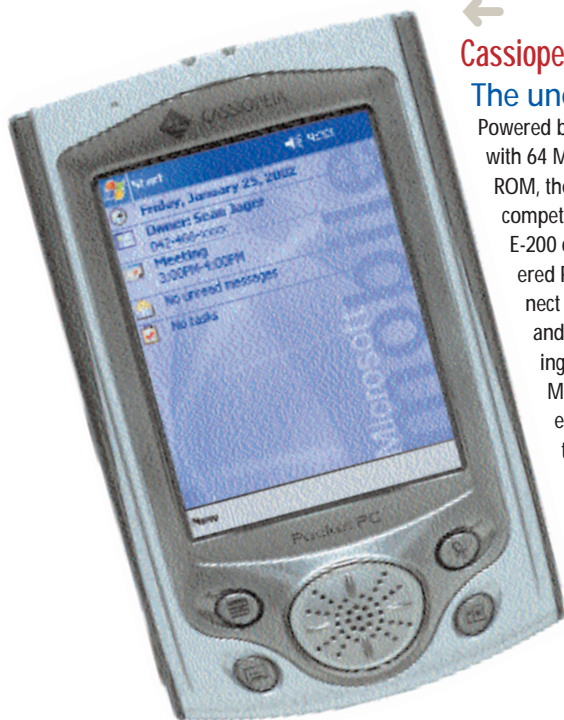


← Logitech clicksmart 510 No cameo this

Logitech's latest pair of digital cameras are being positioned as Web cams that double up as traditional digital cameras. The Clicksmart 510 has a stand for when you want to hold a Web chat, but also breaks away when you want to take it with you for digital snapshots. With 8 MB of built-in memory, it can hold 480 pictures or 90 seconds of video. It uses SmartMedia removable memory cards for extra space and is powered by four AAA batteries.

Web site: www.logitech.com





Cassiopeia E-200

The unexpected extra

Powered by a 206 MHz StrongARM processor with 64 MB of RAM and 32 MB of built-in Flash ROM, the E-200 should definitely be a worthy competitor to Compaq's iPAQ. The Cassiopeia E-200 operates on Microsoft Windows-powered Pocket PC 2002 software and can connect to numerous wireless network products and accessories seamlessly, thereby creating a complete mobile office environment. Microsoft's Pocket PC 2002 software is enabled for network connectivity through IEEE 802.11b, Bluetooth, CDPD (Cellular Digital Packet Data), CDMA (Code Division Multiple Access) and GSM (Global System for Mobile communications).

Web site: www.casio.com

LATTE and MACARON

New mutts on the block

Make room in your robo-kennel for two new playmates, LATTE and MACARON. Two new additions to the Aibo family, these lovable robotic companions feature true artificial intelligence. Moving freely among their environment, they recognise 75 voice commands, take digital snapshots and most importantly, give you their undivided affection.

Web site: www.sony.com/aibo



Sony Electronics Dream System

Sweet Dreams are made of these

The new Sony DVD Dream System is a complete and stylish home entertainment solution. Model DAV-C900 plays DVDs, CDs, CD-RWs and combines mini-tower speakers in a powerful 5.1 surround sound system with multi-channel Super Audio CD-playback capability and a fully digital A/V receiver. Add to that a 60-inch 16:9 LCD-based Sony WEGA, and you'll have to put seatbelts on your couch!

Web site: www.sonystyle.com/electronics



Blueprints for the disabled

A look into how the disabled use technology to enable their lives and how science is furthering their cause

Meet 42-year-old Eesha Deshpande, a home maker and mother of two. Her mornings are busy. She wakes up, performs her puja, prepares breakfast, sends kids off to school, and then when things get less hectic, sits down in front of her PC and chats online with friends and relatives abroad. Later in the day, she uses the Internet to shop for various goods like gifts and groceries. On the outset, her life appears to be typical day-to-day living. But for Eesha, this may not have been possible without the use of Assistive Technology.

Seven years ago, Eesha lost the use of her left arm and leg as a result of a collision between her Maruti 800 and a goods delivery truck. After various sessions of physical therapy and consultations with rehabilitators, Eesha now gets around

through the use of a motorised wheelchair when she tires of using crutches. Computer use is made possible using a smart combination of speech and handwriting recognition software and hardware.

There are millions of people like Eesha in the world—some are born with debilitating disorders and some are unlucky enough to acquire bodily defects as a result of an unfortunate circumstance. Regardless of what disability one may have, technology strives to perform as a surrogate of the bodily function that was lost, or never was in the first place.

What is technology if it cannot ease away the hurdles felt on a daily basis by a portion of our society? Be it through medicine, physical aids or electronically, technology and the proponents

behind it have a responsibility to not ignore those who can truly make the most use from it.

Thankfully, the branch of Assistive Technology focuses on doing just that. A variety of products and services are now available in the market for the disabled, helping them live near ordinary lives.

A rainbow for the unsighted

Less than 5 per cent of India's population has access to education as of today. Despite the claim of 'education-for-all', matters such as these are treated as welfare issues rather than government policies. Even as India turns out to be one of the superpowers in the world with rapid developments in technology, resources and manpower, a sluggish execution and lack of support from the Central government nulls whatever efforts are made for the disabled. It is only through private institutions and NGOs that technology stands a better chance of penetration to these masses.

With their sense of vision either gone or severely impaired, those suffering from any form of vision loss must make more use of their other senses in order to communicate. Aside from spoken words, Braille is a most effective way for the visually impaired to 'read'. As a majority of the blind population is familiar with Braille, it is a very useful medium for education.

Accessing personal computers is made much easier with the use of Braille peripherals. Though technologically inferior to modern methods of sharing information with the blind, Braille-based readers work by raising and lowering a different combination of pins electronically, to represent in Braille whatever content appears on the screen. Braille printers do the actual embossing of Braille onto paper. These are the counterparts of inkjet printers but instead of ink, special pins are used to create a physical impression on paper. Of all PC-related Braille devices, none may be as essential for a blind person as Electronic Braille Note takers. These are small, portable devices used for recording information entered through the use of a Braille keyboard. For output, note takers use a Braille display for speech synthesis for spoken voice. One of the more popular electronic note taking devices comes from Freedom Scientific and is called Braille 'n Speak. It features a word proces-

sor complete with spell checking capabilities. Advanced versions of a note taker are in the form of fully featured notebook computers complete with Braille display and synthetic speech. Like a conventional laptop, mobile PCs for the blind come with CD-ROM drives, a generous helping of memory, and multimedia sound. The only difference lies in the means of actually reading content.

Technology for the blind may have reached greater heights with the creation of the Dobelle Eye, the world's first artificial eye. By attaching a camera directly wired to the brain and mounted to a pair of sunglasses, partial vision was restored in the first recipient of this technology. Known as Jeff, the 62-year-old has been blind since age 36. With the Dobelle Eye, Jeff can now read letters that are 2 inches tall from 5 feet away. An ultra-

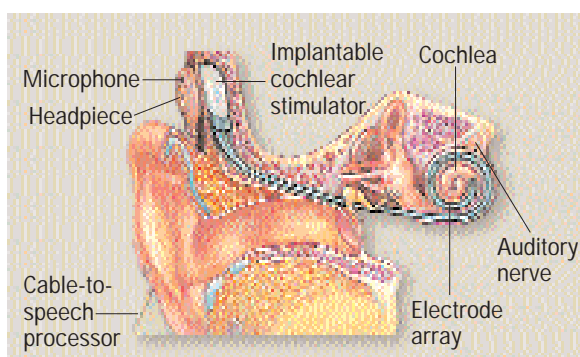
sonic range finder makes up the second lens of the pair of sunglasses. Both the finder and lens communicate with each other using a computer system carried on Jeff's waist. The electrodes attached to the brain stimulate brain cells allowing the user to see instances of light and limited vision.

This technology is still in its infancy and though Jeff can see enough to put a cap on the head of a mannequin, the totality of vision is far less than what a typical sighted man is used to.

A note for the deaf

A simple telephone conversation, which we take so much for granted, is out of reach for those with hearing losses. TTY, which stands for Telecommunication Typewriter, is a relay service that enables a deaf person to type in messages that are read out by an intermediary operator to the recipient. It enables the deaf to communicate, but it's not without problems. TTY is a bit slow when it comes to communicating messages. The service can often be unreliable and a typical 2 minute conversation extends to 20 minutes with the use of TTY.

With a cure for deafness many years away, medical researchers pushed technology to the next best thing, a cochlear implant. A cochlear implant is a tiny electronic piece fitted within the skull just behind the ear. This type of implant does not give the user natural sounds; the sound is a bit synthesised but it restores some of the ability to hear.



Technology has helped restore hearing with this device by translating sound energy into nerve impulses and sending those impulses to the brain

Biochips

If you were asked to inject a microchip into your head, would it sound like a bad case of X-Files obsession? Well, the truth, as they say, is out there. Researchers are looking to go skin deep and use chip implant technology for human health reasons. Such a chip could be injected under the skin of diabetics to monitor glucose levels and send the results out through radio-frequency communication.

Cardiac pacemakers have long held up the lives of those with heart ailments. Though the device works, it is far from perfect. In an attempt to circumvent complications associated with the age-old pacemaker, biochips can be used to regulate the process of abnormal heart rhythms after being inserted into the brain.

While the best treatment available for hearing loss comes in the form of a cochlear implant, the next area of focus would be on vision. Groups of researchers are in the process of developing a chip implant for the eye where the chip would mimic the various functions involved in sight. The duo of Joseph Rizzo from the Massachusetts Eye and Ear Infirmary and John Wyatt of the Massachusetts Institute of Technology, co-directors of the Retinal Implant Project, are currently working on an aid for the visually impaired based upon Biochip technology. Situated on a pair of glasses, a specialised Charged-Couple Device (CCD) captures and digitises images of the outside world, encodes it, and uses a signal to stimulate healthy neural cells.

Stem-cell Research

All of us would like to see our world as a haven, full of people free from any sort of impairment. But at what cost? Medical science has its eyes set on the highly controversial topic of stem-cell research. Current work on this subject shows promising results, but there is a catch. The only place stem cells are available is within a human embryo and removing these cells leads to the death of the embryo. Stem cells are known as 'blank cells' as they can be easily transplanted and specialised into any kind of cell for the body—as muscles, blood or brain cells. For example, a stem cell can be easily inserted into the heart in the event of heart disease and can heal the area that has been damaged. Stem-cell research has the potential to literally cure several diseases such as Parkinson's, diabetes, deafness and stammering.

Now, newer research quells the controversy of this line of study by using adult human stem cells extracted from the umbilical cord, fat tissue and bone marrow as opposed to using embryonic cells. One key advantage to using adult stem cells is that the chance of cell rejection is much less. For example, stem cells found in bone marrow can be used to heal another problem in your body without the fear of a stem cell being thrown out.

This technology is still in its infancy and is being tested (successfully) on animals. Researchers also forecast that practical treatments from stem cell study are still a few years away.

When people with normal hearing actually hear, sound enters the auditory canal and triggers hair cells in the cochlea, which is a spiral shaped tube filled with fluid. The hairs then send information to our hearing nerve and routes the other information to the brain. With the implant, a very small microphone picks up sound and sends it across to its processor, which is situated outside the ear. The processor then sends signals through the skin directly to the hearing nerve sidestepping the hairs that no longer work.

Hearing aids are tools commonly used by the deaf to amplify sounds. The depth and direction from sound allows those with normal hearing to determine where the sound originates. A hearing aid cannot help its user in determining the direction from which a sound originates. A device being developed by Swedish researchers might change this. Using a technology used in locating submarines in naval warfare, the team has devised a system that will allow a person with partial hearing loss to identify the direction of a sound's source. This system is designed to integrate with a pair of sunglasses. A pair of microphones pick up sound and an attached digital signal processor (DSP) calculates the route of the sound, similar to what a human ear does. Two small vibrating pads mounted on soft pads are attached to the temples and pulsate on the left or the right depending upon the bearing of the sound wave. Certain Morse code-like pulses are used to determine sounds coming from different areas.

Another famous technology with the deaf community is the Internet—it's a barrier-free environment and lets the deaf remain at the same level with normal people.

Technology steps in

Those suffering from debilitating diseases or with missing limbs can take respite in what today's expertise can offer. Getting mobile means making use of specially designed scooters, keeping in mind the needs of the immobile, such as ease of access and control. Motorised wheelchairs with computerised interfaces are another bi-product of what technology can do. For added comfort, researchers are in the midst of developing a sensory seat which picks up subtle changes in movements of the occupant and changes the seating position accordingly to create a more cozy and correct seating posture. Doctors have noted that posture is of key significance to the proper flow of blood within the body.

Physical immobility as a result of a disease or missing or paralysed limbs can possibly see technology create motion, not through physical means, but from the power of the mind. That's what scientists are edging closer to with the use of robotic limbs. From the realms of science fiction, successful tests have shown that the brain power of a monkey can control the movement of an artificial robotic arm—even across continents. Developers are confident that an arm or leg made of steel controlled by the mind will have similar dexterity as natural human move-

Superhuman Achievements

One particular individual's achievements fed

immense courage to those who endure impairments on a daily basis. Well known astrophysicist Stephen Hawking suffers from Amyotrophic Lateral Sclerosis (ALS or Lou Gehrig's disease), a disease which leads to paralysis by slow weakening of the muscles. In spite of his incapacity to move or speak, Hawking is often touted as the greatest genius of modern history since Einstein. A total understanding of the universe will be his nirvana. Technology remains in true favour not for Hawking, but for us by making it possible for the astrophysicist to share his research with fellow scientists and the public as well.

His inability to speak led Hawking to use Words+, a software package that can predict

and complete words of sentences from those

with disabilities like ALS. The program also converts text to speech where Hawking jokes, "The only trouble is that it gives me an American accent." E Z Keys also doubles as an environmental-control unit capable of switching on/off appliances in the house.

In unison with E Z Keys, Hawking's second helping of Assistive Technology is a small portable computer and a speech synthesiser strapped to his wheelchair. Using tech-

nology, Hawking has been able to write countless scientific articles, deliver hundreds of lectures and write a few books such as his best-seller, *A Brief History of Time*. Without the presence of this technology, solid breakthroughs in quantum physics would have otherwise been impossible.



ment. Though practical limbs may be a few years away, this field of study is jumping leaps and bounds higher than most areas of research.

Introducing computers in the lives of those without proficient motor skills requires an appropriate interface. Voice input aids with speech recognition systems is one form of PC control available. Using military technology, a system which recognises eye movements is being developed for those with a severe lack of muscle control. A simple glance at an icon and a subsequent blinking of the eye can open folders and execute applications. In a way, this device replaces keyboard strokes with eye movements.

Has technology done enough?

Can technology do it at all? Surely it has been able to aid the lives of millions worldwide and compared to three decades ago, research in the field of Assistive Technology has grown tremendously. But are the visions of human-like limb replacements with skin possible? As far as predictions go, it will be any time from 10 to 100 years before disabilities can be serviced and repaired like an automobile. But for now, the best hope that the disabled across the world have is the progression of stem-cell research. If successful, stem-cell research can lead to various cures for many types of impediments. Some call

Making Web Pages for All

Empowering those with physical impairments is the underlying principle of the Web Accessibility Initiative (WAI). Backed by the World Wide Web Consortium (W3C), WAI purses universal accessibility to the Web. New guidelines set by the WAI suggest:

- Web sites to be easily navigable through the use of either a keyboard, mouse or text commands alone.
- Pop-up windows and frames should

be avoided and descriptions of pictures and multimedia need to be embedded within the HTML code.

- Ensure that content is as readable without colour as it is with colour. The same goes for style sheets. With or without them, the content should be clearly visible.
- When using tables, identify row and column headers. For tables with more than two rows/columns, use tags to differentiate header and data cells.

it the final conquest in the pursuit for a fully enabled world. But this research doesn't go without controversy.

Some would argue that science at large has neglected the needs of the disabled community. However, the truth is that even in the 21st century, relatively little is known about the various afflictions people face. Various aids and devices do help, but they suffer from bulkiness and are expensive. Obviously, the community is looking for something better. How else can all of humanity claim to be the true masters of technology?

[http://www](http://www.directory.google.com/Top/Society/Disabled/Assistive_Technology/Assistive_Technology_Resources/www.ataccess.org)
[http://directory.google.com/Top/Society/Disabled/Assistive_Technology/Assistive_Technology_Resources](http://directory.google.com/Top/Society/Disabled/Assistive_Technology/Assistive_Technology_Resources/www.ataccess.org)
www.ataccess.org
Alliance for Technology Access

There's money to be made in the mobile industry. Are your skill sets savvy enough?

VIDYARAMANAN S.

There's lots happening in the mobile world. More than 600 million people around the world are using a GSM phone today. There has been a perceptible shift from desktop computing to mobile computing, so much so that the number of mobile users is soon going to exceed the total PC user base worldwide. Companies are looking at developing applications quickly and, in spite of the slowdown, there's a flurry of activity in the mobile market.

In short, the time seems ripe to forge a career in developing mobile applications for various platforms.

Companies are on the lookout for professionals with attributes like strong analytical skills and logical thinking. SAP was one such

company to take advantage of the fact and win the hearts (and time) of millions of software developers around the world through lucrative salary options. Companies are doing that and more today. Find out if you're bright, light, and have the skill sets to make a handy fit.

Maddeningly mobile

The frenetic focus of the software industry was initially on desktops. It was later with the imperious growth of cellular phones that the focus shifted towards mobile computing. This market soon acquired momentum, and today, the wireless market is flooded with all kinds of devices offering ever-increasing computing power.

Take the example of Chaitrali, a software business development officer who cuts short her

Upwardly Mobile



Imaging: Ram

work through a mobile phone and PDA. She uses her mobile device to scan city maps and find the best shopping spots. She transfers money from her ICICI account in Mumbai to Telstra (a mobile service provider) for paying her mobile phone bills, sends SMS to find out about flight timings, and keeps her life organised with her PDA organiser. There are many such people in the global workforce today.

The pressure that has accumulated for developing applications towards these hardware platforms is tremendous. This, in turn, means developing software applications which squeeze the maximum power out of mobile devices. Consider the example of mobile phones. The GSM system is now used in 171 countries, while the number of GPRS networks in commercial deployment exceeds 55 worldwide. A similar growth is expected in the PDA market.

There are numerous forums and initiatives by mobile and wireless device manufacturers informing interested developers about applications for the mobile platform. These are the best places for beginners or budding developers to ask questions about development of mobile computing applications and the standards that govern them.

Possibilities

The scope of applications that one could develop for the mobile platform is exhaustive. Most people think 'mobile phone' when they think of mobile devices, but devices like PDAs and pagers also fall into the mobile category. Applications could be classified into categories such as business, games, entertainment, communications, music, graphics, navigation, educational, and so on.

Simple applications such as Short Messaging Services (SMS), stock tickers, and weather status to complex applications such as banking and financial transaction services can be developed for the mobile platform. You could either develop a standalone software for the device or develop something which requires the connectivity of devices through some standard of communication. By standalone software we mean applications such as organizers, enhancers, cosmetic improvement software, better input techniques, etc. All other mentioned applications or services fall into the range which need a wireless communication means for messages to be relayed amongst devices.

What other applications can be developed for mobile platforms? Here's a list: Database software, document readers, PowerPoint presentations, keyless entry for security devices, SMS and logo utilities for cellular phones, movie players, city maps, fax applications to use the handheld device as a fax machine.... And there are plenty of other applications which could be creatively unleashed or which could come out later when the need arises. A cutting-edge application like banking or financial transaction services might require more labour and expertise, whereas an individual could look into options like enhancers, organizers and word processors for PDAs, and ringer tone applications, icons, games and other simple interface applications for mobile phones. Applications like wireless access



Mobile application development has been put into use to change people's lifestyle. Once an idea makes business sense, either the individual sells the idea to a company or builds his/her own team and makes the product

[Lavina Poorswami](#)
eVectorMobile

to intranets and database administration through Palms and mobiles can be developed only after acquiring considerable expertise in the area of development.

Learning and help

The first step in forging a career in the mobile industry is finding out about training and coaching available for mobile applications development. No single coaching class or training institute offers a truly comprehensive course for mobile application development in India. However, NIIT, Aptech, and a few other institutes do offer training on Java and in some areas of telecom and networking technologies.

Mobile enthusiasts should build on their existing skills through exhaustive reading and figure out where the possible bottlenecks might be. They must refer to the multitude of knowledge bases and pose questions to experts over the Internet. Ashish Gupta, CEO of Notcomguys.com, recommends self-learning rather than taking coaching from a novice institute.

As mentioned earlier, companies that know the potential the mobile market wields have started forums and communities to boost the developer community towards the mobile platform. Some of them would assist you in getting your product in the market too. Most hardware

Jargon Buster

GPRS: General Packet Radio Service, a radio technology for GSM networks that adds packet-switching protocols, shorter set-up time for ISP connections, and offers the possibility to charge by amount of data sent rather than connect time.

GSM: Global System for Mobile communications, the most widely used digital mobile phone system and the *de facto* wireless telephone standard in Europe. GSM is now one of the world's main 2G digital wireless standards.

i-mode: The proprietary packet-based information service for mobile phones. i-mode delivers information (such as mobile banking, and train timetable) to mobile phones and enables exchange of e-mail from handsets on the network. It is very popular in Japan, but is not currently being used elsewhere.

SyncML: Synchronization Markup Language is an industry-wide effort to create a single, common data synchronisation protocol optimised for wireless networks. SyncML's goal is to have networked data that supports synchronisation with any mobile device, and mobile devices that support synchronisation with any networked data. The SyncML consortium was set up by IBM, Nokia and Psion among others and is supported by Symbian.

WAP: Wireless Application Protocol is a set of communication protocol standards to make it easier to access online services from a mobile device. WAP can be used for accessing Internet type services on mobile phones or handheld devices.

vendors chip in with tools and software development kits which normally support their hardware in particular.

Forum.nokia.com is a site that brings together professionals with amateur developers as well as with experts developing applications for Nokia mobile phones. The company provides tools like Software Development Kits (SDKs) for Symbian OS (an operating system for the mobile platform), technical documents, as well as answers to queries specific to the Nokia development platform. Nokia also allows you to test applications with their simulators and testing tools and experts from Nokia help you with application development. Other similar services and initiatives include Ericsson's mobile applications initiative. You can register on the company's site to get educational, technical and marketing support. Microsoft has a similar developer assistance scheme for the developers of Pocket PC (an OS most PDAs use for providing a Windows-like look and feel) applications.

Many of these forums allow you to test your applications. Some even give you tools and you can send in your software for enhancement by experts in the community. Microsoft provides



If you have an idea for a 'killer app', build a team to develop and sell it to a bigger company

[Ankur Singh](#)

Apex Technologies

a Mobile Explorer software to test pages which are to be displayed on a mobile device. Wirelessdevnet.com has channels where after registering one can discuss problems pertaining to specific hardware developments. These forums and communities act as your anchor and make you comfortable in the mobile development world.

Mobilespeak

Developing for mobile devices does not require extraordinary skills, not at least according to Gupta, who says, "Anyone with a basic knowledge of handheld devices and understanding of popular programming languages like C++, Visual Basic, Java or XML can begin developing on the mobile platform".

While developing applications for mobile devices, the work starts on a desktop PC. For example, if you are a Visual Basic professional, you could use Microsoft's Embedded Visual tools (which has Embedded Visual Basic) to develop your application for the mobile device. You could then write the application on your desktop with the SDK from Microsoft and later compile it to make it work on the intended device. The software can be tested on emulators before it's actually ported to the mobile platforms.

Most of the development SDKs are available as free downloads on the Internet, and some of them can be ordered on a CD-ROM from the respective vendor's site. At the most, you might be required to shell out a couple of dollars for shipping charges.

Standalone applications like a simple task organizer for a PDA do not require a major understanding of network standards, but it's desirable to have awareness in case you intend to graduate to development of network-based applications. There are a lot of wireless standards that one needs to know, however. Lavina

1/2 page Ver Ad

Poorswani, a senior professional in the mobile development arena, says, “an openness to learn emerging specifications and protocols and application programming languages like Java and XML would be the key requirements.” Be aware of the new standards being developed. If you happen to visit the mobile developer’s/coder’s site, you’ll find lots of everyday listings pertaining to new standards in communication, tips and tricks regarding the same, technical documentation of standards and protocols, and simple software testing tools and emulators which would be handy during the application development process.

Developing Web pages to be displayed on handheld devices and mobile phones is a long-term process. Nowadays, when companies develop Web sites, they prefer to also work out a mobile solution for their site. Content developers can use cHTML, HTML or WML markup languages for developing content. With Microsoft’s Mobile Explorer, one can test Web pages before passing them on to clients. This requires wireless network connectivity. To develop such applications, it is advisable to know about standards of communications and the protocols via which these devices talk to each other.


You might be wondering what operating system these devices would support. The answer is operating systems like Symbian, GEOS and Epoc. Development of applications over these OSes requires better understanding as your development work is for hardware which runs on proprietary or standard operating systems. SyncML, XML, WAP, WML, J2ME and JMS are a few more technologies that you need to know. You could choose the language you are comfortable with or you could make a choice of language and OS based on your application requirement.

Opportunities abound

Now if you are equipped with the required skills, you’d be bubbling with enthusiasm to find out the various career options in this industry. Mobile usage, though slow in India, has been witnessing a progressive growth. You could be an individual developer or you could work for a concern which delivers mobile services. There are three ways you can put forward your application in the market: sell to the mobile operator; sell a patent to a company; or partner with an enterprise solution provider to sell to corporate clients.

As an individual you would always have a problem marketing your application or rolling it into the public domain. It’s more convenient if you are registered with any of those forums or mobile initiatives. A simple reason is that a message posting will make the entire developer community aware of your brand new application floating around. Moreover, these forums are visited by users who check for frequent releases of software, and by company insiders.

Wirelessdevnet.com is a special network. Registering with the site enables you to market your software through the site’s posting services. This network also offers a listing of job providers and job seekers. A registered candidate receives updates on the latest happenings in the wireless world as well as information about the latest vacant positions and requirements.

These, in a nutshell, are the various options and, as pointed out, underlie the enormous potential in the mobile segment. What’s challenging is to develop minimally sized applications and to merge creativity with application development. There’s much money to be made in the wireless world. Don’t stand disconnected. 

1/2 page Ver Ad

The Fine Print

Take a second look at your warranty before buying computer hardware. You'll be glad you did, especially when your computer goes kaput!

AVINA LOBO

You're as pleased as punch with the 11-month-old computer you bought at a throwaway price. But all of a sudden tragedy strikes—the motherboard goes for a toss. Nothing's working, and as a last ditch effort, you dig your warranty card out assuming that getting a replacement will be smooth sailing. But it doesn't quite work that way. The person you got the fantastic deal from is nowhere to be found and your 'warranty' won't cut ice with the service centre. After several calls and trips, you throw up your hands in despair wishing you had paid more attention to your warranty at the time of purchase.

Does it really matter?

This situation may sound familiar to a lot of those who've had PC components such as the motherboard or hard disk changed. While some of you might have had absolutely no problems with getting components replaced or serviced, others may have a different tale to narrate.

The not-so-good experiences range from not being given a warranty at all to some assemblers shutting shop and taking off before the warranty expires, often leaving customers in the lurch. "We paid a much higher price than what was quoted in the advertisements in the newspapers and insisted on a written warranty from the assembler, but were told we'd have to pay around Rs 4,000 more if we wanted a warranty," say Gary and Gerald Misquitta from Mumbai who purchased their computer two years back from a person who was recommended by their friends. "So we went ahead and purchased the computer without the warranty. However, a week later when our hard disk crashed, he did give us a replacement." But four months later when they



Illustration: Mahesh Benkar

had a problem with their PC again, they found that the person had taken off to another country. "He asked a friend of his to service the computer if we had a problem and the friend did help us, but it was a favour and we'd have to pay him the next time he came over to take a look at the computer," adds Gerald.

So are dealers and computer assemblers out to get us? Well, not all of them. But you as the customer need to be careful. How many of us are really aware or take the trouble to find out about the warranties that we're entitled to or read the fine print while purchasing computer hardware?

Different warranties

Clear-cut warranties are offered on every consumer electronic product such as refrigerators, televisions or toasters that you buy. These warranties are offered directly by the manufacturer to the consumer and it's the manufacturer who honours the warranty in case the product stops functioning. So what's different about computer warranties? In the IT industry, computer hardware and software is routed through

Brands ahoy!

Warranties differ depending on whether you're buying a branded or an assembled computer. In the case of branded computers and peripherals such as those from Compaq, IBM or HP, the warranty issues involved are pretty straightforward. You buy the product through an authorised dealer and the manufacturer offers the warranty to the consumer through the dealer. The warranty period for branded desktops, peripherals, workstations or servers depends on different models and is clearly spelt out by the manufacturer. For example, the Compaq or IBM (India) Web sites have a warranty table with the duration of the warranty on different models and products. It explicitly states the warranty period for the parts, labour and onsite warranty (if offered) on a particular model.

What if I have an assembled PC?

In the case of assembled PCs, each of the system components such as motherboard, hard disk, floppy drive, CD-ROM drive, monitor, keyboard, mouse and so on, comes with a separate warranty from the respective manufacturer. The warranty period differs depending on the component. Reputed motherboard brands such as Intel or Asus and hard disks from Samsung carry a three-year warranty. But when you buy a computer from an assembler, you generally get a one year onsite warranty on the entire assembled system which states that components will be replaced should they fail to work within the warranty period.

While dealers generally offer a one-year warranty, there are some assemblers who will offer warranties of more than a year on certain systems, for example Pentium III computers. This varies on a dealer to dealer basis, so be sure to ask about your warranty options while deciding to go in for a particular configuration.

So if a dealer gives you a one-year warranty, but your motherboard has a warranty period of three years, how can you ensure that you get the full benefit of the warranty on these components even after the one-year warranty the dealer gives you expires? What you need to do is ask your dealer about individual warranties and how you should follow up with the company service centre. Most reputed dealers, once the one-year warranty expires, will help you with this but won't follow up with the company on your behalf. You

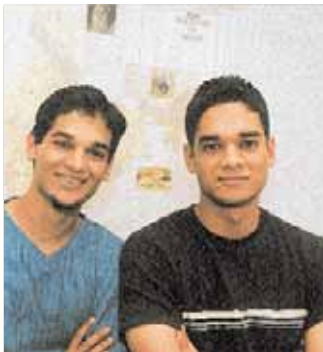
Understanding Computer Warranties

Before going into how computer hardware warranties work and what you as a consumer can and should do to safeguard your interests, let's first look at the different kinds of warranties offered on computers and peripherals.

A warranty refers to the performance of the product and states that the performance of the product will match what the company promises. Hence, if something goes wrong with the product during the warranty period, the warranty states the terms and conditions under which a specific part or the entire product itself will be replaced.

There are different kinds of warranties offered by computer hardware manufacturers. A replacement warranty promises you replacement of the component or the product within a stipulated period, while a repair or a service warranty states that your product or the component will be repaired but not replaced.

Onsite warranties are offered for certain products, which means that an engineer or a service provider will service the product or attend to your problem at wherever the product is located. In most cases the onsite warranty requires that the product be located within a reasonable distance of the service centre. In case you're located out of range then at the point of purchase an option of a carry-in warranty is usually offered. A carry-in warranty indicates that you need to bring in the product to a carry-in repair centre or dealer and arrange to pick up the system after it's repaired.



Gary and Gerald Misquitta

Computer users, Mumbai

"We paid a much higher price than what was quoted in the newspaper ads and insisted on a written warranty from the assembler, but were told we'd have to pay around Rs 4,000 more if we wanted a warranty"

distribution channels comprising resellers, dealers and retailers before reaching the customer. Hence, the warranty is offered by the dealer from whom you purchase the product and is supposed to be honoured by the dealer himself.

Computer dealers and assemblers normally keep a buffer stock of components, which they purchase for the express purpose of replacements. In some cases, they are required by manufacturers to keep a buffer stock. If you have any problems with the hardware you've purchased, it's the dealer who either replaces the hardware from their buffer stock or follows up with the manufacturer/authorised reseller on your behalf for replacement or service.

There's no clear-cut policy on warranties as different dealers and assemblers offer different types of warranties to their customers. Some even offer warranties of different duration.



"Considering the margins at which we operate, it does not prove cost effective to follow up after the one-year warranty expires"

Saket Subramaniam

Partner, Netbrain Solutions

Enhance your Warranty

Your warranty takes care of your computer troubles for about a year or longer depending on the product you buy. But what if you need support after that and can't take care of it yourself? That's what Annual Maintenance Contracts (AMCs) are meant for.

You can sign up with an AMC after your warranty ends, at the time of or even after buying your computer. Rates for AMCs differ from dealer to dealer but normally work out to around Rs 2,500 to Rs 3,000 annually. AMCs normally cover onsite service only or installation to ensure that your PC works fine. It doesn't cover the cost of hardware. Branded PCs such as HP and Compaq too have 'warranty enhancements' which you can purchase at the time of purchasing your computer or a couple of days after purchasing your computer. For example, the Carepaq warranty enhancement for Compaq computers worldwide covers hardware services and software support for up to three years. So remember to ask your dealer for warranty enhancement options or AMCs, evaluate carefully and pick the one based on the kind of support that you're likely to need.

have to take care of that yourself. "Considering the margins at which we operate, it does not prove cost effective to follow up after the one-year warranty expires," says Saket Subramaniam, a partner at Netbrain Solutions which deals in branded and assembled PCs. "You'll have no problems getting the component serviced or replaced if you contact the manufacturer's service centre with the product serial number." Some assemblers will transact with the company but at an extra charge. You should also check the exact number of days your warranty covers. You should get a 365-day warranty from the dealer you buy your computer from as some manufacturers such as Zenith, IBM or HP offer their dealers and resellers warranties of more than a year—about 13 to 15 months—to take into account the time it takes to sell the product.

Your warranty begins from the date the product is sold to you. It is strictly performance related and is declared void in case of physical damage to the product. "The warranty doesn't

cover transportation of the component or product; for instance, a hard disk experiencing shocks during transportation," says Zaveri, of Big Byte Computers. He adds that breaking of the warranty seal or burn marks on the printed circuit board (PCB) due to a short circuit also declares the warranty void.

So if you've decided to assemble your own PC, there's no problem at all. Just buy all the components from authorised dealers and get your warranty on individual components, but be sure to choose components from reputed brands

If a company Web site states that you get a three-year warranty, you might want to check out the duration of the warranty that distributors in India will offer you. In the case of certain products, for instance, Seagate hard disks, dealers in India offer only a one-year warranty even though it has a three-year warranty all over the world. If the product manufacturer has a Replacement Material Acceptance (RMA) centre in your country, then getting the benefit of the full warranty is no problem. But if the RMA centre is in a different country then you will have to reckon with the two-way customs clearance and duty payment involved in transporting the product to that country.

Trading in the relics

That 6 GB hard disk you bought a while back has a problem and you need to get it replaced. Fortunately for you, it's within your warranty period. But wait a second. There aren't any 6 GB hard disks in the market. What do you do?

"We generally keep a buffer stock of older

Buyer's Checklist

- ✓ Find the configuration of your PC and opt for components from reputed manufacturers having a well-defined warranty policy. All reputed manufacturers have Web sites with the terms of warranties on various products spelt out. Read them.
- ✓ While choosing the brand of a PC or components, ensure that it's reputed and offers good service infrastructure in your city. Such components are worth the slightly higher price you pay for them.
- ✓ Make sure the brand you're purchasing has a service centre in your city.
- ✓ Check out the background of the dealer or assembler.
- ✓ Insist on a written warranty with the dealer's stamp and signature, clearly stating that you have a warranty on your computer for a stipulated period. Check for whether it's a replacement, repair, a carry-in or an onsite warranty.
- ✓ Get someone who knows about computers

- to check your machine as soon as it reaches you to ensure that all components are in order.
- ✓ Beware of fake motherboards. To ensure you're not getting RAM that has been used before, look out for signatures on it. When RAM is sold or serviced, dealers usually sign on the RAM or on stickers attached to the RAM.
- ✓ When you're giving in a component for repair, look for an identification to ensure you're getting your own product back. Most dealers sign with a marker on the board every time the product goes in for servicing.
- ✓ Don't simply 'go, buy a computer'. If you don't know what the inside of a computer looks like, take along someone who does. Ask the assembler questions about warranties and service.
- ✓ Don't bother with a warranty of more than three years. Technology changes rapidly. What you got three years back is likely to have been replaced by newer models.

products which we purchase from the market to replace the older models of components,” says Zaveri. But what happens when the RMA stock gets depleted? “This happens very rarely and mainly in the case of processors”, says Subramaniam. “The customer can opt for a newer model for which he has to pay a marginal difference (which usually works out to a couple of hundred rupees) between the current prices of the older and newer model. If the price difference isn’t too much then we sometimes pay the difference.”

Beware, O buyer

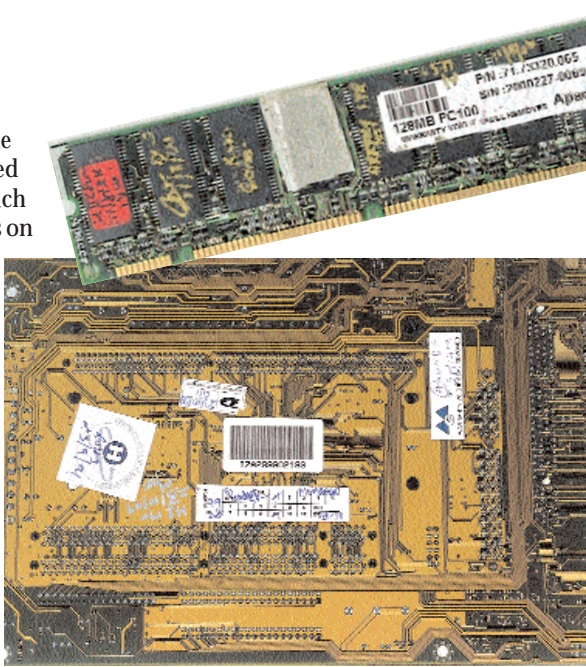
There are many fly-by-night operators who’ll promise you an assembled PC at dirt-cheap rates. Dealing with them normally ends up proving expensive in the long run when your computer breaks down before the warranty period. “Most people don’t understand this and compromise on product support to save money,” says Varsha Bapat of Computer Track, a Compaq dealer.

You’re always at an advantage when you purchase your system from a reputed dealer even if it means paying a marginally higher price. You get an assurance that your warranty will be honoured. Most reputed dealers also have a good, long-standing relationship with the vendor. So in case of a problem, you’ll get your replacement

quickly. “Make sure the dealer is well-established and check for how much money the dealer spends on advertising and being visible,” says Subramaniam. A lot depends on the relationship you have with your assembler. A number of hardware buyers we spoke to said that they trusted their dealers to honour the warranty.

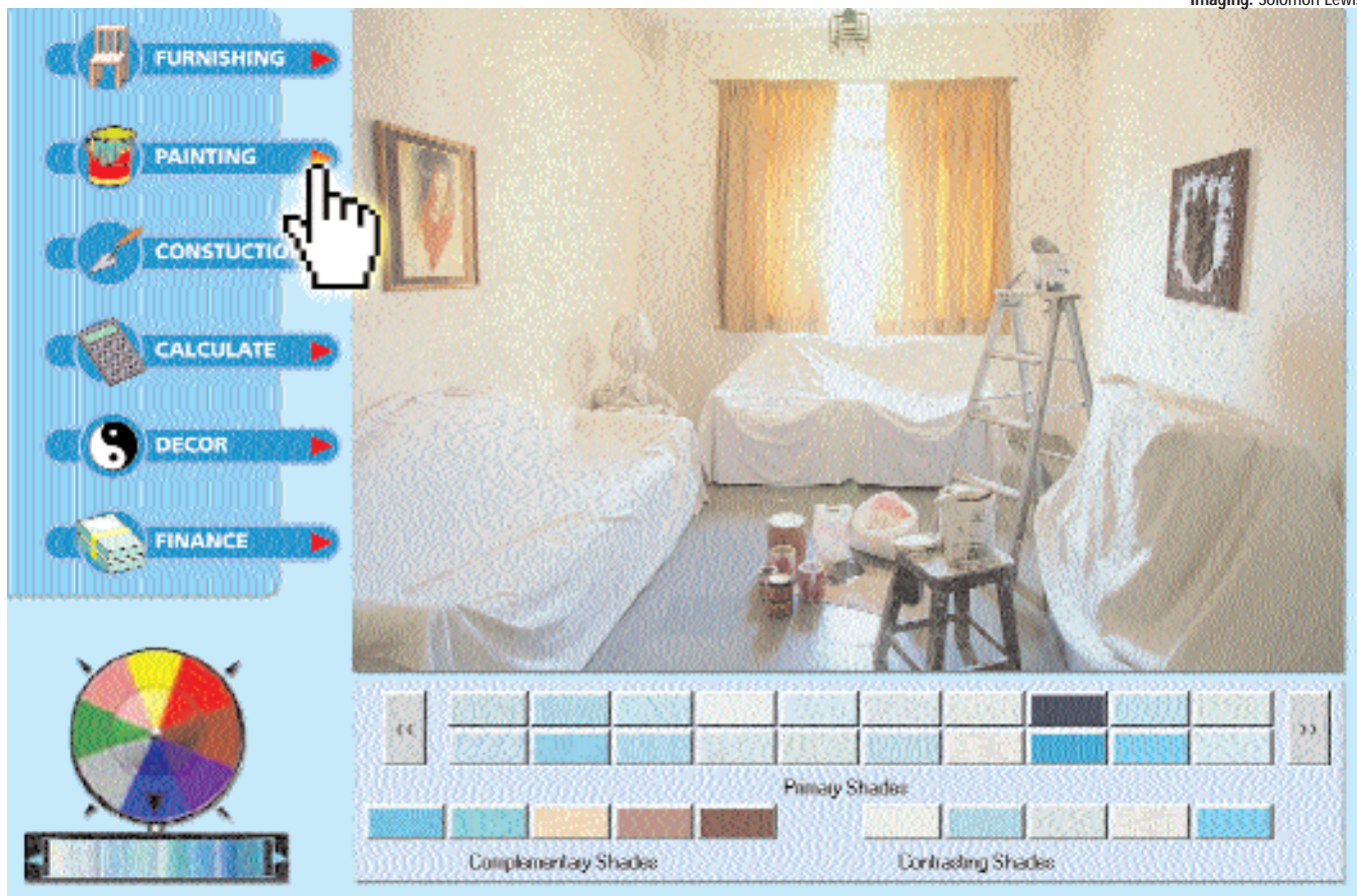
It’s your call

Computer warranties aren’t all that well streamlined and don’t follow any clear-cut policy. And there are shady dealers out to get you. But if you are well informed and do your homework, you can spot a fly-by-night operator a mile away. And make sure you don’t compromise on product support. Remember—caveat emptor: Let the hardware buyer beware!



Top: Look out for signatures on the RAM to ensure that you are not getting a second hand piece

Above: When you send your motherboard for servicing, how do you know you are getting your own motherboard back? Just flip it and check for these stickers



A Model Home

Quit juggling cans of paint, lugging furniture and dealing with decorators. Remodel your home online

AVINA LOBO

The paint's peeling; the furniture's looking a bit worn. You feel like giving your home a complete makeover. The easy way out would be to hire an interior decorator to take care of everything (except for signing the cheque).

But if you prefer the do-it-yourself way and want to personally get involved with everything right down to purchasing the last brick, home building or remodelling can be very time consuming. You'll wear yourself out getting hold of contractors, painters and carpenters and before you know it, you'll be swamped with more bags of cement or cans of paint than you need and an empty pocket.

Wondering if there's an easier way to plan the building or remodelling of your home without having to rely on interior decorators and contractors for ideas and options?

Build offline, plan online

Building or remodelling a home is definitely an 'offline' task. You have to buy bricks, sand and

paint, and hire people to get it done. So what does the Net have to do with it?

Two very important aspects of every project are planning and research. Get this right and you'll end up saving a lot of money, time and energy. The Net gives you the opportunity to get all your research done online—from deciding the plan or layout of your home to finding out where you can buy building material in your city and planning the furniture arrangement and decor in your room. Moreover, it provides you with tools to help you stay in control of the entire process of remodelling, from scheduling to budgeting.

The first step obviously is to decide what you want—the built-up area, number of rooms and the plan or layout of your house or apartment. If you need a ready plan or are looking at layout ideas, head over to Lafarge-India (www.lafarge-india.com), which has around 20 plans for all kinds of apartments, whether it is a one-bedroom or a three-bedroom house. An enlarged sketch and a description accompany each plan. You'll also

find sketches of plans for each of the floors, estimates of the amount of material needed for construction and the total cost of construction.

You can also check out plans for homes, apartments, offices, cottages and farmhouses at www.floor2roof.com and www.dreamghar.com. Other sites for home plan sketches are www.house-plans-home-planning.com and www.homeplanfinder.com. These sites have plans of houses ranging from 1,500 square feet to over 4,000 square feet as well as plans of garages, cottages and duplexes or split-level homes. At these sites you'll also find a sketch of the house along with a brief description of the number of rooms and the features of the house.

Dream a home

One good site that can help you plan the remodeling of your home is www.hdfcrealty.com. Browse through the Design Gallery in the Build-HomeIndia section to catch up on ideas and designs for your kitchen, bedrooms, bathrooms, staircases, courtyard, or sit-outs and landscaping ideas for your garden.

You'll find more than just pretty pictures of different rooms; every look is accompanied by a floor plan. Each section in the design gallery is accompanied by links to a collection of articles written by home improvement professionals

such as architects or interior decorators. You can also get free advice online on your home remodeling questions from HDFC's panel of home improvement experts. The site has a 'Dream Home folder' where you can save the designs and plans that you like.

Lafarge-India.com's detailed guidelines and useful tips on doing up almost every room in your home are extremely useful. These guidelines contain remodelling do's and don'ts, and approximate rates for different wall finishes and tiles, etc that help you draw a quick estimate. The comparative analysis of remodeling costs gives you a costing based on certain specifications such as materials used and the areas being remodelled.

Homecentral.com has tips on decorating



Hdfcrealty.com has room plans that you can use as a guideline to remodel your home



Calculate painting costs with the painting cost calculator at Asianpaints.com

your home such as maximising your kitchen storage space, selecting carpets or choosing the lighting for your home. The Web site of Ikea, the home décor vendor (www.ikea-usa.com), has interactive guides on storage at home, checklists and tips for your home. You can also take a look at some great ideas for home decor as well as furnishing.

Estimating material costs

Once you've decided on what exactly you want, the next step is to get the materials required. And if you are remembering those times you did up your house and mentally worked out the amount of material you needed, only to find later that you had bought too little or too much, then worry not. Use the home planning tools at Hdfcrealty.com to help you estimate the material you need. Planners like the Kitchen Tool or the Bedroom Tool will help you work out how much it's going to cost you to remodel that particular room based on its dimensions, fixtures such as the size of doors or windows and room layout.

Most of the rates (such as those for painting or room accessories) are calculated as per the products available on the site. You can do all this

effortlessly by simply filling out a form with the relevant information. Tools such as the Paint Calculator and the Tile Calculator let you plan the quantity of building material you need according to your room dimensions and also work out the cost.

Need a home improvement loan? You can calculate your estimate and use the loan calculator to figure out your monthly EMI and even apply for a loan online.

Homecentral (www.homecentral.com) also has a good range of tools and calculators including a guide to selecting the right kind of paint for different interior and exterior surfaces, whether it's metal or concrete, based on considerations such as wear and tear and what you'll be using to clean the surface. There's even a wallpaper estimator and an adhesive selector among other tools.

'Mera wala cream' online

Baffled about the perfect shade of 'mera wala cream' for your living room? www.asianpaints.com offers a range of shades on the site's shade catalogue.

Asian Paints also has a home decor section with tips and useful information about choosing the right colour scheme. It also has a tool that lets you select the right kind of paint for the surface you need painted. Read up on information about the paints in their product range such as the finish and drying time, method of application and directions for use.

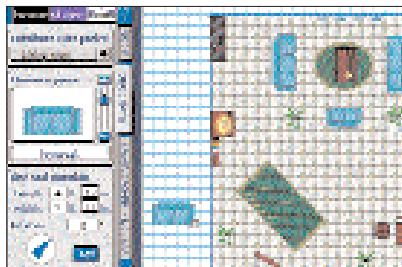
The site even has a visualising tool: just click

Design a Room Online

Want to rearrange your room, from furniture and potted plants to flooring? Visualising in your mind's eye how you want your room to look is not so easy and you may end up with the backbreaking task of pushing furniture back and forth.

You can now play around with different arrangements and colours with interactive room designers. Online tools like the one at <http://javaboutique.internet.com/Design-a-Room> help you visualise the layout of your room. It's quite basic and lets you define the dimensions of different rooms such as the kitchen, bathroom or living room and lets you add a few pieces of furniture, doors and windows. You can set the size of furniture (basically just shapes) and move it around the way you want. You can also choose furniture that's already there in the list or create your own.

One of the best room planners can be found at Homestore.com ([\[store.com/Decorate/Multimedia/Room_Planner\]\(http://store.com/Decorate/Multimedia/Room_Planner\)\). You can design any kind of room, indoor or outdoor space in homes or offices. Add fixtures such as doors, windows, walls, dividers, fireplaces, etc. You can even experiment with flooring—different designs](http://www.home-</p>
</div>
<div data-bbox=)



Rearrange your furniture virtually with this handy room planner

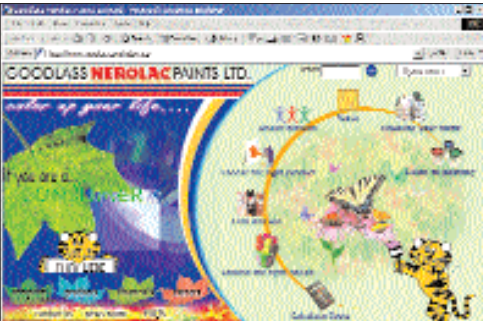
and patterns for wooden, marble, stone floors as well as ceramic tile designs, carpets and linoleum.

Homestore has quite a wide range of furniture loaded to suit every room such as kitchen, living room, bathrooms and accessories such as televisions, potted plants, sculpture, rugs and bookcases so that you get the feel of designing a home, not just pushing shapes around. You can set and adjust the size of the furniture with your mouse or rotate it to place it exactly where you want. You can save your room layout and even print it out for use as a guideline when redecorating your home.

Want to figure out a good floor and wall combination? Try out this room viewer at <http://www.armstrong.com/roomviewer/index.jsp>. You can't rearrange furniture at this site but you can select pictures of the interiors of rooms and play around with different types of wall shades, floorings and cabinet finishes and save your pictures.

on the shade card and select shades for the walls or the cabinets of the picture online to get an idea of how certain shades look on walls and cabinets and also the shades that complement each other.

If you are having trouble budgeting for the paint job, you can use the cost calculators at Asianpaints.com for an estimate of the amount of paint or primer required and the cost of painting your home on a room-by-room basis. The calculation is done on the basis of your room

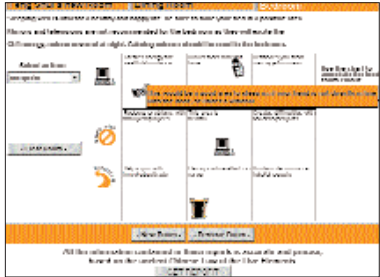


Painting and remodelling a home is easy now dimensions, the number of doors and windows and the different kinds of paint and finishes in the Asian Paints product range. The site even helps you locate paint dealers in your city.

A Positive 'Chi'

Almost every home décor and home-building site offers information, tips and advice on how you can redecorate your home according to the ancient sciences of Vaastu and Feng Shui.

To get your Feng Shui advice online, try the online tool at www.feng-shui4free.com to help you figure out where you should place your bed or which part of your living room has a positive effect on your career. Just create a new room specifying the direction of your room and the position of your door and you'll get a chart telling you which areas of your room have positive or negative energy. To figure out if you should keep a mirror in your bedroom or the right position for your computer, select the furniture or accessory from a drop-down menu and try placing it in different parts of the room to know which position will benefit you best. Follow the colour chart to find out which colour will have a calming or upsetting effect on your room.



Plan your room according to Feng Shui principles

To build your home according to the principles of Vaastu, try the online Vaastu evaluation tool at Buildingsteps.com (www.buildingsteps.com/tools/check_vastu.html). It has a drawing tool that you can use to draw out the layout of your building or apartment with details such as road position and gates.

Submit this for an evaluation of whether your site is in accordance with Vaastu principles for peace and prosperity.

e-Construct your Home

Homebuilding takes a lot of planning and coordinating and it's not something you're likely to do as often as remodelling.

Lafarge.com is one site you can consult before you kick-start your plans. It has a flowchart of the entire building process from start to finish, taking you through the purchase of land, legal issues and registration, getting the layout and foundation done to the right time for fixing doors and windows or the electrical connections and wiring.

Lafarge also has a budget planner, which is available as a downloadable Excel sheet. It covers all the details that go into the building of a house along with estimates of the total cost, helping you stay in control of your budget. The Time Scheduler lets you keep track of the time so that your dream home is ready right on target. This Excel scheduler has it all down perfectly—who should be involved in your project and at what stage of the project should plumbers or masons or painters start or finish work.

Lafarge also helps you identify who you need to engage to build or remodel your home and guidelines on how you should go about selecting the right architect or workers and getting the best out of them.

You can even search the Lafarge-India reference of books available in the market. The site also gives you addresses of bookstores where you can get your hands on home remodelling books.

At Asianpaints.com you can also find information on Vaastu and Feng Shui, and get free advice from the online design consultant.

Nerolac (www.nerolac.com) too has everything you need to know about painting your home, from planning to the actual painting process and how you should take care of the painted surfaces of your home.

There's an online guide to help you choose the right shade based on the existing colour scheme of your furniture or according to your personality. Just take a small personality test and find out the shade that suits you best. You can also use the online room visualiser to check out how different shades from the Nerolac colour palette would look on the interiors of different rooms, as well as find out the total cost of painting.

Buying your building blocks

If remodelling your home is a 'do-it-yourself' project you'll end up having to buy a lot of material yourself. To begin with, you'll need to have an idea of what's required. If you don't know cement from plaster, Lafarge has a guide that will tell you how to choose the best materials, whether it's cement, stone chips or water. The site also has a directory of dealers from whom you can buy building material.

If you're looking for a complete directory of home remodelling material then www.floor2roof.com is where you should head. It has an exhaustive range of almost every kind of building or home remodelling material—floorings, carpets, ceilings, roofing materials, wall finishes and furniture.

You can search for materials by category such as floors and roofs. Or if you're not quite sure, just select the room you want to remodel and you'll get a complete list of whatever materials you need to buy, whether it's doors, windows, furniture or lighting. View pictures of different finishes or products along with information on the product, the brand and the manufacturer or check out the price and add it to your wish list. You can also compare the features of the products added to your wish list if you aren't able to decide between the right kinds of windows for your home. Floor2roof has a directory of almost 20,000 outlets in every city and the products and building materials they deal in.

Hdfcrealty.com has an online catalogue of everything from antiques to drapes and furnishings, kitchen accessories, landscape equipment, plumbing equipment and where to locate it in a city. Dreamghar also has an online product finder with information on air-conditioners, glass works, tiles, natural stones and the city and store where you can locate it.

Find an architect online

Once you have all your planning in place, the next step is to find a professional who can trans-



Choose from home plans at Lafarge-India.com

late your dream home into reality. Locating a good architect for your bungalow or finding a plumber or mason isn't as easy as it seems. You would first look through classifieds in the newspaper or follow recommendations from neighbours, friends and relatives.

Find home improvement professionals such as architects, civil engineers, interior decorators and Vaastu consultants online from several Indian cities at Lafarge-India.com and Floor2roof.com.

Hdfcrealty.com has a vast list of professionals, which apart from interior decorators and architects, also include service providers such as air-conditioning dealers, carpenters, dealers in alternative energy like solar heaters, and fencing and fire protection engineers.

The final touches

There are a few limitations as Indian sites on remodelling just offer you basic help and advice to plan and budget your home remodelling efforts and locating professionals to get the job done. Nevertheless, the Net can be a valuable tool to help you plan your home remodelling and stay in control of your time and budget.

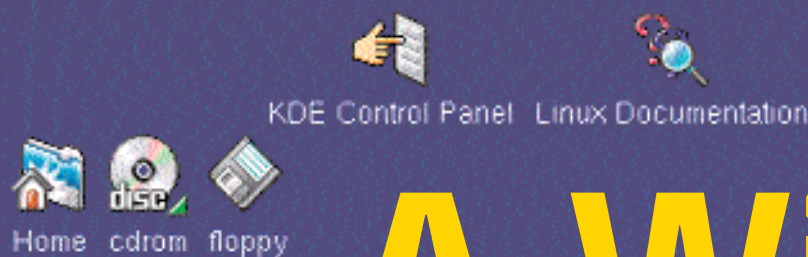
So the next time you're planning to remodel your home, take the help of your mouse and computer and you can assure your interior decorator a run for his money!

<http://www.indianinteriordesigns.com>
Check out the design gallery and directory of interior decorators

www remodelonline.com
This is where you should head for if you are looking for great remodelling ideas

www.diy.net
This site has a lot of useful information for 'do-it yourself' projects at home

www.buildingsteps.com
A portal for building professionals



A Window

Did you think Linux could never be easy to use? Just wait till you have a look at the KDE Desktop. It might make you give up Windows after all!

ANIL PATRICK R.

Does even the thought of using Linux give you the shakes? Do you have visions of caffeinated geeks typing furiously on a command line controlled OS? Gone are the days when Linux was the preserve of geeks. Nowadays there are many user friendly graphical interfaces for Linux. In fact, they are so easy to use that at times you tend to think of it as simpler than Windows.

KDE (K Desktop Environment) is one such graphical desktop environment, which is very easy to use. The latest version is KDE 2.2.1. It is highly user friendly and ought to make most Windows users feel at home (see *Sidebar: What's KDE 2.2.1 all about?*).



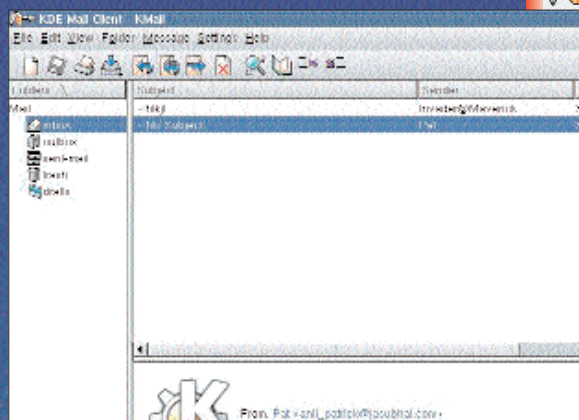
KONQUEROR

File managers just got more horses under their hood with KDE's Konqueror. This powerful file manager is also a Web browser—a very good one at that. It also has the capability to act as a viewer for previewing applications.



APPLICATION STARTER

Switching from Windows to Linux? KDE has an Application Starter menu which is better than the Start button in many ways. Although a bit too big, it's easy to find what you want in KDE's Application Starter.



KMAIL

KMail is a good e-mail client that comes standard with KDE. Easy to use and configure, KMail has a host of features which will make it difficult for you to live without it.

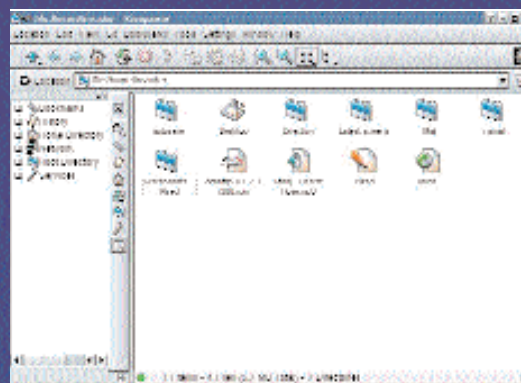


to Linux



CONTROL CENTRE

The Control Centre is similar to the Control Panel in Windows. You can configure almost everything on your PC from here. Why take the long route through the Application Starter to the Control Centre when you can access it from the desktop itself?



HOME DIRECTORY

Have a look at all that you have in your Home Directory. You can use and manage files from here.



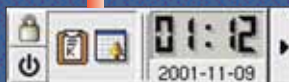
VIRTUAL DESKTOPS AND APPLICATIONS

Switch between virtual desktops from here. The default setting is four virtual desktops, but you have the option of up to 16 virtual desktops. You can also see all the running applications and switch between them from here.



SYSTEM TRAY

Here you'll see an organiser, clipboard management tool, a clock, all the applications running at that time, and the logout and system lock icons. KDE Desktop has gone a long way indeed to make user friendliness a part of the interface.



SHELL TERMINAL EMULATOR

Want more power from your Linux box? Command line freaks will love the shell terminal emulator window accessible at a click. Master the control of your OS from here.



What's KDE 2.2.1 all about?

Part of a project started in 1996 to get over the shortcomings in the X11 desktop, KDE presents a user environment which is comparable to the Windows user interface. Users get almost all of the Windows features such as drag-and-drop functionality, right-click context sensitive menus, keyboard shortcuts, advanced file management features, etc. In addition, KDE has features not available in Windows such as network and development tools.

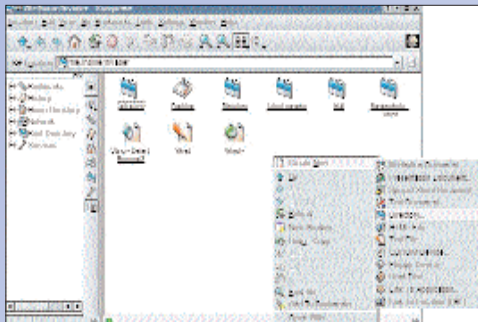
KDE 2.2.1, the latest KDE version, was released in September this year. This came just one month after the launch of KDE 2.2. Undoubtedly, the competition from other Linux desktop environments such as Gnome had a positive effect in bringing about such a fast launch. It comes in 42 languages with the core KDE libraries and desktop environment.

Major highlights of the KDE bandwagon are Konqueror and the KOffice suite. Konqueror is an advanced file manager for KDE which offers a lot of other functionalities like acting as a viewing application or an HTML 4.0 compliant Web browser with support for Java applets, JavaScript and CSS1, and partial support for CSS2. Netscape plug ins like Flash and RealVideo also run on Konqueror.

The KOffice suite has a word processor (KWord), spreadsheet (KSpread), presentation application (KPresenter), flowcharting application (Kivio), drawing application (Kontour), image editor (Krayon), business report generator (Kugar), and a graph and chart drawing tool (KChart).

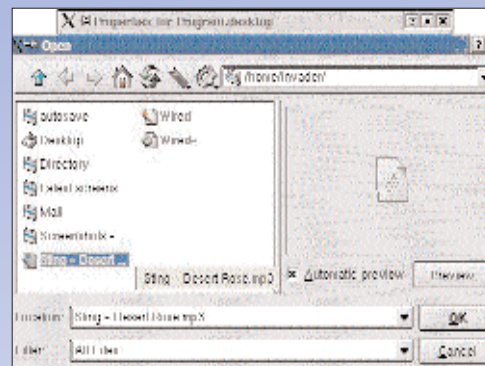
Chalking out territory

Now that we've got KDE in place, its time we explored it a bit. The best tool for this is to use Konqueror, KDE's powerful multipurpose built-in file explorer. Click on the Home Directory icon on the task bar and Konqueror will show the contents of your home directory. This is the place where most of your files will be saved. You can also use it to go to other places on the hard disk.



Right-click in the Home Directory and use the menu for creating new directories

Creating new files and directories in your home directory can be done easily. Just right-click in the directory where you want to create the new file or directory. This brings up the menu. Go to Create New > Directory and click on it to create the new directory. Give it a name and click OK. Your new directory will be created. Files can also be created in the same manner.



Use the Browse button to locate the files or applications for which you want to create shortcuts

Taking it easy

Want to put some new short cuts on your desktop? First get the jargon right. In KDE, shortcuts are called links.

To create a new link simply right-click on the desktop and go to Create New > Link to application. Clicking on this brings up the Properties for Program.desktop box. Give the name of the link. Now click on the Execute tab in the box. Enter the location of the file or application in the Command box if you know the path, else use the Browse button to locate the file. Click on OK and the new link is ready.

A bit of cosmetic surgery

Who doesn't want to give a personal feel to their desktop? KDE provides us with a whole range of options in the cosmetic department.

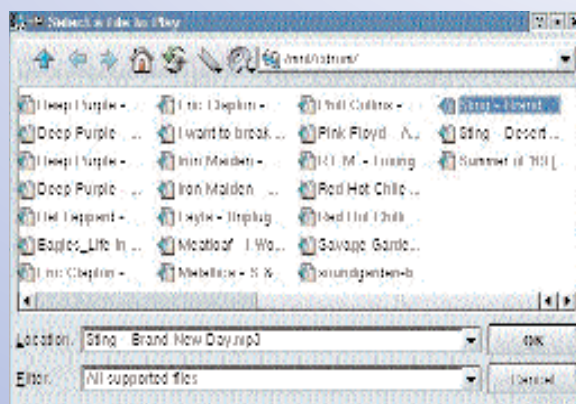
Grooving with KDE Media Player

What's life without music and movies? KDE Media Player is a companion which will help you out in this. It can play both audio and video files. The interface is somewhat basic but it gets the job done.

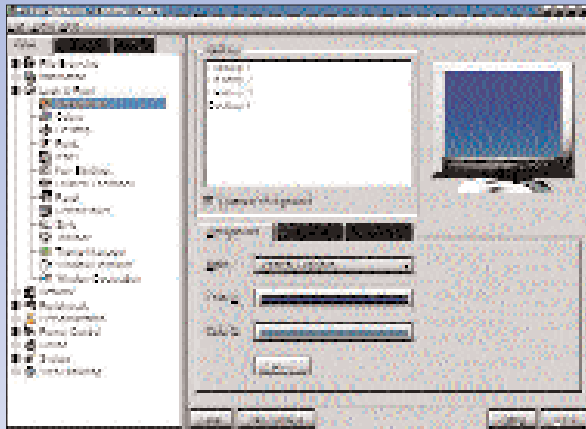
To start the KDE Media Player go to Multimedia > KDE Media Player in the Application Starter. Start KDE Media Player by clicking on it. Now go to File > Open to select the file you want to play. Select the file you want to open by single-clicking on it. Selecting OK will play the file.

Playing files from the CD-ROM is a bit more complicated. For this you have to go to the root directory and then to the mnt directory. Now you can view the CD-ROM contents by clicking on the cdrom icon. Select the file you want to open and click OK to open the file.

Multiple selection of files is not possible, which is a bit of a problem when playing music



files, as you have to play them one by one. But, for video files this won't be that much of a problem. It's better to use a player like the XMMS Media Player for playing music files, especially if you are a Winamp addict. XMMS comes as a standard with most Linux flavours like Red Hat and others.



You can give your desktop a personal touch from the KDE Control Center

Using KDE's Control Center we can change the look and feel to the one our eyes desire. To start Control Centre, go to Application Starter > Control Center.

Now click on the Look & Feel item on the left side bar. This will give you the specific option you want to modify.

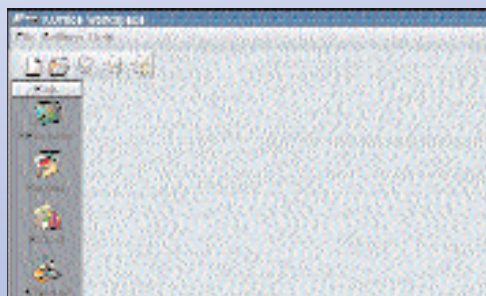
You can change the background colour, colour schemes, etc from the Background and Colors options. Everything connected to the desktop such as desktop properties, appearance and the number of virtual desktops you want to have can be set from the Desktop option.

Changing the look and feel of the panel can be done from the Panel option in Look & Feel. The Panel can also be accessed from Application Starter > Configure Panel if you are in a bit of a hurry.

If you want more flair, check out the Style, Theme Manager, Window Behavior and Window Decoration options as well. Tinkering with these will give you the dream desktop you always wanted.

Work hour

Now that we have the desired look, it's time to get some serious stuff done. For all the text lovers who miss Notepad, KDE has an advanced text editor called Kate, which can be

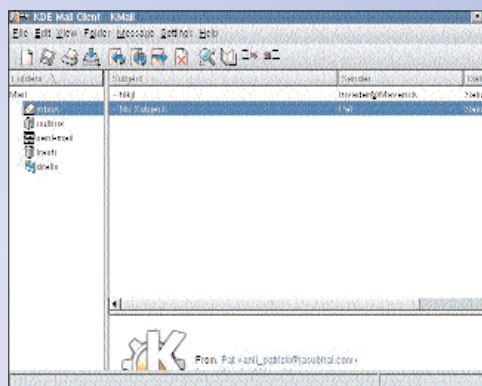


The KOffice Workspace allows you to have a KOffice application embedded within another KOffice application

accessed from Application Starter > Editors > Kate.

You think working in text editors suck? Check out KOffice, KDE's office suite. This office suite has a word processor (KWord), a spread sheet application (KSpread), KPresenter for presentations, etc. You can access KOffice from Application Starter > Office. You can start with one application at a time in KOffice using the individual options in the Office menu.

KOffice has an attractive feature called KParts object model. These are components that allow you to plug in a component made in one KOffice application into another KOffice application. For example, let's say that you



KMail is easy to set up and use, especially for Outlook addicts

want to insert a drawing made in Kontour into a file made in KWord, you can do this using KParts. To do this, you will have start the KOffice Workspace from Application Starter > Office > KOffice Workspace.

KMail is the mail client which comes as standard with KDE. This client is easy to configure and simple to use. Configuring KMail would be a cinch, especially if you've managed to configure Outlook Express before.

Those were the basics of getting KDE to work for you. A word of caution though: although the basic memory required for running the KDE desktop is 64 MB of RAM, it tended to drag a bit on a P-III 500 MHz PC. The performance was somewhat nearer that of Windows 2000 when we increased the RAM to 128 MB, although slightly slower than 2000. But the look and feel is worth having it. Our design team fell head over heels in love with the KDE look.

There you are! Pack your bags and go out with your KDE desktop on new Linux adventures. Linux has become user friendly after all! KDE is one partner who doesn't give up on you. Are you ready?

Adding New Users with KUser

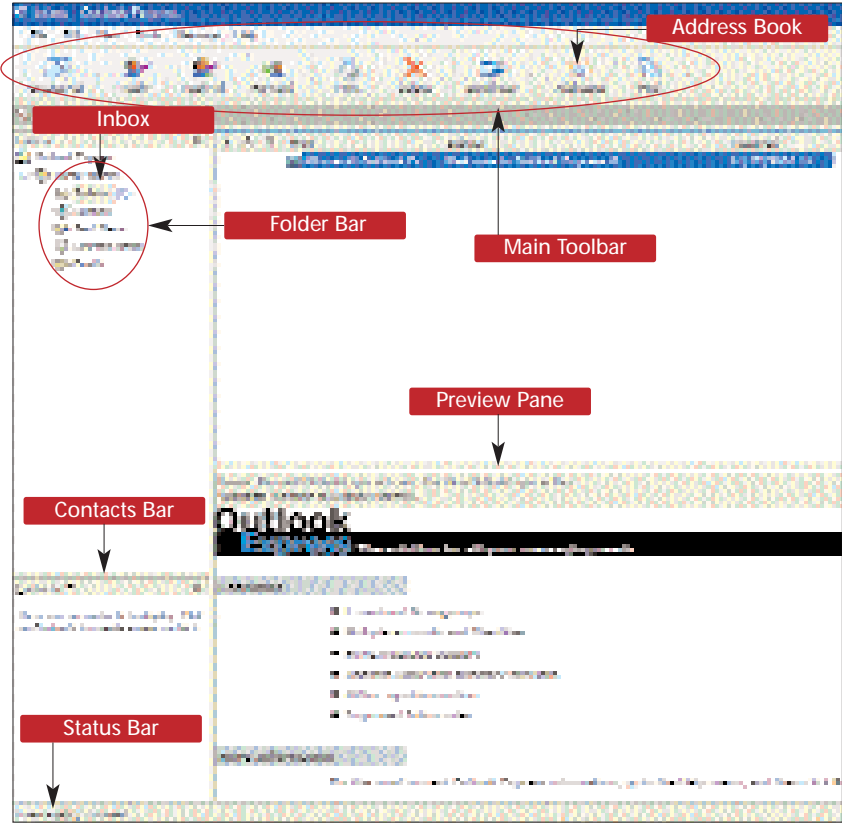
KDE has made adding new users as simple as pie with the KUser tool. This tool allows you to use simple graphical interfaces to add new users without the use of command lines.

To start KUser, click on Application Starter. Now go to System > User Manager. This brings up the Run as root dialog box asking you to login as root. Enter the root password and you get the KDE User Manager—KUser dialog box. To add a new user account you can either click on the Add icon or use User > Add from the menu. Give the name of the account you want to set up. Clicking on OK pops the User Properties dialog box.

It is easy to configure the account using User properties. The User Info tab allows you to set up the user details. The Password Management tab allows you to set up details such as expiry and date of expiry of password. You can specify the particular group that the user belongs to with the Groups tab. Let's say that you are setting up an account called Test. The primary group that Test will belong to is a group with the name Test. You can add this account to as many other groups as required by checking the group you wish Test to be added to.

If you want to modify the properties of a user later on, you can do it with the Edit buttons available in KUser or through User > Edit or after selecting the account. Deleting an account or group can be done using the Del buttons or with User > Delete and Group > Delete. Be sure to save the latest account settings before you exit KUser.

10 Tricks to mastering your mailbox



Outlook Express consists of many elements that indicate aspects of your e-mail such as the messages, your address book, status, etc

Get Outlook Explorer 6 to work for you

MARCO D'SOUZA

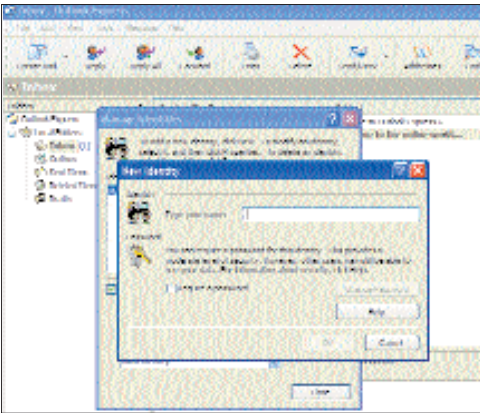
With a plethora of clients and tools out there that help you create, sort, filter, manage and archive your mail, there's plenty more to sending an e-mail than just hitting the Send button. Today's e-mail clients offer many configuration options and settings—from formatting, to managing multiple identities and mailboxes, to automatic spelling and grammar-checking—that can help bring sanity into the daily grind of working with your e-mail.

So let's look behind the large message view pane of Outlook Express 6 to unearth the wealth of configuration settings that can help you get a whole lot of work done, faster.

TRICK 1. One e-mail client, several users

You can create multiple identities within the same e-mail client. This is a feature that lets more than one person use a single mail client for sending and receiving their mail, while still protecting

their privacy and individual settings. For example, if your mother needs to send e-mail, she can switch the identity to her own and gain access to her mail and addresses in the same mail client. Later, your father can change the identity over to his own before sending his mail and this will not affect any of the mail settings of the other users.



You can also add a password to a new identity

You can create a new identity by clicking on File > Identities > Add New Identity from the main Outlook Express window. Enter the name and (optionally) the password of the new user. Once the new identity has been created, you can switch to the new user simply by choosing File > Switch Identity.

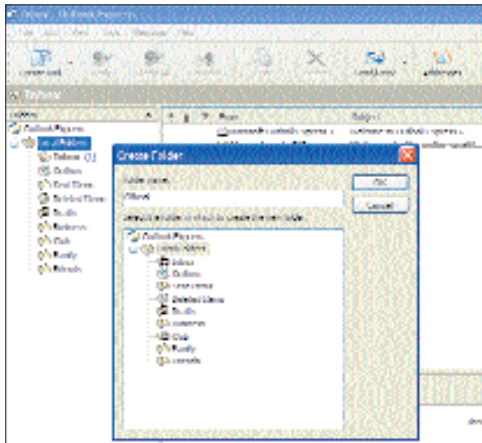
After creating a new identity, you can configure your mail server settings (see box 'Setting up Outlook Express 6').

TRICK 2. Get organised

From time to time you need to organise your messages. If left undone, you will soon have hundreds of messages in your mail client and locating a specific one would become a problem.

Outlook Express 6 offers many tools that help you bring order to your e-mail messages.

Using folders: You can organise your mail into specific folders. For instance, you can group all messages from your family, friends, business associates, clubs, etc in their specific folder. This would greatly simplify access to these mail later. You can create a folder simply by right-clicking on Local Folders in the Folder view of the main Outlook Express window and choosing Create Folder. Enter the folder name here and you will have a new folder in addition to the Inbox, Outbox and the other folders in the left pane.



Create folders to organise your e-mail

You can now begin to organise your mail by manually dragging and dropping the mail you receive, from the Inbox to the pertinent folder.

However, a smarter and more efficient way to do this is by using Message Rules. Rules will let you specify a set of actions that can be run on your e-mail as they arrive in your mailbox. For example, you could set a rule so that all mail from your mother automatically goes to a folder called 'Family' or you could even create a rule that deletes all messages that are sent by your boss!

To create rules for your e-mail, click on Tools > Message rules > Mail... from the main Outlook Express window. The upper pane of the window that opens lets you set the condition for your rule (by whom is it addressed, particular words in the subject line, etc), while the lower pane lets you set the action to be run (move it to a particular folder, delete it, forward it, etc). After you've set up one rule, you can name it in the box below. You can set up as many rules as you want for different tasks to be run.

Delivering e-mail to separate inboxes: If you need to create a new folder for a new mail account, click Folder > New Folder on the File menu, and name it appropriately.

Go to Inbox Assistant in the Tools menu, and click the Add button. In the Accounts option, select the name of the account whose mail you want to deliver to a different inbox.

Click the Move To option, and then click the Folder button to specify the name of the folder where you want the mail delivered.

Save on that space: If your messages are taking up a lot of space on your hard disk, but you don't want to delete them, don't despair. You can compact your e-mail messages in Outlook Express. Open your Inbox and go to Tools > Options. Click on the Advanced tab and select Clean Up Now. In the same dialog box, you can set instructions for your PC to compact files when there is a certain per cent of wasted space; 20 per cent is the default value: increase this value to compact at an earlier time.

TRICK 3. Search smart

You can search for mail within a folder by simply right-clicking on the folder and choosing 'Find...'. There, you can search for a particular message by sender, by keywords in the message, etc. You can also locate messages by sorting them within the folder. Click on the folder in the

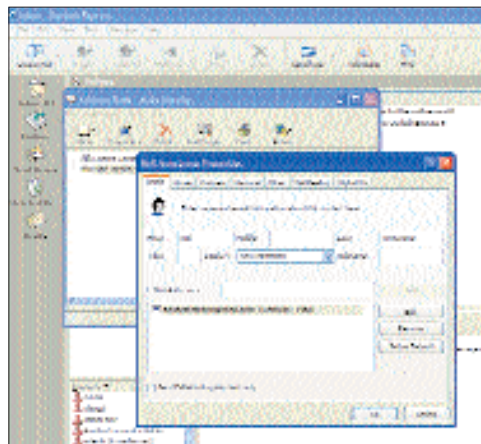


Sorting quickly by clicking on the header

folder pane. This will open a list of messages in that folder on the right. Here, you can sort messages by simply clicking on the heading at the top of that view (From, Subject, Received). By clicking on a heading, you will see an arrow that either points upwards or downwards. Your messages will now be sorted in ascending or descending order according to that heading.

TRICK 4. Manage your address book

Adding contacts: Click on the Addresses icon on the main Outlook Express window. This will open the Address Book utility. From here, you can search for, modify or create new addresses. To create a new address, click on the New icon and then choose New Contact. In the next window, enter the details of the new contacts in the fields provided. After entering the e-mail address, click on the Add button and the mail address will appear in the box below. You can also add more than one mail address per person. When you're through, click on OK to complete the process. This can be retrieved when you write a new mail message.

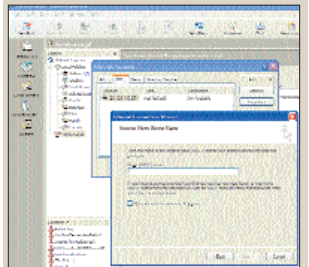


Creating a new contact

Creating groups of contacts: If you often send mail to the same group of people, there is an easier way of doing it rather than physically adding each name to the 'To:' field. Simply create groups

News for you

You can use Outlook Express to access newsgroups where you can specify a new account to access a range of different information on a variety of topics. Setting up a newsgroup is similar to setting up a new mail account, except that you need to add an Internet News server in the box indi-



Configuring the NNTP address

cated. You will need to know the NNTP address of the news server to which you want to subscribe to. After feeding in the relevant details, you simply need to synchronise with your news server each time and you will receive feeds of news regularly.

What Kind of E-mail is There?

There are primarily two types of e-mail systems in use: POP mail and Web mail. In the former, mail is stored on a server that runs a special mail-handling protocol called Post Office Protocol (POP); its most recent version is POP3. This lets the server receive mail and hold on to it until it is accessed by your e-mail client. POP can basically be thought of as a 'store and forward' system for your e-mail. Internet service providers (ISPs) such as VSNL, RoltaNet, Satyam, etc, provide this service, where you can access e-mail using this system if you are registered with them.

The second type of e-mail system used is Web mail. Here, you do not need an e-mail client—you can access your e-mail directly on the Internet by logging onto the Web site that runs this service. A popular example of this would be Yahoo! Mail or Hotmail. These Web sites are free e-mail service providers where, once you register with them, you can access your mail from anywhere in the world—all you need is access to the Internet, be it through a computer, an Internet Kiosk, a set-top box or even a handheld device.

of contacts (Friends, Family, etc). Do this by following the same steps above, but instead of New, choose New Group. This will open a box where you can choose the contacts you need to add to a particular group. After you're through with adding contacts, give the group a name and click on OK. From now on, you can send a mail to all the people in the group in one shot by simply typing out the group name in the 'To:' field.

Deleting entries: If you need to delete entries from your Address Book, simply open the Address Book, select the contact you need to remove and hit [Delete]. After confirming the deletion, the contact will be permanently removed from your Address Book.

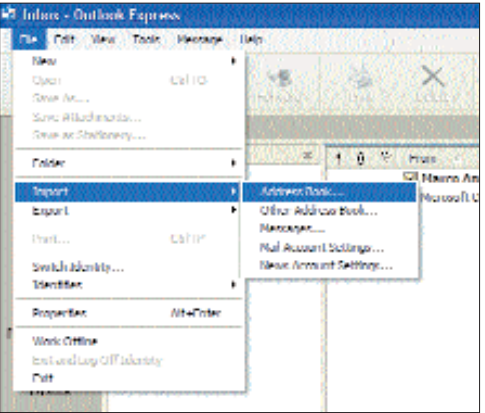
TRICK 5. Dealing with Spam

Spam is the term given to unwanted mail that we receive in the form of newsletters, offers, advertisements, press releases, etc.

The best way to battle spam is to unsubscribe from the mail that you're continually receiving and if that doesn't work you should delete them. The most effective and automated way to do this is to use the Message Rules feature of Outlook Express as described earlier. Simply set up a rule that deletes all mail that arrives from a particular address, or with certain words in the subject line or the message body.

TRICK 6. Importing and Exporting messages and settings

Once your mail client is up and running, you might want to back up your e-mail or addresses or you might wish to port your settings over to another e-mail client or move it to a different computer.



You can import a variety of OE components

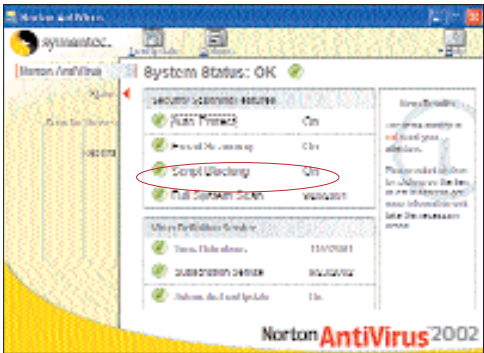
Outlook Express has an Import/Export feature that helps you do just this. If you need to import settings, click on File > Import from the main window. Here, you will be presented with a list of tasks that you can do (import another address book or mail message or mail settings). Choose the correct source from where the

import needs to take place in each of these cases and follow the steps.

Similarly, you can transfer (export) messages or your address book to a different computer or for backup. Click on File > Export from the main window and choose to either export your address book or mail messages.

TRICK 7. Keeping your mailbox virus-free

E-mail messages are one of the prime means through which viruses infect a system. Many anti-virus programs from companies such as Norton and McAfee feature specific plugins that monitor the e-mail sent and received and verify that they are virus-free. After loading these programs, a specific icon gets created through which you can change settings as to what files are scanned during the course of your work.



Protection for your e-mail

As a rule of thumb, do not open any attachments that are sent to you, unless you are certain that they are legitimate and from a trusted source. This especially holds true for executable (.EXE, .COM) and batch files (.BAT) files. If you are uncertain, delete the e-mail immediately and notify the person who sent it.

TRICK 8. Ready-at-hand tools

You can customise the Outlook Express toolbar so that it shows the commands you use often, such as Print or Find. Right-click the toolbar, and then click Buttons. Select the buttons you want to add on the left, and then click Add. If you want to remove a button, select it on the right, and then click Remove.

You can even rearrange the toolbar buttons by selecting one on the right, and then clicking the Move Up or Move Down button.

TRICK 9. Working offline

Reading newsgroups offline: You don't have to stay connected to the Net while you read all the messages contained in the newsgroups you subscribe to. Save up on the phone bill by downloading the newsgroup messages and then read them offline. You can choose to download only specific messages by first downloading only the

Setting up Outlook Express 6

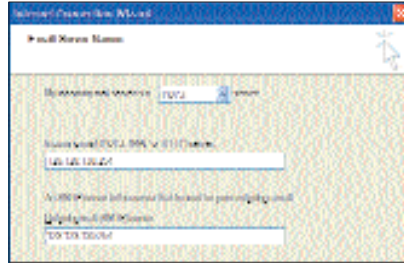
Before you begin setting up your e-mail client, make sure that you have

- Your Username
- Your Password
- Your e-mail server's POP3 address
- Your e-mail server's SMTP address

This information will be given to you when you register for an e-mail account. When you first launch Outlook Express 6, you will be prompted to enter this information. After doing so, an e-mail account will be created for you.

Follow the instructions on screen and you can't go wrong. You will be prompted to enter a name you're going to be using for the new mail account and the e-mail address you're going to be using. Now comes the most important part: entering the POP3 and SMTP addresses of your mail server.

Finally, you will need to enter the User-



Enter your POP3 and SMTP settings

name and the Password that you were given at the time of registering for the service.

Using Outlook Express to access your Web mail

You can use Outlook Express to access your Web mail instead of having to log on to the Web site. Do this by setting up a new mail account in Outlook Express.

However, when it comes to entering the relevant information in the POP3 and SMTP fields while setting up the account, you would need to enter the information as follows:

For Yahoo! Mail:

POP3: pop.mail.yahoo.com

SMTP: smtp.mail.yahoo.com

For Hotmail:

You would have to access it using HTTP instead of POP3. Here, you will have to use the following address in the 'My HTTP mail service provider is' configuration filed: <http://services.msn.com/svcs/hotmail/http-mail.asp>

The username and password will have to be the same as the one you use to access these accounts otherwise.

Having done this, you will be able to access these accounts as you would access normal mail accounts.

message headers and then choosing which messages you want to download. To read newsgroups offline, select a newsgroup from the folder list in Outlook Express. Go to Properties in the File menu, and click on the Download tab.

Select the 'When downloading this newsgroup retrieve' check box, and click the option you want.

To download messages, click Download All in the Tools menu. To download specific messages, click the message header that looks interesting. Click Mark for Retrieval in the Tools menu, and then click Mark Message. Repeat for other messages. Finally, in the Tools menu, click Download All.

Drafts folder: You can create a new message offline and save it in the Drafts folder for later modifications and/or a delayed delivery. To save a message in the Drafts folder, select Save from the File menu. Selecting Send Later will put the message in your Outbox to be sent when you next get online.

TRICK 10. Access messages from separate PCs

If you are one of those who live life in the fast lane and need to be able to access mail from work as well as home, you can set Outlook Express to store messages on the e-mail server. This will let you download messages on to your office PC as well as your home PC, allowing you to leave a backup of your mail on the Web mail server. However, you should remember to periodically delete the mail from the server or your mailbox will eventually fill up. Alternately, you could also set a time limit, after which the mail from the

server would be automatically deleted. Open the Read Mail icon. Go to Accounts > Properties in the Tools menu. In the Advanced tab, select the box named 'Leave a Copy of Messages on Server'.

1/4 ad
will
come

Exchanging words

Document editing tools: getting your documents to look the way you want them on your handheld has never been easier

MARCO D'SOUZA

When it comes to the utility of a handheld device, its power lies not in its ability to store numerous contacts, phone numbers and schedules but in the fact that it can be used to help you get work done while you're on the move. At the office and home, the primary use of most desktop PCs is for creating documents, which would include files created from applications such as word processors, spreadsheet files and presentations.

While the handheld computers available today have the processing power to allow you to edit documents on the move, the main hindrance here has been that of entering large amounts of text into your handheld. While the handwriting recognition capabilities of these devices has increased exponentially in power and accuracy, the form factor of the device makes it unsuitable for entering large amounts of data. However, with the advent of portable keyboards that can be connected to your handheld, this problem has been overcome. The limitation with most handheld devices is the fact that the display and memory on the devices cannot handle very large amounts of document data, especially when special formatting or multiple fonts are used. For example, in older Palm devices, the screen resolution isn't high enough to display special types of fonts and

graphics. Also, the integrated application for text editing on your Palm, for example, is the Memo-Pad. While this Spartan tool is easy to use, there are glaring disadvantages in that the maximum size of each memo is just 4 KB. Also, this editor uses the standard ASCII character set and, therefore, no special fonts and formatting options are available. To overcome some of these limitations, the DOC format was initiated for the Palm, allowing for much larger documents. However, the formatting capabilities were still very limited.

Hence, to view the documents created on your desktop on your handheld, they would need to be ported into a special format that can be recognised by the handheld. That's where the text editing and document readers for handhelds come into play. These applications read your source documents (be it Excel Spreadsheets, Word files or even PowerPoint presentations) and convert them into a format that can be displayed on your handheld while retaining as much of the formatting as possible. There are also programs such as WordSmith that let you maintain the fonts used in your original files and view them on the handheld. This is also a very capable word processing application for your Palm. It lets you create and edit documents with fonts and formatting where the size is limited only by the amount of free memory on your device. After working on the document, the formatted information and even the fonts are retained so that when you transfer them back to your PC, the document maintains this information.

There are numerous other applications that let handheld users transfer files from the desktop to the Palm, which can later be edited and worked on while on the road.

With these applications, you

Imaging: Solomon Lewis

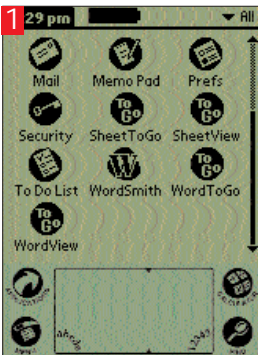
can easily make those last minute changes to your presentation or report while you're en route to your office.

Documents on-the-go

Documents To Go is one of the many tools that can be used for transferring and working with familiar Office formats (Word, Excel and PowerPoint) on your handheld, and then synchronise them with your PC. Here, porting files from your desktop to your handheld is as simple as dragging-and-dropping; this lets you transfer reports and presentations in the process of synchronising your handheld with your computer.

Step 1: Installing the software onto your desktop

Before you begin transferring files to your handheld, you will need to install the desktop component of the document editing software. After



Applications installed on the Palm

downloading the appropriate software, run the setup. During the installation process, the files that need to be transferred to your Palm also get copied to your Palm desktop client application. These applications are saved as .prc files on your computer.

When you synchronise your Palm, the applications will get copied onto your handheld and you will be able to see them the next time you switch it on.

Step 2: Choosing the documents that you want to transfer

In most document editing applications for handhelds, you can drag and drop the files you want to transfer directly into the applications and they

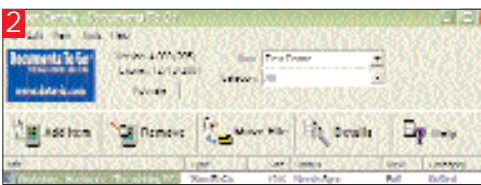
<http://www.dataviz.com>
Home of the 'Documents To Go' application

www.bluenomad.com
Find the WordSmith document editing application for Palm handhelds here

www.synsolutions.com/software/slideshowcommander
Take control of your PowerPoint presentations—right from your Palm

<http://visionary2000.com/qed>
A word processor for the Palm

www.landware.com/takenote/index.html
A text editor for the Palm.



get appropriately converted. During this process, the application converts your document to a format that can be interpreted and read by your handheld. It is reformatted to fit your Palm screen and the fonts used are also converted to a format that can be displayed on your handheld. This done, the file is ready for transfer to your handheld.

Step 3: Transferring applications when you HotSync

Transferring files to your handheld is as simple as docking the handheld and synchronising it. In the case of a Palm handheld, you will simply need to insert your Palm into the cradle and hit the HotSync button. Other handheld devices may have to be connected to the computer using a cable that links the device to one of the ports. This will transfer your document files over to your handheld and the status will be shown as a progress indicator.

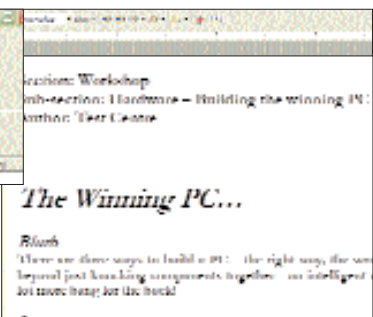
Step 4: Working with applications

Launch the 'To Go' documents application on your Palm by tapping on the icon and you will see a list of the documents that have been transferred onto your Palm. Simply tap on the appropriate filename and get set to read and edit the document in your Palm.

You can work on these documents as you would on your desktop. You can use the standard editing and text entering methods for your Palm (if you have a portable keyboard for your Palm, you'll be able to work a lot faster). You can also use the special formatting tools that the application offers you, including tools that let you change formatting, make text bold, italicise and even change the fonts. After you've finished, you can save it on your handheld and keep it ready for synchronising back with your desktop computer. You can choose to overwrite the original document on your desktop.

While we have taken the example of a Word document, these applications are also capable of working with other files such as Excel spreadsheets and PowerPoint presentations.

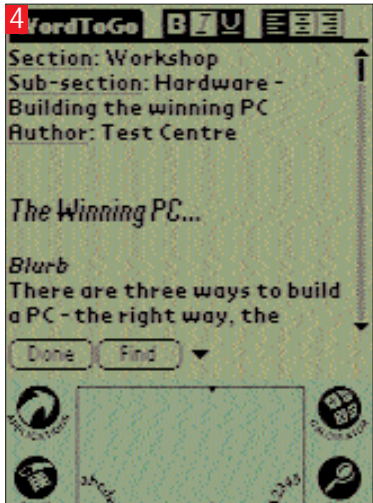
With these document editing software for your handheld, you can now extend your desktop to your car, train or any place on the road and keep your critical documents close at hand at all times. And best of all, you won't have to settle for those drab Courier fonts.



The source document (right) selected for transferring in the application (left)



Transferring the documents to the Palm by synchronising



Voila! The original document is now transferred to the Palm



Troubleshooting

PC fatigue? Plagued by viruses? Troubled by slow system response? Here's the end to your PC woes

Hardware

+ Upgrading RAM

I have an assembled Celeron 366 MHz system with 32 MB SDRAM and Windows 98 SE. My computer is working very slowly, so I have decided to increase the RAM size. What are the technical specifications I have to take note of before buying the RAM? How much RAM does my motherboard support? I don't know which company manufactures this motherboard, but with the help of a BIOS string (BIOS ID - 09/03/1999-i810-ITE8712-6A69MSMDC-00) I found that my motherboard uses the Intel i810e chipset.

Anantha Narayanan. N

Via e-mail

R As you have a Celeron processor, your system is running at 66 MHz FSB (Front Side Bus). As most new RAM modules that are available in the market today are specified at 133 MHz or higher and are also backward compatible, you need not worry whether the RAM you purchase will be compatible with your machine or not.

With regards to your second query, the Intel 810e chipset motherboard supports a maximum of 512 MB PC-133 RAM.

Windows

+ Of restore folders

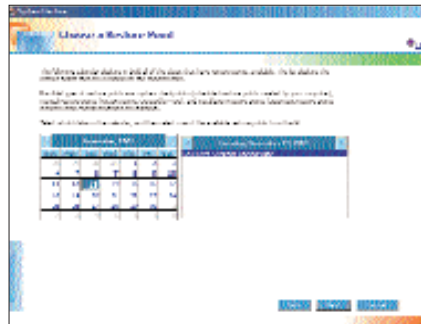
I have a P-III machine with 128 MB RAM, a 20 GB hard disk drive and Windows Me as the operating system.

1. Whenever I create a restore point in System Restore, the space in the _restore folder (C:_restore) increases abnormally and its size increases to nearly 500 MB. After some time all my previous restore points are lost. The space allocated for System Restore is maximum. Once I tried to restore my computer to an earlier time and it said restoration was unsuccessful, and the size of the _restore folder increased to 1 GB. After that I had to disable the system restore to get back the original size of the folder, but all my earlier restore points were lost. Please send me an appropriate solution for this.

P.S: The size of the _restore folder keeps fluctuating in the range of 500 MB to 1 GB.

Hemesh Kumar Soni

Via e-mail



The System Restore function in Win Me

R The System Restore facility provided in Windows Me and Windows XP does take up a lot of space, hence this should not worry you. Moreover, System Restore also wipes out the 'old restore' points it has created when it exceeds the maximum available space allocated to it. If you think that too much of your hard disk space is being occupied, you can disable System Restore by going to System Properties.

Windows

+ A FAT problem

I have a Pentium 200 MMX processor, 32 MB RAM and Windows Me installed in my PC. How can I convert my file system from FAT16 to FAT32 without formatting the hard disk?

Saurabh

Via e-mail

R To convert your drive to the FAT32 file system, go to Control Panel > Add/Remove programs > Windows Startup disk. Insert a floppy and create a bootable Startup disk. Reboot your computer using this Startup disk.

In case you are unable to boot the computer, check whether the boot sequence on the computer is configured properly. Restart your computer and in the BIOS,

select A: as the first option for the device you would like to boot from.

In the Startup disk menu options, select the option to start your computer without CD-ROM support. Type `cvt drive:` at the command prompt. Here 'drive' is the drive that you want to convert to the FAT32 file system. The Cvt.exe file is actually located in the C:\Windows\Command folder and Startup disk automatically sets this as the path for the Cvt.exe file. If Windows is not installed in this folder and you receive a bad command or file name error message, type `drive:\windows_folder\command\ cvt.exe drive2` at a command prompt, where 'drive' is the drive in which Windows is installed, 'windows_folder' is the Windows folder and 'drive2' is the drive that you want to convert.

Press [Enter] to finish conversion to FAT32. Remove the Startup disk from your floppy drive and restart your computer when prompted.

Internet & Communications

+ A lethargic mouse

I'm using a PC with a P-III 733 MHz processor and 192 MB RAM, running on Windows 98 SE. It usually happens that initially my system is very pacy and things run fast but when I am on the Net for more than an hour, the right mouse button stops functioning in Internet Explorer (Save Image as). It only resumes after I close a few IE windows. My mouse starts behaving very sluggishly and the system gets slower with the applications taking longer to open or close. It regains its speed only after I restart the system.

Najmul

Via e-mail

R Older versions of Internet Explorer are known to occupy memory without refreshing itself, hence you find that the machine becomes sluggish after some time. To overcome this, you should update your browser to the latest version, which can either be obtained from the Digit Mindware CD or can also be downloaded from the Microsoft site. If you still find no

improvement in speed, it is likely that your machine is infected with a virus. Install an anti-virus software with the latest updates and scan your system. This should solve your problem.

Windows

+ Stuck in the boot

Every time I boot, the process stops midway and I get an error message saying that C:\PROGRAM-1\NORTON-1\NAVAP.VXD and C:\PROGRAM-1\SYMANTEC\SYMEVNT.386 are missing. I suppose these are due to improper uninstallations. Is there any way other than installing and uninstalling the software to solve this problem?

Arvind

Via e-mail

R Yes, there is a solution to your problem. Boot to Windows and open the Registry Editor. Navigate to HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\VxD, locate the NAVAP and SYMEVNT keys and delete them. This will solve your problem. Be careful not to delete any other keys in this branch as improper editing of the registry can render Windows unusable.

Internet & Communications

+ Modem trouble

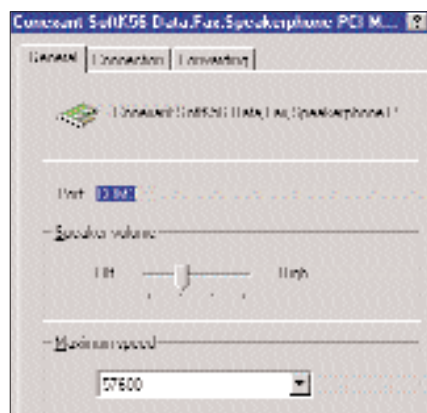
I have a system with a P-III 800 MHz processor, 256 MB PC133 SDRAM, a 56K internal modem and 20 GB hard disk drive, running Windows Me and IE 6.

When I connect to my dial-up Internet connection, my system works well for about 30 minutes but after that my modem stops responding until I open multiple sites in different windows. Whenever it stops responding I have to do this. I tried every thing, I formatted my HDD and loaded all the stuff again but the problem still persists.

Please give me a solution.

Sourabh R. Doshi

Via e-mail



Set the right modem speed

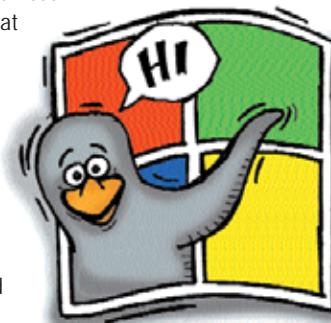
Linux

Across the partition

I have a P-III 500 MHz system with 256 MB RAM. I am running Windows 2000 Advanced Server and Red Hat Linux 7.1 on my machine. Windows 2000 is installed on NTFS file system and Linux on Ext2 file system on separate physical hard disk drives. Is it possible to view the files in the Ext2 file system from Windows 2000 or the NTFS file system from Red Hat Linux?

Om Prakash Yadav

Via e-mail



R Yes, it is very much possible to do both. Linux can map your physical NTFS non-encrypted partitions using the mount command. See 'man mount' for details. For reading an Ext2 file system on Win 9x and 2000, you will have to install Paragon Ext2FS Anywhere. This can be downloaded from www.partition-manager.com/n_ext2fs_main.htm.

R You will have to decrease your modem buffer size to minimum. Since you are using a 56K modem, make sure you use a slower DCE (Data Carrier Enabled) speed, no more than 57600. You can set this speed in Control Panel > Phone and Modem options > Modem properties.

Hardware

+ Bad timing

I have a P-II 450 MHz processor based system with an Intel se440bx-2 motherboard and 192 MB RAM. When I switch on my computer, I get an error message saying that something is wrong with the time. Each time I have to enter setup and set the correct time as it gets reset every time I turn off my computer. I changed the motherboard cell, but the problem persists.

Adarsh Raja

Via e-mail

R It seems that the battery of the motherboard is discharging fast. Try replacing it with a new battery. If the problem persists then something is wrong with your motherboard. It would be better to get your hardware vendor to run a thorough test on the motherboard.

Windows

+ Wild explorer

I am using a Celeron 360 machine with Windows 98 OS. Of late my system shows an error message whenever I try to open a file or run a program from Windows Explorer or from a folder on the desktop. The error message reads as: "cannot run unicode version of ATL.DLL on Windows 95. Please install the correct version."

R. Surendra Kumar

Via e-mail

The problem occurs because of an NT version of ATL.DLL in Windows\System on a 95/98-machine. ATL.DLL is installed by IE 5.x and also by other programs using Microsoft's Active Template Library (ATL), for example Office 2000. Normally, the setup procedure should detect the correct ATL.DLL version for your system. However, since you have a problem, first try searching through the original Office 2000 setup CDs for ATL.DLL. Check the correct ATL.DLL version by 'properties' (there must not be anything written about NT there; only for the NT version there is an explicit OS statement) and copy it to Windows\System. Make sure in advance that ATL.DLL is not used by any program while you try to replace it. After you have replaced this file, you shouldn't get this error again.

Internet & Communications

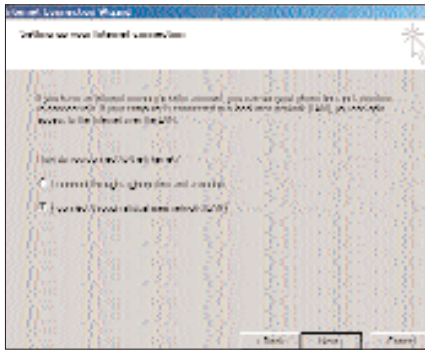
+ Share the Net

I have two PCs at home and I have recently set up a LAN with Windows 98. I now want to enable sharing Internet using the LAN, but am unable to configure it. Please guide me to set up the LAN using the WIN 98 proxy server to share the Internet using one connection.

Navin Chandra Gaur

Via e-mail

R To enable sharing of Internet, you will have to enable Internet Connection Sharing on one machine, which can be done by going to Accessories > Communication > Internet Connection Wizard, where you can set your Internet connection through LAN. Now turn the second machine to DHCP (Dynamic Host Configuration Protocol), which is an Internet protocol for automa-



The right way to connect to the Internet

ing the configuration of computers that use TCP/IP. You should now be able to share the Internet connection using one connection.

Hardware

+ Get connected

I have two computers, one a Celeron 600 and the other a Pentium 4. Can you suggest a way to connect them via modem without using the phone line? Both the computers have an internal modem.

Sandeep

Via e-mail

R You can use a null telephone cable to connect the two modems and use a shell emulation program such as HyperTerminal to make a call from the first machine and manually pick it up on the other one by passing a command, as there is no ring tone involved to make your other modem aware that somebody is trying to connect.

Hardware

+ Modem woes

My modem is installed on the COM4 and mouse on COM2 port. When I click on the modem icon in the task bar and go to the 'com ports' option, my mouse becomes inactive, but everything else works properly. I am forced to restart my PC using [Ctrl] + [Esc] and things work fine until I click on the modem icon. The Device Manager in my control panel shows that there are no conflicting device listings in the resources menu. My COM1 port is of 25 pins and I have a 25 to 9 pin converter on which, if I connect my mouse, there is no such problem. I've even tried installing the modem on different slots such as PCI-3 and PCI-4 but I get the same result.

I have tried installing Creative Infra Suite, but as soon as the Creative Infra icon appears in the task bar at start up, my mouse stops working. I have also tried interchanging the COM port cable on the motherboard, but it's the same story.

Viren Chavan

Via e-mail

R We would strongly advise you to remove your internal modem and check it on some other PC. If you have the same problem in the other PC, then obviously it is the modem that is faulty. However, if it works fine, and if you are using a mouse which fits only in a serial port, make sure it is installed on the COM2 port of your machine. We would recommend you to go in for a new PS/2 mouse, which will also save up on IRQs.

Hardware

+ Grappling with graphics

I have a P-4 1.5 GHz system with 256 MB of RDRAM. I have a Riva TNT2 graphics card, which I recently replaced with a similar card from a different manufacturer. After changing the card I got an error message: "emm386 not installed. Unable to set frame base page address. Press any key when ready." A little later, without pressing a key, the following message appears: "Expanded memory service not available. emm386 successfully installed. Total upper memory available 66k largest memory block 54k. Starting base page address d100hemm386 active." I have reinstalled everything including the OS, but all in vain. I am using Win 98 Second Edition after quick reformatting. I have also made changes in system.ini and start up, but that was also of no use.

Ashish Gaba

Via e-mail

R We would recommend that you first uninstall your previous graphics card drivers. In the Add/Remove option in the Control Panel, select the previous graphics card driver and uninstall it. Then reinstall the

newer drivers, which will be available on the manufacturer's Web site or on the diskette that came along with the graphics card.

If this does not work then format your machine and reinstall the operating system. However, if the error still occurs then it is very likely that your RAM module is faulty.

Windows

+ BIOS hazards

I recently tried to update my BIOS as it does not support a 40 GB hard disk drive. I obtained the update from the manufacturer's Web site. I used awdfash.exe (ver8.08) to flash the BIOS. Every time I chose to backup the old BIOS the computer just did nothing (i.e. no hard disk activity for the next 15 minutes). Then I tried to flash my BIOS without a backup. It gave me a warning: 'part no in BIOS and the file do not match'. I ignored the message and continued with flashing. Now after the so-called update, the computer won't boot, that is, I hear no beep at start up. The hard disk drive light keeps glowing and nothing happens. Also, the monitor light keeps blinking (indicating that it's idle). How do I go back to the previous BIOS? Can I remove the chip and reprogram it?

Pratik Soares

Via e-mail

R It seems you have not updated your BIOS in the right manner and as a result it is likely that you have damaged your BIOS by not heeding to the warning given by the flash program.

You can ask for a similar BIOS chip from your vendor by giving the right model name to your vendor.

Hardware

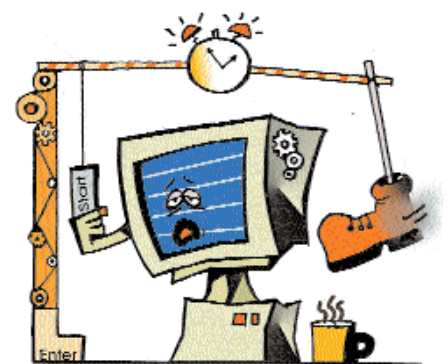
Hanging errors

I have a branded PC at my home. I am satisfied with the performance of the system. But occasionally, while booting, the system hangs and I am unable to do anything else. The entire screen fills up with lots of small horizontal white lines against the usual blue background of the bootup screen. I have to switch off the power supply to the PC and switch it on once again. I cannot even take a snapshot of the screen because the PC has not yet booted up and I can't start any program. How do I fix this problem?

Gunniboy

Via e-mail

R It seems your RAM module is faulty. Try changing the RAM and see if the



Illustrations: Farzana Cooper

problem still occurs. If the problem persists even after changing the RAM, then it is very likely that the RAM on your video card (VRAM) is faulty. You should try using a different video card. This should solve your problem.

As to reprogramming the chip, it can be done using EPROM programmer which is widely available in the market.

Windows

+ Cannot copy-paste

I am unable to copy and cut-paste files from one folder to another, nor can I transfer or copy my folders, unless I go to the MS-DOS mode. Is there a solution? I am using Windows 98.

Puneet Modani

Via e-mail

R Something seems to be locking the files while you are in Windows. Try copy-pasting files using the MS-DOS prompt in Windows. If it works fine here but still doesn't work in Windows, then you will have to re-install Windows. If the problem is still not rectified then check your system for viruses and Trojans.

Applications

+ No rescue

I have a system with 256 MB RAM, a P-III 500 MHz CPU, running on Windows 98. I have also installed Norton AntiVirus 2001.

My problem is that when I click to create a rescue disk in Norton AntiVirus 2001, I get an error message saying, "unable to load rescue.dll. This is most likely due to failed registration of the dll. Please re-register this file or re-install the product." How can I re-register the file, rescue.dll?

Arvinder Pal Singh

Via e-mail

R It seems you have not installed the software correctly. Try uninstalling and reinstalling the software. On reinstalling, the rescue.dll file will be registered in the registry and you will not receive this error.

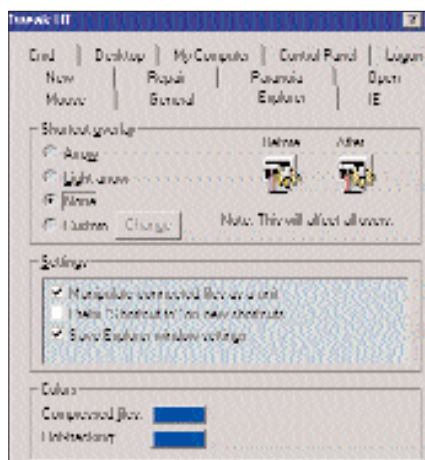
Applications

+ Disabled settings

I have a Celeron 445 MHz system with Windows 95 and IE 5.5. Recently I installed LSDistro, a lifestep shell to replace Explorer. After having uninstalled LSDistro, whenever I maximise the IE window or Windows Explorer window, the window automatically places itself a little off the screen and doesn't resize or move until minimised. Please advice me on how to solve this problem.

Anubhav Gupta

Via e-mail



Tweak UI lets you tweak Windows settings

R Your LSDistro installation has disabled the 'save Explorer settings'. You will need to turn this back on in order to retain the state you leave IE/Explorer in. Install Tweak UI from Microsoft's Web site and use the Explorer tab in it to enable this option.

Windows

+ Why no boot?

My machine has Windows 98, Office 2000, Norton System Works 2000 and Norton AntiVirus 2001 installed. It has 128 MB RAM, i810e motherboard and an 8 GB IDE hard disk drive.

Of late, when I switch on my PC, the boot process comes to a halt after the Windows 98 Splash screen is displayed and I get an error message saying: "Windows Protection Error, please restart your computer. Press any key to continue." When I press a key, I get a Stacks overflow error, recommending me to modify the stacks settings in config.sys. After that the computer refuses to respond to any user event/action and I have to reset the machine. After many attempts, finally Windows loads successfully.

I've checked config.sys for the stacks settings and found no line referring to such parameters. I've also scanned my PC for viruses.

Please suggest a remedy.

Raghav

Via e-mail

R It would appear that the problem is to do with your RAM module. Check if the RAM modules are properly installed in your machine. In case they have been installed properly then your RAM module could be defective. Try changing your

RAM and your problem should be solved.

Windows

+ Driverless

I have a P-III 700 MHz machine with 128 MB RAM and a 20 GB hard disk. I have recently installed Windows XP 2001 Professional Edition Whistler on my hard disk. It works well but I am unable to load my internal modem and a PixelView PlayTV pro (internal) TV card. Can you help me?

Deependra Bhattarai

Via e-mail

R To install your video card and modem, you should use the Windows 2000 drivers available and ignore the warning of driver signing generated by Windows XP. These drivers will be available on the manufacturers' Web site.

Applications

+ Faulty backup

Please help. I recently formatted my hard disk because I suspected that my machine was infected by the Win32 virus. I saved my data on floppies in zipped files. While transferring the data back to the hard disk I found a suspected virus file in the zipped files containing my most important data. I attempted to delete the file before transferring it to my hard disk. As soon as I did that, all the data in that floppy was lost. I tried to recover it through a software called Easy Recovery and was able to recover the zipped file and a temp file. Both of them are corrupt files and I am unable to recover my data. When I attempted to open the recovered zipped file I got the message 'the central directory is missing. Corrupt zipped file'. Do I stand a chance to recover my data?

Bhagchandani M.D.

Via e-mail

R In order to back up your data you did the right thing by transferring it to a floppy. However, recovering the file would not have been a problem if you hadn't deleted it.

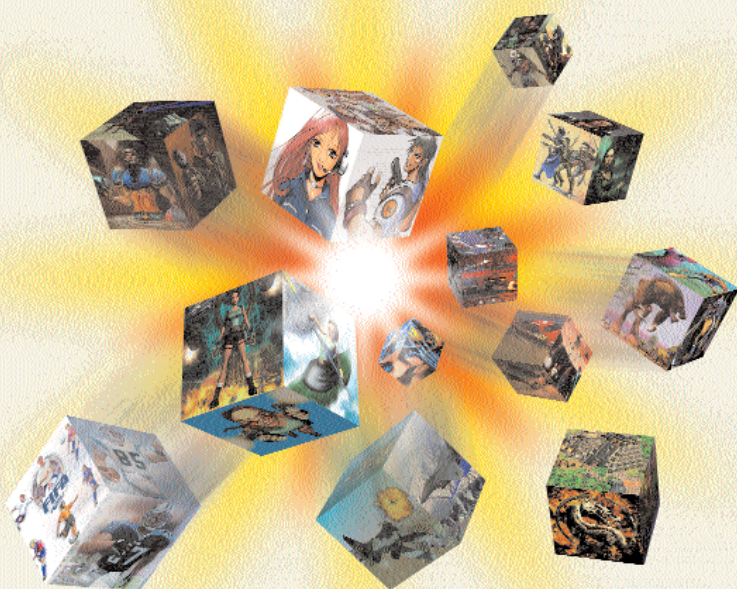
Instead, after formatting the hard disk you should have installed an anti-virus with the latest updates and then copied the files from the floppy to your hard disk and again scanned your machine for viruses. This would have effectively removed the virus, giving you full access to your files. Unfortunately, now you stand no chance of recovering the file. ☹

DO YOU NEED HELP?

Send an SOS to sos@jasubhai.com

Or write in to DIGIT, D-222/2, Om Sagar Bldg, MIDC, Nerul-400 706

tips & tricks



Imaging: Ashwin Boricha

Have a Blast!

An arsenal of tricks to keep you ahead of the game

Contents

ACTION	
Setting up your PC	
PS/2 rate	50
Quake	
Bunny hopping.....	50
Aim right.....	50
Camper's Paradise	
Snipers R us	50
Counter-Strike.....	51
Armed to the teeth.....	51
Box: No One Lives Forever.....	51
Box: Pak Hacking	51
Box: Switching to third person.....	51
Box: Mod Mania	52
SPORTS	
Fifa 2001	
No sprint.....	52
Substituting players.....	52
Avoiding yellow cards.....	52
Box: Tony Hawk's Pro Skater 2	52
SIMULATION	
Need for Speed	
Handling the car right	53
Taking corners.....	53
Box: Roadrash Cheats	53
Box: Motoracer Cheats	53
Box: Crimson Skies	53
Box: System Shock	53
STRATEGY	
Age of Empires	
Master the controls	54
Tactical warfare.....	54
Command and Conquer	
Learn the units	54
Scout the map	54
Base defences.....	54
Black and White	
Nothing to pooh-poo about	55
Body building.....	55
The Sims	
Easier relationships	55
Never take out the garbage.....	55
Easy ways to kill a Sim.....	55
MULTIPLAYER GAMES	
Do you have it in you?	56
Online destinations.....	56
DUN (Dial Up Networking)	56



Tips & Tricks
Compilation of tips
Troubleshooting
CD-RWs, check out,
Mindware

ACTION

A First Person Shooter is a game where you explore the gaming environment from the first person perspective. Popular FPS games include *Quake*, *Unreal Tournament*, *Soldier of Fortune*, and *Half-Life*

Setting up your PC

Before you take the wheels, here's a small primer on getting your machine tweaked and tuned. On the right are the recommended keys for playing a generic FPS.

PS/2 rate

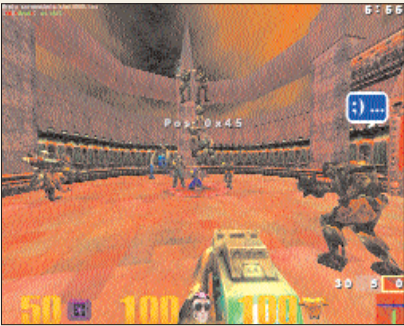
PS/2rate is a sampling rate changer for PS/2 mice. If you have a PS/2 mouse, you must get this program. Change the refresh rate of your mouse to improve the aiming phenomenally. Every gamer worth his salt depends on it. For best results, set it to 200 MHz, and leave it on your startup folder.

Quake

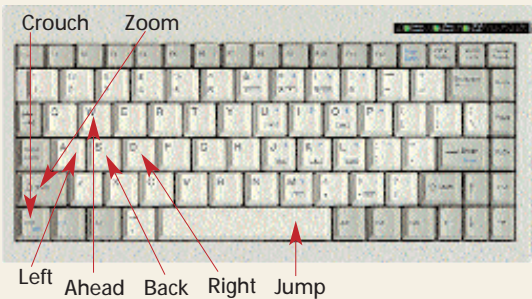
The *Quake* series from id software have been the forerunners of the FPS genre that pushed multiplayer gaming and graphics forward. A few tips that will make you play like the professionals.

Open your third eye

Changing the FOV (field of vision) improves your peripheral vision tremendously, which means you can see your opponents from the corner of your eye. To change the FOV of your game, bring the console down and type `\cg_fov 125` (90 is default) you can try experimenting with it to see what suits you.



A tweaked FOV improves your view as it centres the world around your cursor



Bunny hopping

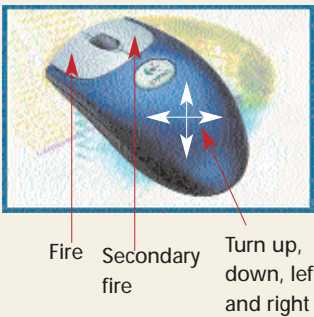
Bunny hopping is a way to traverse a map at a pace not possible with running. Bunny hoppers are also difficult to aim at, and it's difficult to use weapons with splash damage on them. The key to doing a bunny hop is to first run and get to top speed, jump right, and in mid-air let go of forward and hold the strafe right key down and jump again. You should try to stay airborne as much as possible. Press jump as you are about to hit the ground and hit right. Rinse and repeat. It takes a little practice, but it works.

Hog the armour and health

The one who captures the mega health and red armour is more likely to win in a duel because he has that much more chance of surviving. It pays to know the map well, and know the spawn times of each item in the arena. You have to be exactly at the spawn spot to grab it. Some smart-alecky gamers even damage themselves with a rocket so that they can gobble away all the health.

Aim right

Know your map. Learn to run backwards as well as forwards without having to look around. Follow a successful rail with a machine gun burst. It makes more sense than trying to get two successful rails on an opponent, and it also saves



your rail slugs.

You should always try to keep the crosshair, which should be as small as a dot, on your enemy. The key to good aiming is to use the keyboard as well as the mouse to line up the enemy in your gun sight.

Camper's Paradise

It's not a very popular way to play a game. But it works. Here's how to be the most hated guy on a multiplayer server.

Snipers R us

Oh sure, campers are looked upon as the trolls of the underworld, but it's very difficult being popular and being a winner. Besides, do you want to be effective or do you want to look good? And not to forget, every army division has a designated snipers squad. Be proud to be a sniper. Every game has a camper specialist weapon, and each weapon can be used



This poor guy won't know what hit him

in different ways to camp. But talking generalities, this is how you do it.

Assign the zoom key to the [Shift] key and make sure you are at a steady spot. The key to camping is to reduce the enemies' options to just one spot where you have your crosshair aimed. Take cover behind walls, wait and listen for footsteps.

Though the guns in most games are evenly balanced, it's the distance between you and your opponent that makes all the difference. An AWM is more powerful at long distances, while the SMG is more powerful at close quarters.

In big maps, there are often ledges or openings from where you can snipe enemies.

Strafe sniping is the art of taking cover while the gun recoils and reloads, and to only present yourself while shooting. Take a glance at the enemy, shoot, strafe behind cover. Do not move your mouse; the crosshair should stay where it was earlier with a difference only in the x-axis. Reload, and strafe back to shoot again.

Get a sniping buddy. Nothing is more devastating than two enemy snipers shooting away at the same time.

Mouse sensitivity should be kept as low as possible, but not at the cost of hindering movement.

Counter-Strike

This community-made *Half-Life* mod is more popular than *Quake III* and *UT*. Its real world scenario has made it appeal to both newbies and gamers. A few tips to top the list of ownage in *Counter-Strike*.



Taking cover behind crates and crouching puts you in a stronger position

No One Lives Forever Cheats

In the game, just press [T] and then enter the following codes:

Code	Result
Mpimyurfather	God Mode
Mpwegotdeathstar	Infinite Ammo
Mpkingoftehmonstars	All Weapons & Full Ammo
Mpmaphole	Complete Mission
Mpdrdentz	Full Health
mpwonderbra	Full Armour
mpyoulooklikeyouneedamonkey	Add All Armour Options
mpgoattech	All Weapon Upgrades
mpmikid	Exit Game
mpbuild	Show Game Build
mpasscam	3rd Person View
mprosebud	Spawn Snowtruck
mpflowerpower	Paintball Mode
mppos	Toggle Position Display

Know your map

Know your map completely before you venture out, or the veterans will plaster you all over the walls. It pays to know the camping spots, the bombsites, the hostage points, and enemy gear.

Armed to the teeth

Many CS newbies forget the importance of buying armour. The Kevlar and Helmet combo gives you a couple of more seconds of life under crossfire, which could very well make the difference between winning and losing. You may be tempted to save \$300 on the helmet, but

Pak hacking

Did you know you can view your .pak files through WinZip? To view the game textures and sounds, open the successive levels of folders by unzipping them.

you'll only expose yourself where it hurts the most.

Team up

Teams making coordinated attacks always work better than individuals attempting a free-for-all.

If you are on a winning streak, buy grenades and chuck them in unison with your teammates. One grenade hurts. Two grenades can kill.

Flash grenades are useful as an offensive weapon as well as a defensive weapon, and as a decoy too. You can carry two flash grenades in one round. To pull back from a tight situation, flash your enemies and scamper away.

Under cover

Take cover; expose only half of your body. Body damage in CS is area

Switching to third person

QUAKE III

Use the command, cg_thirdPerson 1. You can also set the range and angle of the view by using the following commands:

cg_thirdPersonRange xxx
cg_thirdPersonAngle xxx

NOLF

mpasscam

Type T and enter the code for toggling third person viewpoint.

Mod Mania

Of late, an interesting development of multiplayer action games on the PC is the creation of game 'mods' (modifications). As many FPS games grew popular, various programmers and gamers discovered ways of modifying or creating their own game levels, weapons, and other unique game modifications. This practice became such a common activity that 'mods' became a widespread term in the multiplayer gaming culture.

Today, *Counter-Strike* is the most played game on the Internet, and the



Action Half-Life is a mod that imitates the physics and style of an action movie

Half-Life Team Fortress mod has been bundled together as an update. All these mods are free for download, and additively fun. If you are looking to increase the life of your game, you can try and download some mods from the fileplanet servers.

Top Mods:
Counter-Strike
Rocket Arena
Team Fortress
Infiltration
Action Half-Life

sensitive, which means that the enemy has various locations to hit. If you have crept up in some corner, take that extra nanosecond to make your first bullet a headshot.



In the line of fire

As in real life, guns in CS suffer from a strong recoil. Recoil on a gun with a high rate of fire results in bullets spewing all over the map. Hence, it's best to use burst

fire by spraying three or four bullets and waiting for the crosshair to settle. SMGs such as the MP5 fire without recoil, hence, they can be fired for the entire duration of the clip. Burst fire works best with rifles.

SPORTS

NBA, NHL, NFL, FIFA, Cricket, and Golf are not just professional sports, but game titles that have seen themselves on the PC. A mix of strategy and arcade action, it requires quick reflexes and planning

52

Fifa 2001

Fifa 2001 is a fast paced game with a refined and balanced gameplay. With over 17 leagues from around the world and multiple play modes, it's a must have for any soccer fan.



One of EA's strongest franchises, this one is for twitch gamers with nimble reflexes



No sprint

Don't abuse the Sprint button. It makes your players tire more quickly and a

player with a fatigue of less than 60 per cent is useless. Substitute an injured or fatigued player as soon as possible. Injured players will only wobble like sick tortoise and you will lose possession if you have to control them.



Avoid unnecessary substitutions

Don't substitute your players for no apparent reason, especially if they're not scoring goals. The only reason they're not scoring goals is because you're playing badly; the players are not at fault. Your players may get injured or you may have to take them out to prevent them from being carded.



Avoiding yellow cards

Remember that players who take three yellow cards or more (it depends on the country and competition) miss a match. Keep making changes to your starting line-up to avoid this problem.

Tony Hawk's Pro Skater 2 Cheats

To unlock all levels, pause the game, hold number pad [7] and press [Spacebar], [Spacebar], [Spacebar], [C], [V], [Up], [Down], [Left], [Up], [C], [V], [Spacebar], [V], [B], [Spacebar], [V], [B]. If entered correctly the screen will shake.

Note: If you changed your controls from the default you will have to adjust the code accordingly.



Substituting players

At half time, check you players' stats and substitute those who are still too tired. A good choice would be to take out those who have less than 50 per cent fatigue. Keep in mind that you are allowed only three substitutions.

SIMULATION

A simulation game elaborately presents a world where its physics and realism are mimicked to the minutest detail, be it racing, flying or jet skiing

Need for Speed



Handling the car right

Many drivers have problems handling a car, which often results in either oversteer or understeer.

Oversteer, also known as 'loose', means you turned, but the car turned further than you intended it to. This is caused by a loss of traction in the rear wheels. Understeer, also known as 'push', means you turned, but the car didn't turn enough. This is caused by loss of

Roadrash Cheats

Enter XYZZY during any race to enable cheats. Then enter the following:

- bribe - kills the cop
- k'thunk! - gives you the bat
- spoon! - gives you nitro
- thwack! - gives you the chain
- plugh - disable cheats

traction in the front wheels. The trick is to achieve the balance which lies somewhere in between.



Taking corners

If you approach the corner too fast, no amount of tuning will save you from hitting the outside wall. If you're sure that your approach speed is correct, then it's time to tune the car.

Ideally, you want your car to neither

push nor lose ground when going around the corner at the speed of your choosing. You can either make one end tighter or the other loose to achieve the balance.

Motoracer Cheats

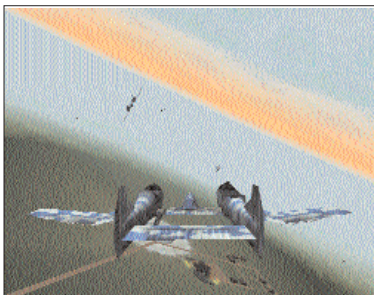
Type where it says Enter Name:

cdnalsi - Unlock all courses

ctekcop - Minibikes

cesrever - Race courses backwards

Crimson Skies



Stay on the tail of the enemy fighters if you want to win a dogfight



Tailgaters

Dog fighting is all about shooting your enemy while making sure you don't get shot. Easier said than done. The best way to do that is to stay on the tail of

your enemy. It keeps the enemy on your crosshair and you can follow his movements. There are many aerial manoeuvres like the Barrel roll and the Yo-Yo that you must master before you can cause any serious damage.



On gun fights

Choose your guns wisely—the higher the calibre, the greater the punch and armour breaking capacity. But more power comes at the cost of long-range accuracy. So if you're a short-range shooter, pick a plane with big guns. Selecting your range of guns depends on the mission and the type of enemy aircraft. If you intend to take down other enemy aircraft, flak missiles work excellently.

System Shock



Navy characters

Choose a navy character as they have all the basic skills (hacking, research and weapons). From here you can either choose to develop your PSI or weapons skills.



Hacking

Hacking can prove to be an extremely useful tool as it makes you more effective at breaking into enemy computers. You can almost hack anything you need.



System Shock 2 follows the story of SHODAN, a ruthless computer that controls the operations in *Von Braun*



Sound right

Sound plays a vital role in the ambience of *System Shock 2* and is key to survival on board the *Von Braun*. The entire storyline progresses through voice messages and gives subtle clues and hints to take decisions.

STRATEGY

Strategy games include management games such as *Simcity* and war games such as *Commandos*. God games such as *Populous* and *Black and White* also fall into this category

Age of Empires II



Ensemble Studio's critically acclaimed title

Master the controls

Winning in *AOE II* requires mastery of controls and numbered groupings. Making a huge loop around your troops and sending them at a target is the easiest way to lose a game. Instead, use tactical strategies to gain an advantage and assign formations to your troops.

Use Hotkeys

Assign various units to numbers so that it becomes easy to single out the unit during a heated skirmish. It makes more economy than selecting the whole army and diverting all the units' attentions. It is easier to coordinate that way. When you finally arrive in combat, let your infantry and cavalry attack on their own, but specify targets for your archers and siege weapons.

Tactical warfare

When sending your troops for attacks, make sure they attack specific weaknesses. Skirmishers and mangonels are good deterrents for archers; if you are faced with cavalry, build pikemen. Archers are excellent for bringing down infantry. Monks and pikemen are exceptional for deterring war elephants. In the face of cavalry archers, deploy camels and cavalry.

Formations

It is essential to have a group formation for any major war. When greeting an enemy, switch to flank formation so that your army converges on the enemy from two different sides. If you have swift cavalry, this makes an excellent formation. A scattered formation is a great one for foot archers, for it spreads them out and thus minimises their damage. The box formation is recommended if you have a strong group of melee units.

Command and Conquer



The *Command and Conquer* franchise from Westwood is synonymous with RTS games

Learn the units

Take the time to learn what each unit is capable of. If you like to use the Allies, also play with the Soviets so you can understand completely what each unit does and what its limitations are.

Scout the map

Half the battle is knowing where your enemy is. In the first few minutes of the game, make your first objective to uncover your opponent's base and the surrounding areas. Send your infantry to the corners of the map and a few down the centre. Dogs are great units to use as scouts, and are cheap to produce. They can cover a lot of ground in a short time.

Build your base

Winning in *Command and Conquer*

requires one simple brainwave. If you out-produce your opponent, you will win. When you have control over the majority of the money source, you deny your enemy the only means he has to



The Soviet's airship is a weapon handicapped by slow speed and lack of armour. However, its large payload of bombs can cause serious damage.

build his army. Attack his Ore Miners whenever possible. When you keep this action up, he will be pre-occupied with protecting his Miners. Always expand toward the ore fields as you go. The key is to never stop building.

Base defences

When creating your air defences, it's a good idea to group them. A single Patriot Missile can stop one or two V3 Launchers, but it does nothing against a Kirov. One Flak Cannon can take out a Harrier, while two or three can take out a squadron. Keep your air defences grouped together to make them more effective.

Capture Tech Structures

These structures always start out neutral, so when you find these on the map, take them, guard them, and use them. Tech Hospitals, when captured, can be used to heal your infantry (troops); Tech Dericks are a source of income; Tech Outpost is a hospital for vehicles and can prove indispensable in your command.

Black and White

Raising a good creature

You must praise as well as punish; encourage curiosity in your creature. Your creature has beliefs and desires. Hunger is one desire. He might believe that he should eat when hungry, should eat villagers, should not eat children.



Your creature is like a pet avatar that learns through your actions

Need is different from greed; if he eats when low on energy, it's good to fulfil a necessity; if he eats merely when hungry, he is evil to satiate his desires. If the creature steals from the villagers, it counts as evil; but it does not count as evil if you take food and give it to him.

You have to toughen-up your creature for him to fight well.

Nothing to pooh-poooh about

Your creature's poo can actually prove to be useful. Drop some into the fields and they'll fertilise your farms and make



You can pet or scold your creature, nurture it, spoil it, or abuse it

them more productive. Drop some into the stores of the enemy villages and you can make all the villagers sick. Whenever your creature wants to poo, point where you want the droppings to go. Following it up with a reassuring stroke will train it to do so without being told.

Body building

Your creature's strength determines how much damage he can inflict in combat. The standard way to boost strength is to make your creature pick up a rock and jog the land with it. Napping in the creature pen will make him heal faster. With a steady diet of exercise and sleep, your creature can build strength to 99 per cent in no time.

The Sims



Live-in relationships and roomies can work out as a great social outlet for your Sim

Easier relationships

Create a family with a male and female adult that are of the same star sign (such as Virgo and Virgo) and move them into a house. Immediately after selecting live mode make them kiss approximately 10 times in a row to set their relationship meter to be 100. If you continue kissing, the female should ask to have a baby.

Never take out the garbage

Buy the small blue 30 simolian garbage can. Whenever it is full, sell it for 30 simolians. Then, just buy a new one, and you will never have to take out the garbage again.



My Sim is playing a game on its PC. It's like staring at a picture inside a picture

Deleting garbage and bills

Use the hand to pick up a plate, trash, or bills. Drag it over something on which you cannot place it, such as a couch or a plant. Then press [Esc] and the object will disappear. This is especially useful if you do not want to command your Sims to clean up or pay the bills.

Easy ways to kill a Sim

Send an unwanted Sim to a specific spot. Enter build mode and place a wall around the Sim. Do not put anything else inside the room with the Sim. The Sim will die in two days. First take an unwanted Sim and tell him or her to swim. Remove all the exits and the Sim will die when he or she falls asleep. Place a Sim in the pool, and then enable the move objects on code to remove the ladders.

Live in style

Furnishing a Sim house is easy: all you have to do is just think along the lines of eat, sleep, crap, and get the most expensive stuff to do them in. Make your Sim cook a meal obtained from the most expensive fridge, put it through the food processor, and cook it on the most expensive oven. After they have eaten, their bladder will take a dive, so send them to the bathroom to use the most expensive toilet. Then their hygiene will go down. If it goes down a lot, make them bathe in the most expensive bath. For fun, use the virtual reality set. It is the most effective way of getting fun.

MULTIPLAYER GAMES

Sure, it's okay to play all by yourself, but you've been missing out on a lot of fun if you haven't been fragging real people instead of bots



Do you have it in you?

The clan phenomenon began once death matching began to incorporate a team element. Gamers started hanging around together and forming teams that wore the same skins. Now they are a characteristic example of every dedicated game server. If you are a newbie, joining a gaming clan will help you polish your skills and take cover behind better players. Games with team elements like *Counter-Strike*, *Teamfortress*, and *Capture the Flag* are very popular among clans online.



L337 Speak

Before getting into a gaming server, learn to talk the lingo as it might make a good subterfuge for whatever lame skills you have. Nothing is more elite than saying, "J00 Sux0rz d00d!! \me=ownz j00! H4W h4w h4w."

LPB: LPB refers to Low Ping Bastards, those blessed individuals who get pings lesser than 100 on gaming servers. Gamers stuck on dial-ups use this abbreviation to feel better about themselves, especially when they are 'owned' by some gamer on a T1 line.

Camping: A player who finds a comfortable corner in the map and stays put. The default strategy of every LPB in existence, this is sometimes used as a synonym for 'loser'.

HPB: What LPBs call lesser-endowed gamers on dial-ups.

To gib: 'To gib' is to overkill the person. Graphically, this means that the person's body breaks into pieces and flies apart in all directions.

Llama: Another word for 'lame'. Synonymous with camper, luser, n00b.

Fagot: See 'camper'.

Matka: Freak headshot.

PK: Player killer.

ROFLMAO: Rolling on the floor laugh-

ing my ass off.

Variations include ROTFLOL, ROFLMFAO, ROOOOOFLOL, etc.



Online Destinations

www.kali.net: Kali enables Internet play of the most popular multiplayer games for over 275,000 players on more than 350 servers in 40 countries. The most popular games on Kali are StarCraft, Baldur's Gate, Mechwarrior 2, Forsaken, Diablo Hellfire, Half-Life, Burnout, Command & Conquer, Diablo, and many more. Proprietary software enables IPX LAN emulation for your games.

Gamespy 3D (www.gamespy3d.com): Gamespy 3D is different from other online gaming services in that it doesn't provide its own gaming servers. Instead, it goes out and finds the best servers you can get to with your Internet connection for the game you want to play. The servers' list that Gamespy offers gives you the server name and general information about the number of players. Gamespy is a tool for the serious gamer, someone who wants to find the best and fastest place to play his/her favourite game.

Yahoo! Games (http://play.yahoo.com/games/): This is the spot if you simply want to play classic games online without having to install a lot of software. Yahoo!'s new online gaming venture is one haunt you should check out. Playable through any Java-enabled browser, the service offers 12 classic games, including Hearts, Poker, Bridge, Checkers, and Cribbage. And access is free.

www.kawabonka.com: For online gamers, there's only one real gaming destination in India, and that's Kawabonka, which hosts free gaming servers in Delhi. It has a really active discussion board, chat room, and very busy CS servers. This is a haven for gamers all across the country and breeding grounds for some



The kawabonka site has many features such as discussion boards, polls, articles, news and e-mail

of the greatest Indian clans. With a server located in India, you can get playable pings on a modem! Kawabonka now hosts servers for *Counter-Strike* and *Capture the Flag* as well. Once broadband becomes widespread and more gamers decide to play online, Kawabonka plans to host servers in all four major metros.

UT Deathmatch 203.144.107.5 : 8888
 UT CTF: 203.144.107.5 : 9999
 Quake III Demo 203.144.107.5:28500
 Quake III 203.144.107.5:28000
 Counter-Strike 203.144.107.5:27015
 Quake CTF 203.144.107.5:28200

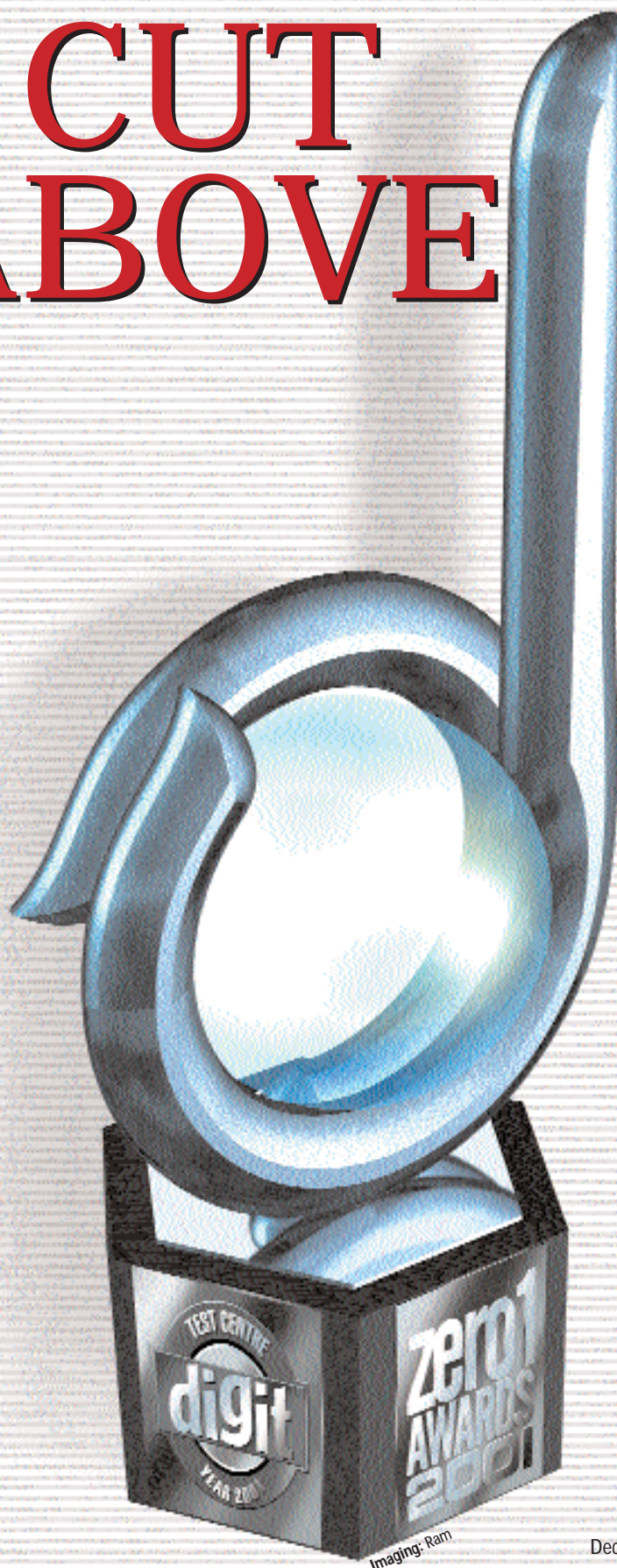


DUN (Dial Up Networking)

If you and your pal stay in the same city, you could engage in some serious one-on-one fragging at the price of a local call. Dial Up Networking allows your friend to log on to your computer, open folders, copy stuff, play games, and so on. It can be really handy. Most PCs (95/98) come with dial-up networking (DUN) already installed. Installing DUN is quite simple and straightforward and any Web resource should help you get started. ■

■ select-zero1 awards

A CUT ABOVE



Another year, another torrent of technology! The end of this year leaves us breathless with the number of new and path-breaking technologies that have emerged across fields, from processors to motherboards and graphics cards all the way to operating systems and image processing software.

This year has been momentous in that the amount of processing power that's available on the desktops makes it possible for even home users to do most things that were earlier in the realm of professionals. The 2 GHz processor made its debut. Memory and hard disk subsystems became more powerful thanks to DDR-RAM and 15,000-rpm drives. This trend of packing more power into the machine is most evident in the field of entertainment and gaming. The processing power on today's graphics cards is truly enormous. Realism is the catchphrase here—even skin and hair on the game characters of today is animated realistically, resulting in a truly stunning experience.

Now even 'ordinary' PCs are equipped with the power and the tools to create home videos and communicate with other PC users over broadband connections—this is evident from the fact that almost all operating systems today integrate a basic video editing software and other audio ripping and conversion applications.

The year 2001 also witnessed the maturing of personal devices such as handheld computers, digital cameras and MP3 players. With more processing power, a wider range of features and slick looks, these devices truly liberate a new generation of mobile users from their desktops.

Couple these developments with the falling prices of hardware and components, and you have a buyer's market out there.

The Zero1 Awards reflect these changes in the IT industry and felicitates the products that were instrumental in bringing about this change.

What follows is the crème de la crème of hardware and software and the technologies that proved to be the beacons of innovation in the past year.

Ladies and Gentlemen, the Zero1 Awards!

Contents

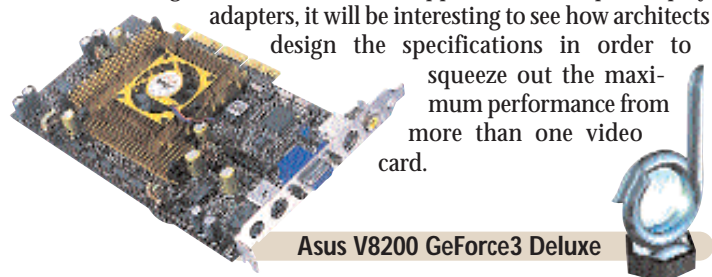
3D Graphics Cards	94	Scanners	114
CD-ROMs	94	Speakers	114
Desktop PCs	96	3D Authoring Software	116
Digital Cameras	96	Accounting Software	116
DVD-ROMs	97	Anti-virus Software	118
Hard Disks (IDE - 5,400 rpm)	98	Browsers	118
Hard Disks (IDE - 7,200 rpm)	98	CD Writing Software	120
Hard Disks (SCSI)	102	DVD Playback Software	120
Inkjet Printers	102	Firewalls	121
Keyboards	104	Image Editing Software	121
Laptops	104	Linux Distributions	124
Laser Printers	105	Multimedia Authoring Tools	124
Monitors (14/15-inch)	105	OCR Software	126
Monitors (17-inch)	108	Office Suites	126
Monitors (19-inch)	108	Page Layout Software	128
Monitors (21-inch)	109	Personal Information Managers	128
Motherboards (AMD)	109	Sound Editing Software (MIDI)	130
Motherboards (Intel)	110	Sound Editing Software (Wave)	130
MP3 Players	110	System Suites	131
Pointing Devices	112	Voice Recognition Software	131
Processors	112	Web Authoring Tools	134



3D GRAPHICS CARDS

You're not a gamer unless you have one of these. Now that frame rates are up to the mark, 3D chip makers are staying focused on keeping the visual experience as real as possible. For this, graphics-processing power is the key. nVidia got it started in the GeForce 3 GPU with Pixel Shaders that add a totally new dimension to graphics detail. Increasing memory speed helps in eliminating bottlenecks at high resolutions and turning up the speed on the graphics core itself pushes up the amount of pixel processing power.

Advancement in 3D technology is among the fastest in the computer industry and the future's extremely exciting! There is no doubt that fill rates will continue to rise exponentially over the next couple of years. We will see different rendering techniques from 3D chip makers, each with their unique visual appeal. But the biggest news in the immediate future is the coming of AGP 8x. With support for multiple display adapters, it will be interesting to see how architects design the specifications in order to squeeze out the maximum performance from more than one video card.



Asus V8200 GeForce3 Deluxe

Gives you unmatched quality without compromising on speed

As far as pure performance is concerned, there's nothing to beat the Asus V8200 GeForce3 Deluxe. The card beats the other cards hands down with its unsurpassed speed and visual quality and also introduces a range of newer features such as per-pixel lighting, which brings stunning results in applications and games that use these features. The provided accessories make the overall package a great buy.

- + Unsurpassed visual quality and speed
- + Plenty of bundled goodies
- + 64 MB of DDR memory

Price: Rs 35,000
Contact: Rashi Peripherals
Phone: 022-8260256-59
Fax: 022-8221012
E-mail: ho@rptechindia.com
Reviewed in: September 2001

Worthy Mentions

ASUS V7700 GeForce2 Ultra

- + Ultra fast graphics core
- + TV-out port

Price: Rs 27,000
Contact: Rashi Peripherals
Phone: 022-8260256-59
Fax: 022-8221012
E-mail: ho@rptechindia.com
Reviewed in: September 2001

AOpen GeForce2 GTS

- + Good value for money
- + DDR video memory

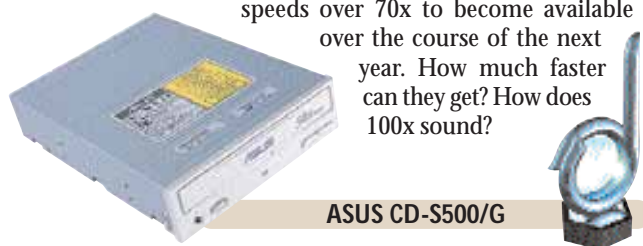
Price: Rs 9,500
Contact: Yogi Comp
Phone: 022-8806582
Fax: 022-8806582
E-mail: info@yogicomp.com
Reviewed in: September 2001

PREVIOUS WINNERS 2000: Creative 3D Blaster GeForce2 GTS
 1998: Matrox G200 1999: Creative 3D Blaster GeForce

CD-ROMS

Faster rotational speeds result in added performance. This year, CD-ROM drives have hit an astounding 56x, resulting in a maximum 8.4 MBps transfer rate! Increasing spindle speeds and accurate optical technology allow designers the flexibility of maximising peak performance from these optical drives.

As invaluable as the floppy disk once was, the CD-ROM drive is no doubt the *de facto* standard for CD-based storage. Though it will be a standard PC peripheral for the next few years, performance improvements haven't exactly been on the top of manufacturers' minds. While most applications are not in need of anything more than 16x speeds, CD-ROM will continue to churn out faster models. Look for drives with speeds over 70x to become available over the course of the next year. How much faster can they get? How does 100x sound?



ASUS CD-S500/G

The speed will be obvious while reading multimedia content off the drive and even while installing software and copying from the CD

The ASUS CD-S500/G 50x drive performed so commendably that it proved to be faster even than some of the 56x drives that were tested during the course of the year. With a very good sequential data transfer rate and excellent access times, this drive would prove to be very suitable for applications where there is a lot of sequential data being read.

- + Fast file copy
- + Fast sequential read speeds

Price: Rs 2,150
Contact: Aditya Promoters
Phone: 022-6338555 to 61
Fax: 022-6338554
Reviewed in: November 2001

Worthy Mentions

Acer CD656 56x

- + Good ripping speed; Low price

Price: Rs 1,850
Contact: Acer Peripherals
Phone: 022-570 5230/31/32
Fax: 022-5705235
E-mail: pankajpamani@acercm.com.tw
Reviewed in: November 2001

ASUS CD-S520G/A 52x

- + Good CD Winbench score
- + Fast sequential read speed

Price: Rs 2,250
Contact: Aditya Infotech
Phone: 022-6338555
Fax: 022-6338554
Reviewed in: November 2001

PREVIOUS WINNERS 2000: ASUS CD-S500 1999: NA 1998: BTC BCD 36XH

DESKTOP PCS

Now this is one place where things just don't stand still. Being a unification of a whole gamut of technologies, desktop PCs have seen major transitions in power and functionality over the past year. From faster and more feature-rich processors to blazingly fast graphics sub-systems and seriously powerful speakers, desktop computers have evolved in sheer functionality and processing power. The norm in today's top-of-the-line computers is 17-inch monitors, 64 MB graphics cards, DVD drives and surround sound speaker systems.

With newer processors such as Intel's Northwood and AMD's Athlon XP, there is plenty to look forward to on the processing front. You can expect a similar situation where graphics cards are concerned: more powerful graphics sub-systems are going to appear in desktops. With a very definite drop in the prices of TFTs, the coming year is going to witness more and more PC manufacturers bundling TFT display systems along with their systems. Faster motherboards and memory sub-systems, DVD,

and cool peripherals are going to be the norm next year... all at a price that will bring these desktop monsters within the reach of most users.



Dell Dimension 8100

Truly a class apart and boasts of a configuration that can give its competition a complex

When it comes to sheer processing power, in terms of the processor or the graphics sub-systems, there's nothing that can touch the Dell Dimension 8100. With a 1.5 GHz Pentium 4 processor, a GeForce3 graphics accelerator, DVD, and a high-end Turtle Beach multi-channel sound card, the machine is the epitome of power on your desktop. Add to that the excellent build quality and the very thorough documentation and you have a machine that few other brands can touch in terms of power, looks and functionality.

- + Best-of-class system components
 - + Outstanding build quality
- Price:** Rs 98,134

Contact: Dell India
Phone: 080-5586110
Reviewed in: October 2001

Worthy Mentions

Amdell Monster PC 1400

- + Very commendable performance in multimedia-heavy applications
- Price:** Rs 65,000
Contact: Intelisys India Ltd
Phone: 022-8527000/8000
Fax: 022-8519723
Reviewed in: October 2001

HCL Beanstalk Omega

- + Good performance in image editing applications
 - + Competitively priced
- Price:** Rs 46,999 + taxes
Contact: HCL Infosystems
Phone: 4520977
Fax: 914-555221
Reviewed in: October 2001

PREVIOUS WINNERS 2000: The Best Coppermine 770E
1999: Siemens Scenic 600 1998: NA

DIGITAL CAMERAS

As these gadgets become more advanced and sophisticated, they will certainly become a lot more complex, with more technology squeezed inside tiny boxes. A lot of integration has seen the birth of many multipurpose cameras as well, serving as a device for recording video in addition to taking still pictures. Image quality is the single most important characteristic of a digital camera. 6 Megapixel cameras offer the best image quality but also carry a heavy price tag. The demands of professional photography have brought forth cameras that carry high pixel ratings and a truckload of features.

Well into the future, there will be significant advances in digital camera technology. Image sensors will pack a higher density of pixels as well as image enhancing algorithms to filter out noise and visual distortions. But with convergence being the buzzword these days, it shouldn't sound surprising to hear that digital cameras, PDAs, cell phones and digital camcorders will blur into a single device.



Sony DSC-P1

Pixel-perfect reproduction in an easy-to-use package. Plus the ability to shoot a maximum of 1 minute of video together with voice recording

This camera, despite its very small form factor, has brilliant optical and imaging features and packs plenty of punch into a small package. It offers features—such as taking integrated filters for black and white and sepia modes, adjusting white balance, etc—coupled with extreme ease of navigation, and is a very good choice for the discerning user who needs portability coupled with performance.

- + Great features
 - + Picks up finer details very well
- Price:** Rs 49,990
Contact: Best International
Phone: 022-2611050

Fax: 022-2616886
E-mail: bestint@vsnl.com
Reviewed in: August 2001

Worthy Mentions

Kodak DC- 4800

- + Brilliant optics and very sharp image quality
 - + Clear LCD viewfinder
- Price:** Rs 49,000
Contact: Neoteric Informatique
Phone: 022-4172600
Fax: 022-4185294
E-mail: sales@neoteric-info.com
Reviewed in: August 2001

Canon Ixus

- + Plenty of bundled software with rechargeable batteries
 - + Great looking and very light
- Price:** Not available
Contact: Mahatta Camera Corporation
Phone: 022-8504608
Fax: 022-8508065
E-mail: mccbom@vsnl.com
Reviewed in: August 2001

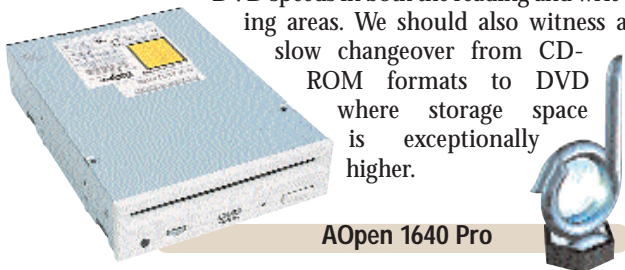
PREVIOUS WINNERS 2000: ClickIt! DCE 400 1999: NA 1998: Kodak DC 210

DVD-ROMS

Not only are DVD-ROMs readable, but from this year things have taken a turn for the better now that the consumer-level DVD ReWriter has been introduced. Though 4.7 GB of storage offered by a DVD media may sound a bit of an overkill to some, it serves as a good medium for backups as you can fit the data on a small hard disc onto a single DVD media. Having the fastest DVD-ROM out there means manufacturers have to ramp up rotational speeds.

A lot of exciting things are in store for DVD technology. In the coming months, expect to see DVDs with significantly higher room for storage. It will not be a novelty to see DVD media capable of supporting data up to 100 GB. Also, look out for faster

DVD speeds in both the reading and writing areas. We should also witness a slow changeover from CD-ROM formats to DVD where storage space is exceptionally higher.



AOpen 1640 Pro

With excellent data transfer rates and effective error correction, this could be your ticket for watching DVD movies as well as data applications

This 16x drive proved to be a very stable and high-speed performer delivering best-of-class data transfer performance, especially in the file copy tests. Offering complete compatibility with other formats, this drive is a step up from your CD-ROM drive with very good across-the-board performance. For all you movie buffs out there, this drive will let you enjoy the Matrix lobby shooting spree and will also exhibit sterling data transfer speeds.

+ Sturdy build quality
Price: Rs 5,250
Contact: Yogi Comp
Phone: 022-8806582

Fax: 022-8806582
E-mail: yogicomp@netcracker.com
Reviewed in: June 2001

Worthy Mentions

Pioneer 105SZ

+ Slot in interface ensures good build quality
Price: NA
Contact: Integra Dataware
Phone: 022-8215179
Fax: 022-8231461
E-mail: mumbai@integramicro.com
Reviewed in: January 2001

Pioneer 303SA

+ Very good build quality
+ Good solution if you already have a SCSI setup
Price: NA
Contact: Integra Dataware
Phone: 022-8215179, 022-8207208
Fax: 022-8231461
E-mail: mumbai@integramicro.com
Reviewed in: January 2001

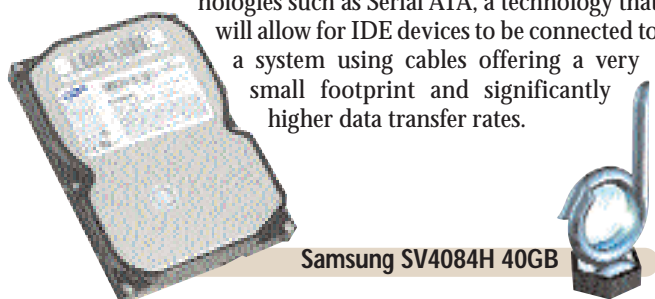
PREVIOUS 2000: Pioneer DVD-104SZ
WINNERS 1999: Creative Encore 6x DVD 1998: NA

1/ page V AD

HARD DISKS (IDE – 5,400 RPM)

In the entry-level segment, there has been a spurt in the performance of drives with the advent of newer technologies such as ATA/133 and greater areal densities. While sheer performance is not really the criteria here, what's more important is the value proposition that these drives bring in case you want to assemble a computer system. These drives hit a sweet spot in price and pure storage space, offering a whopping 100 GB space!

A clear trend in this category is the ever-increasing capacities of these drives. With the areal densities of these drives becoming greater, more data can be packed onto a single platter and the coming year is expected to witness the arrival of IDE drives with capacities in excess of 150 GB. Also on the horizon are technologies such as Serial ATA, a technology that will allow for IDE devices to be connected to a system using cables offering a very small footprint and significantly higher data transfer rates.



Samsung SV4084H 40GB

A blazingly fast drive with ample capacity that is light on the wallet

When it comes to an affordable drive that delivers good performance for entry-level applications, the 40 GB Samsung drive wins top honours. It boasted very good data transfer characteristics and also proved to be a silent performer. It logged a sequential write speed of 29 MBps, which is better than even some of the 7200-rpm drives. The average access time under SiSoft Sandra 2001te was noted at an unbelievably low 2 ms and it utilised very little CPU power.

+ Good data transfer speed
+ Affordable pricing
Price: Rs 6,000
Contact: Samsung Electronics India
Phone: 011-6322517/18/19

Fax: 011-6322607
E-mail: marketing@samsungindia.com
Reviewed in: November 2001

Worthy Mentions

Maxtor 536DX 100GB

+ The largest capacity available in the country
+ Very commendable read-write speeds
Price: Rs 12,800
Contact: eSys Distribution
Phone: 011-6420451/450/453
Fax: 011-6420452
E-mail: anshuman@karmasg.com
Reviewed in: November 2001

Maxtor D540X 80GB

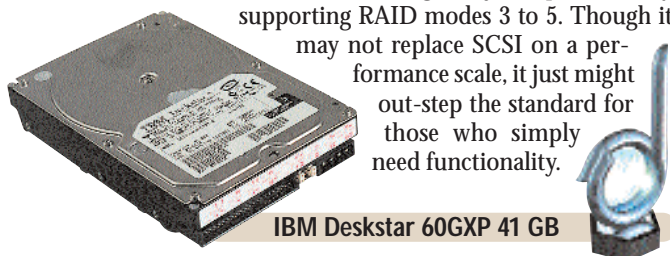
+ Good data transfer characteristics
+ High storage capacity
Price: Rs 4,490
Contact: eSys Distribution
Phone: 011-6420451/450/453
Fax: 011-6420452
E-mail: anshuman@karmasg.com
Reviewed in: November 2001

PREVIOUS WINNERS 2000: NA 1999: Quantum Fireball CR
1998: Maxtor Diamond 1260 Model 88400DS

HARD DISKS (IDE – 7,200 RPM)

Just because IDE drives are positioned as affordable, they are not necessarily as slow as a lumbering hippo. In the course of this year alone, storage densities have increased by 400 per cent! That means more data zips through for transfer per rotation. Faster-spinning 7,200-rpm drives push more data through per second than older and slower 5,400-rpm discs which are slowly giving way to these faster drives on desktop PCs.

In the coming year IDE technology is about to get a booster shot. Drives based on the ATA133 protocol are about to make their entry into the market. ATA133 allows for 33 per cent greater bandwidth than the current ATA100 standard. Serial ATA is the next major revision for IDE peripherals which should make its presence felt in 2002. With initial speeds of 1.5 Gigabits per second (Gbps), Serial ATA will scale to a higher speed of 6 Gbps by 2007. IDE RAID is taking a major step forward by supporting RAID modes 3 to 5. Though it may not replace SCSI on a performance scale, it just might out-step the standard for those who simply need functionality.



IBM Deskstar 60GXP 41 GB

Best suited for applications that demand more from your computer's storage sub-system and for sustained performance of media-intensive software

This is one of the most outstanding drives when it comes to performance. Be it data transfer rates or access times, this hard disk delivers while working with gobs of data, as was amply demonstrated in our benchmarks. With a 7,200 rpm spindle speed and an ample 2 MB buffer onboard, this drive is best suited for applications such as databases and audio video editing that demand more from your computer's storage subsystem.

+ Excellent data transfer rate
+ Very silent
Price: Rs 7,300
Contact: Wales Technologies
Phone: 022-3828100 / 8200
Fax: 022-3877418
Reviewed in: November 2001

Worthy Mentions

Seagate Barracuda ST320414A

+ Very good performance at an affordable price
+ Silent operation
Price: Rs 4,750
Contact: ACI Infocom Ltd
Phone: 022-8266031 / 32
Fax: 022-8250674
E-mail: abhishek@aciinfo.com
Reviewed in: November 2001

IBM Deskstar 75GXP 76.8GB

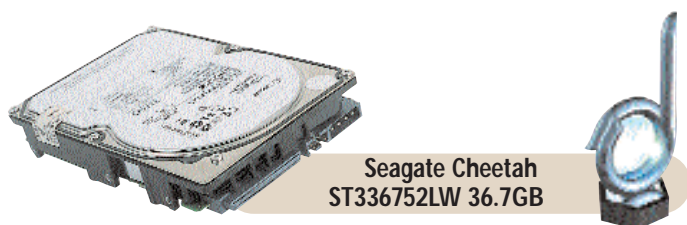
+ Very silent operation
+ Best-of-class read/write speeds
Price: Not available
Contact: Wales Technologies
Phone: 022-3828100 / 8200
Fax: 022-3877418
Reviewed in: November 2001

PREVIOUS WINNERS 2000: IBM DeskStar 72GXP DTLA-307075
1999: NA 1998: NA

HARD DISKS (SCSI)

SCSI drives are the best of breed in hard disk technology. Being the fastest hard disks on the planet, it's no wonder that SCSI is the interface of choice where performance and data integrity matter. The newest flavour of SCSI introduced this year was Ultra320, the seventh generation of SCSI sporting a bandwidth that will make your jaw drop—320 MBps!

As long as the system bus chugs along fast enough, SCSI performance improvements will certainly follow. Hard disks with rotational speeds in excess of 10,000 rpm will begin to replace 7,200-rpm models in the mainstream. Ultra320 should see the way for SCSI in 2002 as a high-end option for servers and enterprises. In fact, due to the high cost of implementing SCSI, it will most likely stay at Ultra320.



Seagate Cheetah
ST336752LW 36.7GB

Mindnumbing data transfer rates and low CPU utilisation

This 15,000-rpm Ultra160 drive from Seagate is the fastest drive available right now. Period. The drive delivers performance which is faster even than ATA100 drives configured to run at RAID-0. With burst data transfer rates approaching 80 MBps, there is no other drive that even comes close to this one in terms of sheer performance. If you're a professional looking for top-of-the-line transfer rates for the most demanding data-intensive applications such as high-end audio-video editing and servers, this is definitely the drive for you.

+ Blazing fast data transfer rates
+ Quiet operation
Price: Rs 38,175
Contact: ACI Infocom Ltd

Phone: 011-6831878/79
Fax: 011-6831968
E-mail: sanjayv@aciinfo.com
Reviewed in: December 2001

Worthy Mentions

Seagate Cheetah ST318404LW 18.4GB

+ Very stable performer with commendable performance characteristics
+ Silent operation
Price: Rs 13,500
Contact: ACI Infocom Ltd
Phone: 011-6831878/79
Fax: 011-6831968
E-mail: sanjayv@aciinfo.com
Reviewed in: May 2001

Seagate Cheetah ST336704LW 36.7GB

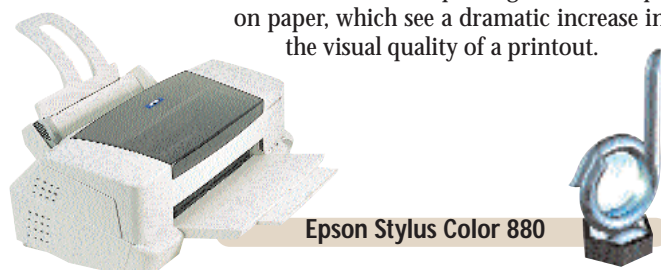
+ Good blend of storage capacity and performance
Price: Rs 27,500
Contact: ACI Infocom Ltd
Phone: 011-6831878/79
Fax: 011-6831968
E-mail: sanjayv@aciinfo.com
Reviewed in: May 2001

PREVIOUS WINNERS 2000: Seagate Cheetah 18XL ST 318404LW 1999: IBM UltraStar 18XP DGHS 1998: Seagate Cheetah ST391021c

INKJET PRINTERS

Image quality is the name of the game and the difference between inkjet output and photographs is almost undecipherable. The higher the dpi (dots per inch) of an inkjet printer, the better the output. We now have inkjet printers capable of reproducing images at a staggering 2880 dpi. Thanks to increased accuracy in colour reproduction, finer ink droplets and quicker print engines, inkjet printers today can even rival the quality and speed of more expensive laser printers.

Currently, special quality paper is needed to reproduce an image at high-resolution. Research is underway that would allow photo-like images to be reproduced on ordinary paper. In the future, fabrication advances will allow for much larger print heads that not only increase resolution, but also have much higher printing speeds. Further developments will focus on creating water-resistant ink and squirting smaller drops on paper, which see a dramatic increase in the visual quality of a printout.



Epson Stylus Color 880

The first printer that claims to give 2880 dpi on premium glossy matt paper. It gives you great print quality and colour reproduction

The Epson stylus Colour 880, with its faithful reproduction of fine details and colour gradations, emerged the clear winner. The printer performed well in the speed as well as image quality tests. Its robust build quality will see to it that it performs well during extended use.

+ Very good colour reproduction
+ Good build quality
Price: Rs 21,800
Contact: Epson India

Phone: 080-5321266
Fax: 080-5581799
E-mail: sheetal@eid.epson.co.in
Reviewed in: March 2001

Worthy Mentions

Hewlett-Packard 990 Cxi

+ Fine reproduction of details
+ Automatic dual-side printing module
Price: Rs 21,999
Contact: HP India
Phone: 080-5216121
Fax: 080-5276802
E-mail: princy_bhatnagar@hp.com
Reviewed in: June 2001

Epson Stylus Photo 870

+ Accurate reproduction of features
+ Fast print times
Price: Rs 19,500
Contact: Epson Singapore Pvt Ltd
Phone: 080-5321266
Fax: 080-5581799
E-mail: sheetal@eid.epson.co.in
Reviewed in: June 2001

PREVIOUS WINNERS 2000: Hewlett-Packard DeskJet 930C 1999: Canon BJC-6000 1998: Epson Stylus Color 800

KEYBOARDS

There's a lot that goes into making a keyboard than just special function keys. The feel of a keyboard is essential as the focus is high on being ergonomic and user friendly. Split keyboards are a prime example of this. These keyboards are split down the middle and consist of two halves. This allows your hands to assume a more natural and comfortable position, with support for the elbows. As the most widely used input device, keyboards have gone through many small, yet meaningful changes to make the job of typing as easy as possible.

In the time to come, keyboards will go through various enhancements to make them even more ergonomic and will pack in more features such as built-in speakers and scanners. This trend of integrating components onto keyboards is expected to continue. That isn't to say that radical changes won't be in order. Touch-sensitive keyboards are currently under development as are biometric-enabled models. But for the common user, the conventional 101-key keyboard will remain on desktops for years to come.



Logitech Cordless Freedom Navigator

Every feature that you could possibly think of, and some you simply couldn't, in a keyboard

This cordless, multimedia-enabled keyboard uses radio signals to communicate with the base unit, giving you the freedom to move around. Its buttons are made of special rubber to provide a better grip, which makes it very comfortable to type, especially during long stretches of work. Another highlight is the power saving feature to save the battery life of the cells used in the keyboard. There are a plethora of settings and functions that can be assigned to the programmable buttons, making it a highly utilitarian and configurable device.

+ Excellent features
+ Freedom to use in any direction
Price: Rs 7,900
Contact: Rashi Peripherals

Phone: 022-8260256-59
Fax: 022-8221012
E-mail: ho@rptechindia.com
Reviewed in: July 2001

Worthy Mentions

Microsoft Internet Keyboard Pro
+ Multiple number of programmable hotkeys (19)
+ 2 USB ports
Price: Rs 2,900
Contact: Mnemonic Systems
Phone: 8010871
Fax: 8051761
E-mail: mnemonic@vsnl.com
Reviewed in: July 2001

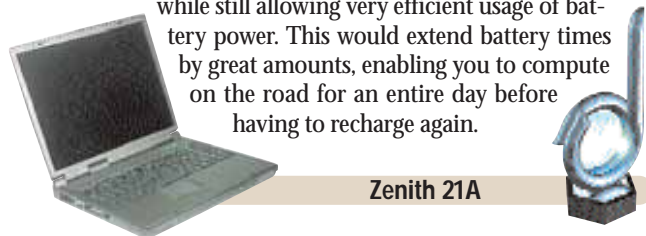
Samsung SDL1500
+ Excellent build quality
+ Great value for money
Price: Rs 400
Contact: Samsung Electronics India
Phone: 011-6322517/18/19
Fax: 011-6932607
E-mail: marketing@samsungindia.com
Reviewed in: July 2001

PREVIOUS WINNERS 2000: ACER Airkey 1999: Logitech Cordless 1998: NA

LAPTOPS

With increasing computing power in mobile devices, the line differentiating laptops and desktop systems is getting increasingly thinner. With integrated DVD and CD-RW drives, large 14-inch TFTs and very serious processing and graphics capabilities built into them, the laptops of today can very well replace, or in some cases even surpass, your desktop computers. Newer technologies such as 802.11 wireless networking and Bluetooth are becoming more visible on today's notebooks, thus further increasing their portability and functionality.

The catchphrase in the laptops of tomorrow is going to be portability and even smaller profiles and form factors with increasing processing power. Newer technologies such as Banias, which will help design processors that use far lesser amounts of processing power, will help laptops of the future boast of gigahertz speeds while still allowing very efficient usage of battery power. This would extend battery times by great amounts, enabling you to compute on the road for an entire day before having to recharge again.



Zenith 21A

A powerful graphics subsystem and ample processing power for both office and professional applications

With a good processor, 128 MB of RAM and a spacious screen, this laptop is well suited to processor-intensive applications such as image processing. Also, the robust S3-based graphics subsystem enabled it to deliver very commendable results in gaming. This system was also replete with manuals and other peripherals such as a separate mouse, making it a very complete and feature-rich package. With a sturdy build quality, this notebook will give you the power required to take demanding applications on the road.

+ Excellent performance; Lots of detailed manuals
Price: Rs 1,00,000
Contact: Zenith Computers

Phone: 022-8377297
Fax: 022-8377300
Reviewed in: January 2001
E-mail: mumbai@zenith-india.com

Worthy Mentions

IBM ThinkPad Transnote
+ Compact innovative design, touch sensitive screen
+ Electronic scribble pad for handwritten input
Contact: IBM India Limited
Phone: 080-2079999/3333
Phone: 080-2079311
Price: Rs 2,30,000
E-mail: lsawkar@in.ibm.com
Web site: www.ibm.com

Sharp AX-20 (March 2000)
+ Good performance
+ Very small form factor
Price: Rs 1,20,000
Contact: L&T
Phone: 022-2884412
Fax: 022-2853577
E-mail: it-sharp@ltbkh.litindia.com
Reviewed in: March 2001

PREVIOUS WINNERS 2000: ACER TravelMate 602TER 1999: ACI Profile 1998: NA

LASER PRINTERS

The technology used in laser printers is so advanced that certain parts of it are more sophisticated than a computer! On a performance scale, print speeds have seen a steady increase over the years and paper handling has improved to facilitate a high-throughput environment. Superb print quality is directly attributed to the advance in printing technology and better toner material. If quality and speed of print are two characteristics you're looking for, look no further.

Future-generation laser printers will include technologies such as finer toner particles, which assist in obtaining a finer print quality. New materials, improved printer design and physics will also be key facets in the overall development of laser printers. Network printers will be the device of choice for workgroups because of their lower costs of purchase, maintenance and upkeep.



Lexmark Optra M412

Best for small office applications which need a good combination of quality and speed; for low printing costs and long-lasting cartridges

A crisp, sharp output when it comes to vector images and text prints, plus its print speed makes this an outstanding product. Aesthetically designed, this printer comes with an LCD display that shows the name of the file that is being printed and the port it is being printed from. The printer is also very sturdy; you won't notice any flimsy paper trays or output bins. It comes with a 133 MHz processor and takes less than 12 seconds to print the first page, making it ideal for small to medium workgroups.

- + Fast Vector images printing
- + Bundled Mark Vision for Network Administration
- Price:** Rs 37,995
- Contact:** TVS Electronics

Phone: 044-2325506
Fax: 044-2327577
E-mail: ap.aditya@tbg.tvse.co.in
Reviewed in: July 2001

Worthy Mentions

Hewlett-Packard LaserJet 1220SE

- + Dual interface of USB along with parallel port
- + Bundled accessory, Scanner-cum-copier
- Price:** Rs 31,500
- Contact:** HP India
- Phone:** 011-6826000
- Fax:** 011-6826030
- E-mail:** tarunjeet.sarao@hp.com
- Reviewed in:** July 2001

Hewlett-Packard LaserJet 1200

- + Good for vector image printing
- + Very competitive tone price
- Price:** Rs 21,500
- Contact:** HP India
- Phone:** 011- 6826000
- Fax:** 011-6826030
- E-mail:** tarunjeet.sarao@hp.com
- Reviewed in:** June 2001

PREVIOUS WINNERS 2000: Samsung ML-5200A
 1999: NA 1998: Hewlett-Packard 4000TN

MONITORS (14/15-INCH)

When it comes to entry-level display systems, the 15-inch monitor is still going great guns. With ever-evolving technology in terms of resolution and refresh rates, today's top-end 15-inch monitors can even reach resolutions of up to 1280x1024—something that was unthinkable in the past. When it comes to building a budget PC, there's nothing to beat a 15-inch monitor, at least for now.

Advancements in this area are not as dramatic as in some of the other hardware categories, but there has been an improvement in the display characteristics of 15-inch monitors, namely in terms of greater resolutions and higher refresh rates. Apart from that, advancements that have been reflected in the larger screen monitors have been intentionally left out of this category, primarily due to the fact that 15-inch monitors represent a value solution and, therefore, incorporating more advanced features would unnecessarily raise the price of these monitors.



Viewsonic E53

A high video bandwidth of 110 MHz enables support for a refresh rate of 75 Hz at 1024x768 pixels. An excellent choice for budget graphics and image applications

This monitor proved to be a very worthy choice for users who want a 15-inch monitor but need the characteristics of a 17-inch monitor. It was one of the very few 15-inch monitors that supported resolutions of 1280x1024—something that is seen only in larger monitors. With very good display characteristics, this monitor won top honours in this category.

- + Very high resolution support for a monitor of its size
- + Competitively priced
- Price:** Rs 7,750
- Contact:** Roop Technologies Pvt Ltd

Phone: 022-6631921 to 24
Fax: 022-6103919
E-mail: roop@vsnl.com
Reviewed in: September 2001

Worthy Mentions

Sony CPD-E100

- + Very good resolution support
- + Low stripe pitch
- Price:** Rs 13,585
- Contact:** Sony India Ltd
- Phone:** 022-8313333
- Fax:** 022-8312935
- E-mail:** salesmb@sid.in.sony.com.sg
- Reviewed in:** September 2001

Viewsonic E50

- + Competitively priced
- + Stable and clear image characteristics
- Price:** Rs 7,000
- Contact:** Roop Technologies Pvt Ltd
- Phone:** 022-663 1921 to 24
- Fax:** 022-6103919
- E-mail:** roop@vsnl.com
- Reviewed in:** September 2001

PREVIOUS WINNERS 2000: Sony CPD-E100
 1999: Hansol Mazellan 501P 1998: Elzo F35

MONITORS (17-INCH)

One of the fastest growing categories of monitors, 17-inch monitors have now become a veritable de facto standard for most home and office PCs. With today's content-rich Web sites and graphically intensive games, it's almost a sacrilege to view them on anything less than a 17-inch monitor. Over the past year, we've seen many new enhancements in this category in terms of the tube construction: flat tubes are becoming increasingly more mainstream given their affordable prices and superior image quality.

The resolutions that today's top-end 17-inch monitors support are in the realm of those supported by 19- and some 21-inch monitors, where they reach as high as 1600x1200. The improvements that we can look forward to are in terms of the features that will be incorporated into the display such as USB ports, greater resolutions and ever-plummeting prices. With tubes being fabricated using lower dot and stripe pitches, monitors of tomorrow are going to allow even greater resolutions, resulting in sharper, clearer, more brilliant images.



Viewsonic PS775

Offers very impressive picture quality and high resolution support, unmatched by any other 17-inch monitor

When it comes to performance in terms of image quality and features, there are very few monitors that come close to the Viewsonic PS775. This monitor offers high resolutions and refresh rates along with advanced screen and image control capabilities through an intuitive and lucid interface. All this makes it suited for applications that need high image quality.

- + Very high refresh rate and resolution support
- + Advanced screen control capabilities
- Price:** Rs 25,500

Contact: Roop Technologies Pvt Ltd
Phone: 022-6631921
Fax: 022-6103919
E-mail: roop@vsnl.com
Reviewed in: April 2001

Worthy Mentions

Sony CPD-E220

- + Very high resolution support
- + Low dot pitch
- + Very good brightness and contrast
- + Crisp picture quality
- Price:** Rs 23,910
- Contact:** Sony India Ltd
- Phone:** 022-8313333
- Fax:** 022-8312935
- E-mail:** salesmb@sid.in.sony.com.sg
- Reviewed in:** April 2001

Philips 107T

- + High resolution support (1280x1024)
- + Low dot pitch (0.25 mm)
- Price:** Rs 16,000
- Contact:** Philips (India)
- Phone:** 022-6912000
- Fax:** 022-6912499
- E-mail:** c.d.khatu@philips.com
- Reviewed in:** April 2001

PREVIOUS WINNERS 2000: LG Flatron 775FT Plus 1999: Elizo FlexScan F55S 1998: ViewSonic PT775

MONITORS (19-INCH)

In the realm of professional graphics and image editing, 19-inch monitors are a good place to start. Providing an effective mid-point between the more expensive 21-inch monitors and the smaller 17-inch monitors, these are getting to be the more accepted choice in professional applications. Today's monitors support ever-increasing resolutions and also incorporate a lot of functionality into the device in terms of additional ports such as USB and composite inputs that can accept video signals from a range of video sources.

The advancements that are happening here are in terms of enhanced resolutions and refresh rates as well as in terms of a greater number of integrated peripherals and ports in the monitor. Flat screen tubes have become de facto when it comes to

performance in this category. Further advancements will primarily be in terms of greater resolution and refresh rates with improved tube fabrication processes, resulting in lower costs.



Samsung SyncMaster 955DF

Loaded to the gills with features, the performance of this monitor is anything but flat

This flat tube monitor excelled in the image quality test and boasted of high refresh rates and resolutions. This makes it ideally suited for applications that involve precision graphics and image editing work. Additionally, this monitor also features an integrated USB hub for added functionality. When it comes to a high performing 19-inch monitor for professional applications, this one does very well.

- + High refresh rate and resolution support
- + Integrated USB hub
- Price:** Rs 32,000
- Contact:** Samsung Electronics India

Phone: 011-6322517/18/19
Fax: 011-6932607
E-mail: marketing@samsungindia.com
Reviewed in: September 2001

Worthy Mentions

Acer P911

- + High refresh rate and video bandwidth
- + Good build quality
- + Separate RGB (BNC) connector
- Price:** Rs 30,000
- Contact:** Acer Communications and Multimedia India Pvt Ltd
- Phone:** 022-5705230
- Fax:** 022-5705235
- E-mail:** joe@acercm.com.tw
- Reviewed in:** September 2001

LG StudioWorks 995e

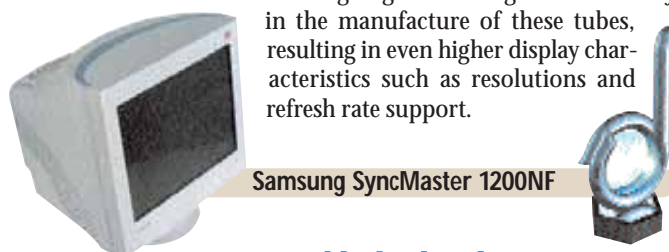
- + High refresh rates at high resolutions
- Price:** Rs 24,000
- Contact:** LG Electronics India Ltd
- Phone:** 011-6910123
- Fax:** 011-6936847
- E-mail:** sanjaym@lginida.com
- Reviewed in:** September 2001

PREVIOUS WINNERS 2000: Samsung SyncMaster 900 IFT 1999: Elizo FlexScan F77 1998: Sony Multiscan 400PS

MONITORS (21-INCH)

The big daddy of monitors, these display titans have represented the final frontier for professional graphics and image editing applications in CRT display systems. In terms of their sheer size and support for high resolutions, they are ideally suited for applications where you need to get a whole lot of information on the screen without having to forfeit the effective size of the displayed content. Since these displays are primarily used by professionals, they usually support a plethora of features that cater to these segments such as multiple inputs of different standards and formats, integrated connectivity, etc.

The challenge that has always been before 21-inch monitors is that of the fabrication of flat tubes. While there have been a handful of players that have succeeded in creating flat 21-inch monitors, this is not yet a standard. Future advancements in this arena are going to involve greater efficiency in the manufacture of these tubes, resulting in even higher display characteristics such as resolutions and refresh rate support.



Samsung SyncMaster 1200NF

Impeccable display characteristics coupled with a plethora of features

Based on an Aperture Grille tube, this monitor is replete with a variety of features and boasts impeccable image characteristics. Featuring an integrated USB and ports, and BNC connectors, it is ideally suited for professional applications that need this kind of connectivity and features. Additionally, this monitor features a flat tube—a distinction that only a handful of other manufacturers have been able to boast of.

+ Flat tube, high resolution and refresh rate support
+ USB connectors and BNC video inputs
Price: Rs 55,000
Contact: Samsung Electronics India

Phone: 011-6322517
Fax: 011- 6322607
E-mail: marketing@samsungindia.com
Reviewed in: December 2001

Worthy Mentions

LG StudioWorks 221U

+ Very good refresh rate and resolution support
+ Integrated USB ports
Price: Rs 49,500
Contact: LG Electronics India Ltd
Phone: 011-6910123
Fax: 011-6936847
E-mail: sanjaym@lginida.com
Reviewed in: September 2001

Viewsonic G810

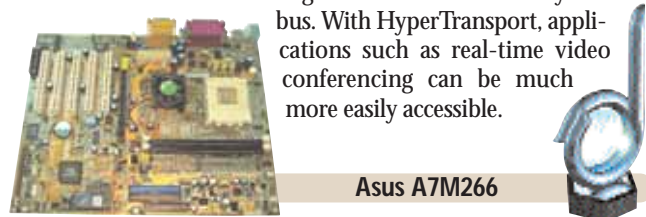
+ High resolutions at very high refresh rates
+ Low dot pitch
Price: Rs 46,500
Contact: Roop Technologies Pvt Ltd
Phone: 022-663 1921 to 24
Fax: 022-6103919
E-mail: roop@vsnl.com
Reviewed in: September 2001

PREVIOUS WINNERS 2000: Sony CPD-G500 1999: NA 1998: NA

MOTHERBOARDS (AMD)

It's been a long and hard history for AMD, having to follow in the footsteps of Intel. Today, a totally different picture is painted now that their Athlon and Duron chips knock the socks off an equivalently clocked Pentium 4 and Celeron, respectively. Motherboards made under the Socket A platform have been given a boost thanks to the native 133 MHz FSB support of newer AMD chips. Add to that support for DDR memory and you've got yourself one powerhouse of a motherboard!

AMD's newest 64-bit processor, code-named Hammer, will have an integrated memory controller which will allow itself to bypass the chipset in order to access system memory. This allows memory access to scale with CPU speeds instead of being stuck with slowly advancing speeds of the FSB. Along with Hammer comes AMD brainchild HyperTransport, capable of supporting a much higher bandwidth than today's PCI bus. With HyperTransport, applications such as real-time video conferencing can be much more easily accessible.



Asus A7M266

With DDR support, this AMD motherboard is your best bet for bandwidth-heavy applications such as image editing and performance gaming

One of the best solutions available for the AMD Athlon and Duron processor based on the AMD761 chipset, ASUS A7M266 board is built to complement the power of the CPU. This was otherwise an issue since the clock speeds were increasing with every passing week but the bottlenecks were the chipsets controlling the memory subsystems onboard. This board delivers just the solution to the power users who are going in for the fastest Athlon 1.4 or the Duron with DDR RAM support.

+ Four PCI slots
+ DDR RAM upgradeable to 2 GB
Price: Rs 13,000
Contact: Rashi Peripherals
Phone: 022-8260256-59
Fax: 022-8221012
E-mail: ho@rptechindia.com
Reviewed in: October 2001

Worthy Mentions

ASUS A7 Pro

+ Very good memory bandwidth scores
+ Very stable even after over-clocking
Price: Not available
Contact: Rashi Peripherals
Phone: 022-8260256-59
Fax: 022-8221012
E-mail: ho@rptechindia.com
Reviewed in: March 2001

Soltek SL75KV2

+ Stable with good performance scores
+ Feature-rich content (includes Norton Ghost 2000, Norton AntiVirus 2000 and WinFax)
Price: Not available
Contact: Rank Data Products
Phone: 022-3873168
Fax: 022-3866308
E-mail: rankdata@vsnl.com
Reviewed in: March 2001

PREVIOUS WINNERS 2000: ASUS A7M 1999: NA 1998: NA

MOTHERBOARDS (INTEL)

This year saw the arrival of 2GHz processors from Intel along with a slew of supporting chipsets. The 400 MHz FSB speed introduced with the Pentium 4 witnessed the opportunity to greatly increase bandwidth between the processor, system memory and chipset. Incorporating support for the newest protocols such as DDR and RDRAM memory have driven board performance levels to new highs.

Be on the watch for marked improvements in memory support speeds, particularly those for an upcoming technology called Quad-Rate DRAM which pumps out data four times per clock cycle. A new iteration of the PCI bus, PCI-X provides over 1GBps of bandwidth. In the future, Intel's Third Generation I/O interconnect will see bus speeds shoot through the roof. With increasingly higher levels of component integration on motherboards, performance numbers are sure to go up. Needless to say, new CPUs from Intel will be the driving force for better and faster motherboards in the future.



ASUS P4T

Outstanding performance, rock solid stability and excellent build quality make this board the choice for Pentium 4 based systems

Its great features and excellent build quality bundled with the capability of being over clocked makes it overtake the rest of the competition very easily. The construction and the attention to detail also make this board a very good choice, providing for effortless system construction. With very stable performance in all the tests, this board provides the ideal platform for your Socket 423 Pentium 4 processor.

- + Highly overclockable and very stable
- + Comes with 16 multiplier settings
- Price: Not available
- Contact: Rashi Peripherals

Phone: 022-8260256-59
Fax: 022-8221012
E-mail: ho@rptechindia.com
Reviewed in: March 2001

Worthy Mentions

AOpen AX4T

- + Plenty of system monitoring functionality built into the board
- + Very good construction and layout of the board make for easy processor installation
- Price: Rs 9,250
- Contact: Yogi Comp
- Phone: 022-8806582
- Fax: 022-8806582
- E-mail: yogicomp@netcracker.com
- Reviewed in: September 2001

Intel Tehama D850GB

- + Very stable performance
- + Roomy layout of system components
- Price: Rs 10,500
- Contact: Nebula Technologies
- Phone: 022-6347158/9
- Fax: 022-6347156
- E-mail: sandip@nebulatech.com
- Reviewed in: March 2001

PREVIOUS WINNERS 2000: ASUS CUV4X 1999: NA 1998: NA

MP3 PLAYERS

Early MP3 players based upon Flash memory were not only expensive, but also didn't have the space to store a good amount of songs. Though memory became cheaper, new ways of playing back MP3 songs were devised. CD-based players offered not only a lower-cost MP3 solution, they also provided for many times the amount of storage space. Things got even better when a hard disk was substituted for Flash memory. The result? Gigabytes of your favourite tunes at your fingertips.

As the footprint for higher storage capacities continues to diminish, we can look forward to gigabytes of song data that fits into your pocket. With added support for standards such as MP3Pro and Ogg Vorbis, you will be able to store even more data for an endless array of music. Beyond this, the use of wireless technologies has shown promise to access files over the Internet. Such technology would allow for players to shrink from CD-player size to that of a cell phone, but would entail wireless connection costs.



Creative Nomad II MG

A sleek, stylish and compact unit with skip-free music playback, which can be upgraded to add more playtime

This cool baby is the sleek and suave power accessory for those who are happier with small and feature-filled packages that suit their style. Great build quality, a nice interface, good audio transfer speeds, support for WMA format and a very utilitarian software bundle is what makes this MP3 player stand out from the rest of the pack.

- + Impeccable build quality
- + Good looks, features and bundled software
- Price: Rs 19,110
- Contact: Compuage Infocom Ltd

Phone: 022-8305500
Fax: 022-8238619
E-mail: info@compuageindia.com
Reviewed in: August 2001

Worthy Mentions

Creative Nomad Jukebox

- + Mammoth 6 GB storage capacity
- + Replete with features (quad channel outputs, EAX)
- Price: Rs 23,400
- Contact: Compuage Infocom Ltd
- Phone: 022-8305501/02/03
- Fax: 022-8238619
- E-mail: info@compuageindia.com
- Reviewed in: August 2001

Philips eXpanium

- + Great value for money
- + Very portable, plenty of storage capacity
- Price: Rs 12,990
- Contact: Philips India Ltd
- Phone: 022-6912333
- Fax: 022-8259276
- Reviewed in: August 2001

PREVIOUS WINNERS 2000: Creative Nomad II 1999: NA 1998: NA

POINTING DEVICES

Rodent-like devices that have been around for a number of years have gone through a countless number of improvements. Comfort, utility and design are the key issues tackled by peripheral device makers. More recently, sensitivity has been the primary concern as the need for a more responsive and fluid means of 'pointing' have been in greater demand. Whether you are a gamer, a designer or a casual user, there is a mouse specifically designed for your hand.

From its inception, the pointing device has aimed to be an extension of one's hands. Not too far from now, we might just have to take that statement literally. Research is underway to create a device that senses eyeball movements to track the pointer. Such an innovation will virtually eliminate any physical intervention at all, not to mention that dastardly condition called Carpel Tunnel Syndrome. If you feel sensing eye movements is a bit too obtrusive, you might want to use a pointing device that fits like a glove. All of this nifty technology is coming to you in the near future.



Logitech Cordless MouseMan Wheel

The mouse equivalent of a Swiss Army knife: with its contoured shape and soft-touch sides, the Cordless MouseMan Wheel provides easy scrolling from anywhere near your computer

This device is a great buy if price is not an issue. The mouse features good accuracy, nice grip and the freedom of not being tied down proves to be an added comfort. The scroll button, in conjunction with the bundled application software, makes this mouse highly configurable and very easy to use over a range of applications.

+ 'No wires' cordless technology
+ Very comfortable
Price: Rs 4,500
Contact: Rashi Peripherals

Phone: 022-8260256-59
Fax: 022-8221012
E-mail: ho@rptechindia.com
Reviewed in: July 2001

Worthy Mentions

Microsoft Intellimouse Explorer

+ Very accurate optical sensor technology
+ Good build quality
Price: Rs 3,250
Contact: Mnemonic Systems
Phone: 022-8010871
Fax: 022-8051761
E-mail: mnemonic@vsnl.com
Reviewed in: July 2001

Logitech MouseMan Wheel Optical

+ Excellent packaging
+ Good customisation through MouseWare
Price: Rs 2,900
Contact: Rashi Peripherals
Phone: 022-8260256-59
Fax: 022-8221012
E-mail: ho@rptechindia.com
Reviewed in: July 2001

PREVIOUS WINNERS 2000: Microsoft Intellimouse Eye 1999: Logitech Trackman Marble FX 1998: Logitech Trackman Marble FX

PROCESSORS

If any one component has been particularly blessed this year, it's got to be the CPU. We have to thank both AMD and Intel for the hearty competition; if it were not for them, gigahertz computing could not have been a reality today. Each CPU maker has highlighted various techniques used in squeezing the most performance out of their designs. Shrinking the chip, optimising its architecture and packing in as many transistors as possible have pushed performance to its limits.

If you think CPUs are fast now, just wait and see what's in store for the future. In 2002, 64-bit processors from Intel and AMD will gain greater penetration into the market and chips available today will scale towards the 3 GHz barrier. New developments in technology have allowed the big players to announce their plans to achieve 10 GHz clock speeds in the next few years. Who ever knew supercomputers could fit on desktops?



Intel Pentium-4 2 GHz

Be it multimedia, professional video and imaging applications or just pure gaming, the Pentium 4, 2 GHz packs a mean punch

Sporting a new packaging and an even greater pin density (up to 478 pins from the original 423), this processor packs the punch needed for any type of application you might want to throw at it. With a 400 MHz effective bus speed, 256K of L2 cache, and with the support of the high-bandwidth RDRAM, it makes for some real fast performance, be it gaming, multimedia applications or bandwidth-hungry audio and video applications.

+ Trailblazing performance
Price: Rs 25,217
Contact: Nebula Technologies
Phone: 022-6347158/59

Fax: 022-6347156
E-mail: sandip@nebulatech.com
Reviewed in: November 2001

Worthy Mentions

Pentium 4-1.8 GHz

+ Very good performance in multimedia and gaming applications
+ Good choice, especially for audio and video editing
Price: Rs 12,000
Contact: Nebula Technologies
Phone: 022-6347158/9
Fax: 022-6347156
E-mail: sandip@nebulatech.com
Reviewed in: October 2001

AMD Athlon 1.4GHz

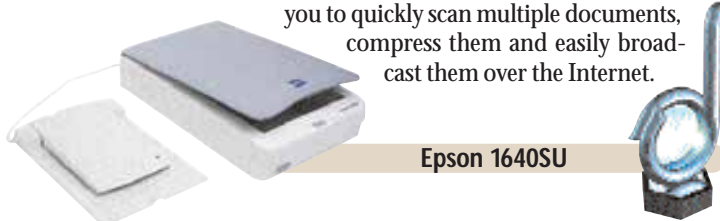
+ Impressive real world performance
+ Very good pricing
Price: Rs 8,450
Contact: Zeta Technologies
Phone: 022-4102288
Fax: 022-4102277
E-mail: tejas@zetaindia.com
Reviewed in: October 2001

PREVIOUS WINNERS 2000: Intel P-III 1 GHz 1999: NA 1998: NA

SCANNERS

Scanners have come a long way since those clunky handheld monochrome models that first graced our work spaces. Today, full-colour, high-resolution scans are easily accessible for home users. Colour depths in excess of 24 bits are used in order to reproduce the accuracy of the scan and thanks to the shift from a parallel port interface to USB, scanning speeds have witnessed a boost.

The future of scanners looks bright with the advances in technology and useability. Further improvements in bit-depths and resolutions are on the horizon. In addition, look out for faster interface standards such as FireWire. For those with particularised needs, look-out for scanning solutions which feature a typical scanner bundled with special hardware and software to maximise scanning abilities in a particular field. As an example, a Web publishing scanning solution can include a flatbed scanner, a multipage feeder and compression software that allows you to quickly scan multiple documents, compress them and easily broadcast them over the Internet.



Epson 1640SU

Combines a stunning colour reproduction with a great speed

This is an excellent printer for office use and for desktop publishing because of its lightning speed and impressive image quality, whether it is a colour image or a mono text. It is a snap to use with its bundled software. The moment you put a target for scanning, the TWAIN driver automatically identifies it to be either a document or an image, and scans it at the appropriate resolution and colour depth. This feature is especially beneficial for new users who may not understand the intricacies of resolution and colour depth.

+ Very fast preview time
+ Excellent image reproduction
Price: Rs 22,500
Contact: Epson India Ltd

Phone: 080-5321266-70
Fax: 080-5581799
E-mail: sheetal@eid.epson.co.in
Reviewed in: June 2001

Worthy Mentions

HP Scanjet 5300

+ Excellent build quality
+ Good bundling of supporting applications
Price: Not available
Contact: Hewlett-Packard India Ltd
Phone: 011-6826000
Fax: 011-6826030
E-mail: princy_bhatnagar@hp.com
Reviewed in: June 2001

Epson 1240U Photo

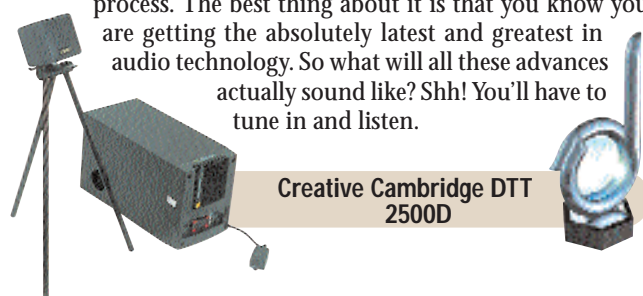
+ Good scanning resolution (1200 x 2400 optical)
+ Transparency scanning capabilities
Price: Not available
Contact: Epson India Ltd
Phone: 080-5321266-70
Fax: 080-5581799
E-mail: sheetal@eid.epson.co.in
Reviewed in: June 2001

PREVIOUS WINNERS 2000: Microtek ScanMaker 4 1999: AGFA DuoScan T1200 1998: AGFA SnapScan

SPEAKERS

An immersive experience is the key as the focus continues to be on digital audio. Stereo sound provides a field of sound in front, but multichannel audio provides sound from all directions, which is very close to a real-world audio experience. The importance given to audio stems from the need to immerse oneself whether it be gameplay, movie watching or just enjoying music. The focus on creating a real-world environment is witnessed today with more and more high-end speakers being available for the PC.

Audio standards demand support for more channels, and you can be sure that this will be reflected in PC audio. Adopting standards in PC hardware is a relatively easy and quick process. The best thing about it is that you know you are getting the absolutely latest and greatest in audio technology. So what will all these advances actually sound like? Shh! You'll have to tune in and listen.



Creative Cambridge DTT 2500D

Speakers that are capable of giving you sound at its crispest best—virtual reality for sound

When it comes to Dolby Digital compliance in your home, the Cambridge DTT2500D speakers have what it takes. With six discrete channels coupled with a Dolby Digital multi-channel amplifier, this system can give you a very immersive experience. With its sheer power and sound quality this surround speaker set makes a great buy for the avid gamer, music lover, or movie buff.

+ Amazing surround sound quality, S/PDIF support
+ Crystal clear satellites and distortion-free subwoofer

Price: Rs 28,000
Contact: Compuage Infocom Ltd
Phone: 022-8305500
Fax: 022-8238619
E-mail: info@compuageindia.com
Reviewed in: August 2001

Worthy Mentions

Logitech xtrusio DSR100+

+ Clear choice for 3D gaming setup
+ Power-packed subwoofer
Price: Rs 12,000
Contact: Rashi Peripherals
Phone: 022-8260256-59
Fax: 022-8221012
E-mail: ho@rptechindia.com
Reviewed in: August 2001

Creative FPS1000

+ Clear satellites
+ Competitively priced
Price: Rs 4,680
Contact: Compuage Infocom Ltd.
Phone: 022-8305500
Fax: 022-8238619
E-mail: info@compuageindia.com
Reviewed in: August 2001

PREVIOUS WINNERS 2000: Creative Desktop Theater 5.1 DTT2500 1998: Creative Microworks 1999: NA

3D AUTHORIZING SOFTWARE

Working with 3D software has always been difficult as the learning curve has been rather steep. During the past year, we've seen that developers have focussed on this point and the newer packages available today have become extremely simple to use. The various features and capabilities have been made more intuitive. Infusing easy-to-use animation capabilities and filter effects, and extending the software's functions so that you have tools that make it easier to create 3D models have definitely eased things. All this has made it possible for one to concentrate on the work rather than spend time and effort in first learning how to operate the software.

One profound improvement added in 3D authoring software is the extensive animation capability. Greater realism is the catch phrase for the future. Whether it is the generation of digital hair, or the fluid motion of virtual characters and ultra-realistic textures, 3D authoring software today can do it all.

There will continue to be improvements on this front as processing speeds go higher and 3D engines incorporate the features of a new generation of graphics cards.



3D Studio Max R4

A well-integrated toolbar that can be highly customised to render excellent quality 3D models and animations

This application gets top honours because of its great tool integration and uncomplicated interface. It incorporates new features such as improved rendering and modelling options and an improved compositing tool. There are new character animation functions and powerful animation and environmental effects that make it simple to design even a complex sequence of movement. All this adds up to make it the tool of choice for designers and animators.

- + Extremely easy to use
- + Provides great animation and modelling capabilities

Price: Rs 1,41,000

Contact: Autodesk

Phone: 022-6952000

Fax: 022-8397337

Web site: www.autodesk.com

Reviewed in: March 2001

Worthy Mentions

Maya3D

- + Many plugins available
- + Ideal for professional use

Price: NA

Contact: TATA Elxsi

Phone: 080-8360223/92

Fax: 080-8259701/68

Web site: www.aliaswavefront.com

Reviewed in: March 2001

LightWave6

- + Outstanding modelling capabilities

Price: Rs 1,30,000

Contact: Shaf Broadcast

Phone: 022-8753709

Fax: 022-8728551

Web site: www.newtek.com

Reviewed in: March 2001

PREVIOUS WINNERS 2000: NA1999: 3D Studio Max 2.5
1998: Autodesk AutoCAD R14

ACCOUNTING SOFTWARE

Accounting software has come a long way from the old DOS-based applications just supporting the basic data entry and reporting into a totally GUI-based user interface. These software today have the capability of creating and generating loads of reports ranging from a simple cash/bank book to MIS level reports—all with just a few clicks.

Home users now have tools that help them calculate their taxes and returns thereby making their year-end account closing easier. It's a breeze to manage stocks and shares and calculate earnings with these packages. With features such as online representation of figures by way of graphs and multi-level reporting, accounting software has become a powerful financial tool for home as well as corporate users.



FACT 1.9



With the capability to provide users an option for branch level accounting as well as inventory, it can be customised for personal as well as SOHO segment use

This powerful number-crunching software is packed with features that suit not only home users but also companies with offices in multiple locations. It has an easy-to-use interface and user level security. The software comes along with detailed documentation and using it is easy, even for a novice. Apart from the regular features, it also includes an excellent graphical user interface, and can be used by multiple users.

- + Extensive features
 - + Good reporting capabilities
- Price:** Rs 14,500
Contact: Vedika Software

Phone: 022-5006490
Fax: 033-2400824
E-mail: info@vedika.com
Reviewed in: June 2001

Worthy Mentions

EX Next Generation 1.5

- + Good data security
 - + Small software installation
- Price:** Rs 9,500
Contact: Tata Consultancy Services

Phone: 022-8774081

Fax: 022-8777441

E-mail: jaideep_mudholkar@mumbai.tcs.co.in

Web site: www.tcs.com

Reviewed in: June 2001

Wings 2000 Pro

- + Supports multiple languages
- Price:** Rs 18,000
Contact: Wings Infonet

Phone: 040-3211458

Fax: 040-3237318

E-mail: info@wings2000.com

Web site: www.wings2000.com

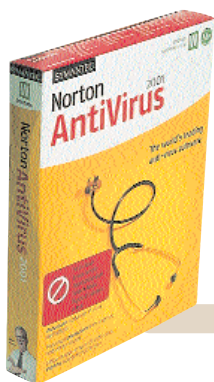
Reviewed in: June 2001

PREVIOUS WINNERS 2000: NA 1999: Wings for Windows
1998: EX Next Generation 1.0

ANTI-VIRUS SOFTWARE

We know that the viruses are getting resilient and insidious and are wreaking more havoc—the real trick lies in updated, robust protection. Anti-virus software have evolved greatly over the past year to tackle the ever increasingly complexity of newer threats to your data, whether through e-mail, files or even through unshielded network connections. One of the most persistent threats that we've seen has been in the form of Trojans and worms that have been spreading through malicious e-mails. Anti-virus software have evolved to tackle these threats effectively or at least protect your computer against them.

Viruses will continue to propagate primarily over the Internet. Every year the amount of data and time lost due to viruses continues to increase. The amount of bandwidth consumed by most of the new viruses that use the Internet to propagate is also considerable. The latest worms take advantage of flaws in software to infect PCs through Web browsers, mail clients and now even via instant messengers. The only advice that we have for the future is: stay paranoid.



Norton AntiVirus 2001



Simple wizards for most common tasks and the ability to automate tasks help take virus worries off your mind

NAV 2001 has an excellent cleaning and detection rate. The Auto-Protect feature runs in the background and detects viruses in attachments before they can do damage, while LiveUpdate ensures that you have the latest definitions and patches installed. Increased protection comes to you with SmartScan, which scans all file types for malicious code and Script Blocking, which specifically monitors JavaScript and ActiveX components.

+ Simple wizards for most common tasks
+ High detection and repair rates
Price: Not available
Contact: Tech Pacific

Phone: 022-5960238
Fax: 022-5961012
Web site: www.symantec.com
E-mail: info@bom.nand.com
Reviewed in: June 2001

Worthy Mentions

AVG Free Edition

+ Good detection rate
+ Free for use
Price: Free for download
Web site: www.grisoft.com
Reviewed in: June 2001

McAfee 5.1

+ User friendly interface
+ Script blocking facility
Price: Not available
Contact: Network Associates
Phone: 022-6935278
Fax: 022-6147078
Web site: www.mcafee.com
Reviewed In: June 2001

PREVIOUS WINNERS 2000: Norton AntiVirus 2001 1999: McAfee Virus Scan 4.0
1998: Norton AntiVirus 5.0

BROWSERS

Over the past year all popular browsers have matured from being just a window to the World Wide Web towards becoming consolidated Internet communication suites with hefty mail clients, integrated messaging clients. There are new rendering engines that include support for the latest Web standards and increased security against worms and Web bugs. Also included are a lot of additional goodies such as an instant messenger, e-mail client, password managers, search engines and even integrated players to allow you to view streaming videos.

It is still unclear what impact .Net is going to have on the Internet, but it is likely to play an important role in the evolution of the browser. Support for Java, which has gained considerable popularity over the last couple of years, has become a bone of contention since Microsoft has decided not to integrate it into IE 6. Since Microsoft's IE is the most popular browser by

a considerable margin, most Web developers will tend to write code specifically for it. This will mean a further deviation from the WWW consortium's standards.



Netscape 6.1



A feature-rich browser that loads up quickly, promises faster surfing and at the same time provides you with some good utilities

With the arrival of the new version 6.1 of their browser, Netscape can now try to make up ground they had lost to the competition not only in market share but also in terms of features and appearance. The new version eliminates most of the quirks that plagued Netscape 6.0. It includes the new Mozilla engine, which is considerably faster at rendering pages and uses significantly less memory. The browser's performance has improved across all parameters and it is now replete with features, is easier to use and has the most options for customisation.

+ Loads up quickly and is stable
+ Pleasant interface and excellent searching capabilities

Price: Free for download
Contact: Netscape
Web site: www.netscape.com
Reviewed in: October 2001

Worthy Mentions

Internet Explorer 6

+ A wealth of features; extremely customisable
+ Less vulnerability to worms and viruses
Price: Free for download
Contact: Microsoft
Web site: www.microsoft.com/ie
Reviewed in: October 2001

Opera 5.12

+ Low on system resources
+ Supports multiple browsing in a single window
Price: Free for download
Contact: Opera Software
Web site: www.opera.com
Reviewed in: October 2001

PREVIOUS WINNERS 2000: Internet Explorer 5.5 1999: NA 1998: Opera

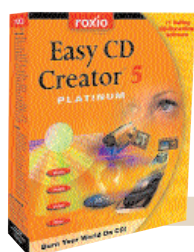


CD WRITING SOFTWARE

There was a time when the only way you could back up and transfer data to another location was through a floppy. This meant that either the capacity of the floppy became a limitation or you had to adopt a proprietary solution like Iomega's Zip drive, which created other issues. The advent of CD-Rs and CD-RWs has solved this problem for most requirements. But working with CD-writers requires the right kind of software. There are a variety of CD writing software that cater to a wide variety of needs, from the do-it-all CD authoring suites such as Easy CD Creator, to other programs which are best suited to performing specific tasks such as CD-to-CD copy, Audio/Video CD writing, Disk image burning, etc.

With more emphasis being laid on a wider support for all the available writers, you can expect to buy almost any CD Writer and start burning. Further on there will be integrated support for detection of newer media formats.

Also, with the arrival of Windows XP, which brings along with it integrated support for CD Writing from within Windows Explorer, it remains to be seen whether stand-alone CD Writing suites will be able to make it on their own.



Easy CD Creator 5 Platinum



This is probably the most extensive software of the lot with many interesting built-in features

This software supports the maximum number of CD Writers and includes several new tools that make it easier to create picture albums, audio CDs and video CDs. The wizard too has been improved significantly and has made the process of writing much simpler. Also included is a new authoring tool for MP3s and support for WMA. All this is in addition to the ability to backup regular data with the simple Explorer style interface, which has drag-and-drop support.

- + Spectacular feature list
- + Extremely simple interface

Price: Not available
Contact: Roxio
Web site: www.roxio.com
Reviewed in: May 2001

Worthy Mentions

Nero Burning ROM 5.5

- + Provides wizards
- Price:** Free for download
- Contact:** Ahead Software
- Web site:** www.ahead.de/en/index2.htm
- Reviewed in:** May 2001

Easy CD Creator 4 Deluxe

- + Very simple drag-and-drop capabilities
- Price:** NA
- Contact:** Roxio
- Web site:** www.roxio.com
- Reviewed in:** May 2001

PREVIOUS WINNERS 2000: NA 1999: NA 1998: NA

DVD PLAYBACK SOFTWARE

When it comes to sheer image and audio clarity of movies, there's nothing that comes close to a DVD. In fact, the primary use of a DVD drive, the prices of which have been doing a freefall, is for enjoying movies. DVD playback software of today tap into the new features and enhancements in today's processors and 3D graphics cards, allowing you to watch full-motion DVD video on your home computer. This allows the software to handle external hardware that supports Dolby Digital audio, HDTV screens, etc.

We can look forward to plenty of added functionality to DVD playback software in terms of support for newer standards such as Dolby Digital, HDTV, etc. Also, since DVD players will become mainstream in the coming year, DVD playback functionality will be integrated into operating systems directly. With greater amounts of processing power available, there could also come a time when Dolby Digital decoding could be implemented in the DVD playback software itself with no need for special external hardware such as AC-3 decoders. Maybe the next movie you watch with all its multi-channel splendour will be due to the advanced functionality built into these software.



Intervideo WinDVD 2000



Advanced control of your DVD movies and a skinnable interface make this software a brilliant choice

With a host of very advanced DVD control and playback features, this DVD playback software sets a new standard in this category. It has support for advanced features such as iDCT, Motion Compensation and multi-channel audio. It also has a skinnable interface, allowing you to download skins and change its outlook altogether. A feature-packed interface makes this software the player of choice when it comes to watching DVD movies.

- + Support for advanced DVD control features
- + Skinnable interface

Price: Not available
Web site: www.intervideo.com

Worthy Mentions

PowerDVD 2.55

- + Multi-channel audio support
- + Skinnable
- Price:** Not available
- Web site:** www.gocyberlink.com

Ravisent Cinemaster 2000

- + Very robust DVD decoding capabilities; skinnable
- + Compatible with a wide range of DVD drives
- Price:** Not available
- Web site:** www.ravisent.com

PREVIOUS WINNERS 2000: NA 1999: NA 1998: NA

FIREWALL

With Internet usage going up, both for dial-up users and for those who have access to broadband and cable Internet services, the susceptibility to hackers will also go up. Thus it becomes imperative for those who are hooked on to the Net to install a firewall which protects against Trojans and other tools used by hackers.

Using a personal firewall software nowadays is easy. All you have to do is run the installer and in a few minutes the applications will warn you about possible vulnerabilities on your system and block any intrusions that you might otherwise be oblivious to.

Firewalls are going to be a very critical component of computers due to the proliferation of Internet-based threats. Therefore, more and more operating systems are going to integrate some form of a Firewall directly into the operating system. On the enterprise front, Firewalls are going to evolve into much more robust applications that could even use heuristics and some form of artificial intelligence.



Zone Alarm Pro 2.6



This firewall offers the best combination of protection and ease of use

This software performed well in all parameters. Though it did not have support for ActiveX controls, it had a good set of features which protect the PC from Trojans, automatically block known and unknown threats from the Internet, and also prevent hackers from stealing your data by making you invisible to them. What's also important is that this software is relatively easy to install, configure and manage even for a novice.

- + Extremely easy to configure
- + Provides good protection

Price: Free for download
Contact: Zone Labs
Web site: www.zonelabs.com
Reviewed in: June 2001

Worthy Mentions

Norton Personal Firewall 2001

+ Provides good security and protection from intruders
Price: Not available
Contact: Tech Pacific
Phone: 022-5960238
Fax: 022-5960102
E-mail: adil@techpacificindia.com
Web site: www.symantec.com
Reviewed in: September 2001

eSafe Desktop

+ Has its own integrated anti-virus scanner
+ Free for personal use
Price: Free for personal use
Contact: Aladdin Knowledge Systems
Web site: www.esafe.com
Reviewed in: September 2001

PREVIOUS WINNERS 2000: Norton Personal Firewall 2000 1999: NA 1998: NA

IMAGE EDITING SOFTWARE

Image editing software is one area where developers have focussed on adding more functionality to make it easier for designers to work. The inclusion of support for vector images now puts them into a space that was earlier occupied by specialised software for illustration. In addition to providing newer filters that we have come to expect, certain packages like Photoshop have managed to improve on an already impressive feature set. Traditional image editors continue to improve on their ability to manage text effectively and are adding support for newer file formats. The latest releases from Adobe include tools that make it easier to create optimised output for the Web also.

All this indicates a consolidation of sorts taking place amongst image editing suites over the next couple of years. This would mean that a designer, instead of having to switch between different packages to perform specific tasks, would now be able to use a single suite to perform the complete range of tasks. Furthermore, tools for designers will offer features that make it easier to collaborate.



Photoshop 6.01



Photoshop is now the best image editing software for both print and Web output

Photoshop 6.01 is an extremely powerful package for graphic designers. It is extremely easy to use, has a huge list of filters to enhance images and now has support for vector objects, which makes it the best solution for digital image editing. Other nice touches are the improved layer management, a new Styles palette that lets you reuse preset special effects, some collaboration-friendly features, and the vastly improved text handling.

+ Better layer management; simpler text controls
+ Includes vector support
Price: Rs 39,456
Contact: Adobe Systems (I) Pvt Ltd

Phone: 0118-4532026
Fax: 0118-4532010
E-mail: sandeepm@adobe.com
Web site: www.adobe.com
Reviewed in: October 2001

Worthy Mentions

JASC Paintshop Pro 7

+ Can generate animations
+ Good set of filters
+ Competitively priced
Price: Rs 5,995
Contact: The Bird Group
Phone: 011-3329199
Fax: 011-6142999
E-mail: alpana.chaturvedi@the-birdgroup.com
Reviewed in: October 2001

Gimp 1.2 Windows

+ Provides good functionalities with regard to image editing capabilities
+ Free for use
Price: Free for download
Contact: Gimp
Web site: www.gimp.org
Reviewed in: October 2001

PREVIOUS WINNERS 2000: NA 1999: Adobe Photoshop 5.0 1998: Adobe Photoshop 5.0

LINUX DISTRIBUTIONS

In the past three years more and more people have been trying out Linux on the desktop, driven primarily by the large number of free productivity and entertainment applications that have been appearing for Linux, which are as easy to use as their Windows counterparts. Distributions such as SuSe, Mandrake and Caldera's e-Desktop are designed to appeal to desktop users as an alternative to Windows. While Linux is still far from being accepted as a substitute for Windows for the majority of people, these new versions of Linux are much easier to install and configure than in the past. Desktop environments such as KDE and Gnome provide users with a familiar Windows-like GUI, while the basic operating system continues to evolve and offer much better hardware compatibility, amongst other things.

Installing Linux on your PC has become so simple that in some cases it is actually easier than installing Windows 98. As support for new hardware continues to grow and an increasing number of serious applications and games appear, Linux will continue to

become a friendlier option for Desktop PC users. The arrival of Windows XP, which provides an even friendlier interface built upon a more stable core, will provide a huge challenge.



SuSE Linux 7.2 Professional

With a plethora of bundled applications, SuSE makes installation and usage very easy

This distribution builds on the stability of the basic OS itself and adds a whole lot of programs such as Office productivity applications, media editing and viewing tools, plenty of games, and the impressive Star Office suite. In addition, SuSE really stands out because of its excellent set of manuals that make it very simple to use.

+ Large number of usable packages
+ Easy installation
Price: Rs 2,000
Contact: GT Enterprises
Phone: 080-6606093

Fax: 080-6671407
E-mail: gtcldrom@vsnl.com
Web site: www.suse.com
Reviewed in: August 2001

Worthy Mentions

Red Hat Linux 7.1

+ Good hardware detection and application set
Price: Rs 5,650
Contact: GT Enterprises
Phone: 080-6606093
Fax: 080-6671407
E-mail: gtcldrom@vsnl.com
Web site: www.redhat.com
Reviewed in: August 2001

Mandrake Linux 8.0

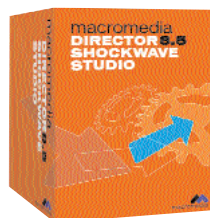
+ Good set of window managers to choose from
Price: Rs 1,750
Contact: GT Enterprises
Phone: 080-6606093
Fax: 080-6671407
Reviewed in: August 2001
E-mail: gtcldrom@vsnl.com
Web site: www.linux-mandrake.com

PREVIOUS WINNERS 2000: SuSe Linux 6.4 1999: Red Hat Linux 6.0 1998: NA

MULTIMEDIA AUTHORIZING TOOLS

With the increasing popularity of CDs as a medium of distribution for interactive presentations, and with the growing popularity of animated content on Web sites and other media, multimedia authoring applications have grown to accommodate a greater number of formats and very tight integration with the Internet. New versions of software incorporate intuitive interfaces and increased WYSIWYG capabilities. This ensures that users can concentrate on exercising creativity instead of having to master a steep learning curve. Developments in multimedia authoring tools seem to have followed a pattern similar to what we saw in the case of image editing software. Macromedia Director dominates the category. With the integration of Shockwave, Director has become much more Web friendly and also continues to include support for newer formats such as 3D elements.

Watch for 3D animations, which will play an important role in the future with support for more formats and better integration of 3D elements.



Macromedia's Director 8.5 Shockwave Studio



A versatile multimedia content production tool that lets you create CD-ROMs, kiosk-based presentations, and Shockwave movies for the Internet

Macromedia's Director can import almost any type of element, whether it is text, animation, images or video. It has almost become the *de facto* standard when it comes to multimedia application development and also has robust scripting capabilities. The latest version opens itself up by extending support to 3D objects.

+ Powerful scripting capability and better compression tools for the Web
+ Support for 3D objects and behaviours
Price: Rs 47,950
Contact: Wipro Infotech

Phone: 080-8440011
Fax: 080-8440187
E-mail: surajs@wipro.co.in
Web site: www.wipro.com
Reviewed in: September 2001

Worthy Mentions

Macromedia Flash 5

+ Allows layer-based animation
+ Support for XML extends functionality
Price: Rs 19,150
Contact: Wipro Infotech
Phone: 080-8440011
Fax: 080-8440187
E-mail: surajs@wipro.co.in
URL: www.wipro.com
Reviewed in: September 2001

Adobe Live Motion 1.02

+ Provides a good set of filters
+ Custom animation is possible
Price: Rs 17,765
Contact: Adobe Systems (I) Pvt Ltd
Phone: 0118-4532026
Fax: 0118-4532010
E-mail: sandeepm@adobe.com
Web site: www.adobe.com
Reviewed in: September 2001

PREVIOUS WINNERS 2000: NA 1999: NA 1998: Macromedia Director 6.0



OCR SOFTWARE

For a paperless office to become a reality, one needs to convert a large amount of printed data into a digital format. This is where OCR software steps in. In the past year, while there have not been that many advancements in the look and feel and features offered by OCR software, there has been a marked improvement in the accuracy of these software in scanning and converting printed matter into an editable digital format.

Like speech recognition, OCR software is going to become increasingly faster and accurate when working with printed documents. The software is going to evolve to recognise an individual's handwriting. This will spawn a whole new generation of devices incorporating advanced OCR capabilities. The next time you need to take notes, you may well be scribbling them on your handheld device, ready to be ported to any digital format you might want to convert it to. It looks like the keyboard is going to be on its way out!



Fine Reader 5.0 Pro



Accuracy and affordable cost make this OCR software stand out

This software featured the distinction of speedy performance along with the capability of recognising even the finer elements of printed text such as superscripts and other smaller details such as symbols and punctuation characters. It also excelled in maintaining the layout of other elements on the scanned pages such as pictures and formatting elements.

- + Retains layout
- + Reasonably priced
- + Good accuracy

Price: Not available
Contact: Vikmans Multimedia
Phone: 011-6472325
E-mail: manish@vikmans.com
Web site: www.abbyy.com
Reviewed in: July 2001

Worthy Mentions

Text Bridge Pro Millennium

+ Plenty of text recognition features
Price: Rs 3,700
Web site: www.scansoft.com
Reviewed in: July 2001

Newssoft Presto! OCR Pro 4.01

+ High detection rates over a range of print media
Price: Rs 4,700
Web site: Newssoftinc.com
Reviewed in: July 2001

PREVIOUS WINNERS 2000: NA 1999: NA 1998: NA

OFFICE SUITES

Office suites haven't changed too much since the basic components are still word processors, spreadsheets, presentation tools and PIM applications. What has changed considerably, however, is the level of integration between these programs. Office suites, which were initially just a collection of applications that were bundled together to offer greater value in offices, are now a basic requirement for every computer user. Another addition has been the inclusion of support for publishing information on the Internet. With the consolidation of programs such as contact managers, word processors and databases applications, these office suites help us accomplish tasks more efficiently.

With the competition from vendors such as Lotus and Corel diminishing every year, it is not likely that we are going to see any dramatic new features in the near future. There will be subtle refinements in the usability of the software, improvements in the publishing and printing options and support for XML in particular. Another important feature that might gain significance later is wider implementation of Smart Tags, which are supported by Office XP.



Microsoft Office XP (Standard)



Whether it's recovering documents or applying different formatting styles, the Task Pane makes working with this software painless

Microsoft Office XP scores in the sheer numbers of features that it offers. With the addition of Smart Tags, problems regarding formatting in the earlier versions have been resolved. The Task Pane adds another window to the interface and displays information related to the task that you are performing. Office XP has improved collaborative features. It also integrates tightly with the Web and other Microsoft applications.

+ Text-to-speech capability
+ Task Pane and Smart Tags makes working easier
Price: Rs 20,500
Contact: Microsoft Corporation

India Pvt Ltd
Phone: 011-6294600
Fax: 011-6292650
E-mail: msconnect@microsoft.com
Reviewed in: July 2001

Worthy Mentions

Lotus Smart Suite 9.6

+ Advanced document-tracking features
+ Extremely feature rich
Price: Rs 5,500
Contact: Lotus Development
Phone: 022-2322024
Fax: 022-2322026
E-mail: india@lotus.com
Reviewed in: July 2001

StarOffice 5.2

+ Free for use
+ Has a good style list
Price: Free for download
Contact: StarOffice
Web site: www.staroffice.com
Reviewed in: July 2001

PREVIOUS WINNERS 2000: Microsoft Office 2000 1999: Microsoft Office 2000 1998: Microsoft Office 97 Professional



PAGE LAYOUT SOFTWARE

Since the print publishing industry was amongst the early adopters of computers, page layout software tends to be higher on the evolution curve than other software. This is obvious from the fact that the new versions released this year had only some small refinements such as the inclusion of better image editing capabilities, filter effects and support for the Web. The improved integration with other technologies, especially the Internet, has led to the increasing use of page layout software to create hard-hitting and visually creative content, which can be directly used on the Web.

Adobe has already announced the launch of InDesign 2.0, which supports object transparency, long-document management options, one-step table creation and XML support. QuarkXPress 5, still in its beta stages, also promises to incorporate better importing capabilities and it also extends support for XML. Obviously, support for XML, which promises to become a standardised mode for the exchange of documents and data, is an important direction for the future.



Adobe InDesign 1.5.2



A slick and intuitive interface makes it simpler to use and several new features give it an added edge

Adobe InDesign won the war purely because of the improvements in functionality with the inclusion of tools such as the pen tool, eye-dropper, frame, selection, and drawing tools. It is now equipped with better import filters and also offers you a choice of multi-line or single-line composers, vertical text justification, extensive kerning options, and the ability to align text to any path and then manipulate it to create eye-catching effects.

+ Aesthetic interface and intuitive page layout capabilities
+ Good importing capabilities
Price: Rs 42,946
Contact: Adobe Systems (I) Pvt Ltd

Phone: 0118-4532026
Fax: 0118-4532010
E-mail: sandeepm@adobe.com
Web site: www.adobe.com
Reviewed in: November 2001

Worthy Mentions

QuarkXPress 4.1

+ Simple interface
+ Very light on system resources
Price: Rs 34,000
Contact: Quark India Pvt Ltd
Phone: 0172-254412
Fax: 0172-254414
E-mail: gprakash@quarkindia.com
Web site: www.quarkindia.com
Reviewed in: November 2001

Adobe PageMaker 7

+ Support for scripts and plugins
+ Good image editing capabilities
Price: Rs 26,500
Contact: Adobe Systems India Pvt Ltd
Phone: 0118-4532026
Fax: 0118-4532010
E-mail: sandeepm@adobe.com
Web site: www.adobe.com
Reviewed in: November 2001

PREVIOUS WINNERS 2000: Corel Ventura 8.0 1999: Corel Ventura 8.0 1998: Adobe PageMaker 6.5

PERSONAL INFORMATION MANAGERS

While managing time might have been low on the priority list of most people a while ago, it is of increasing importance in our hectic and always connected lives today. Gone are the days when one had to rely on one's own memory to store personal information about acquaintances. Personal Information Managers (PIMs) have become indispensable as they allow scheduling of important tasks in addition to storing all kinds of information that hitherto existed in the confines of personal diaries. PIMs now integrate with other applications and let you dial a phone number, send a fax or e-mail and more. This means that many of the mundane tasks are taken off the users hands.

Time management is critical given that most professionals today lead a highly connected life. However, collaboration will quickly become the key component that brings together the collage of applications that makes up a PIM. Old favourites such

as Lotus Organizer need to move towards facilitating closer interaction between applications and people if they are to remain popular.



Microsoft Outlook 2002



Tight integration between PIM, the e-mail client and other Office applications make this an ideal choice

The latest version of this PIM from Microsoft, which comes bundled with its Office XP suite, has excellent integration with the OS and other Office applications. Along with mail options, it also allows one to dial to mobile phones and land lines. The Address book has a neat way of sorting the contacts alphabetically. The package also includes features such as small notes and stickies, which cling onto Outlook but can also be moved to other applications and to the Windows Desktop.

+ Outstanding e-mail client; excellent collaboration tools
+ Extremely user friendly and functional
+ Nice integration with MS Office applications

Price: Rs 5,000
Contact: Microsoft Corporation India Pvt Ltd
Phone: 011-6294600
Fax: 011-6292650
E-mail: msconnect@microsoft.com

Worthy Mentions

Redbox 4.0

+ Some really interesting features such as colour templates and images in the address book
+ Ability to link various items from different fields
+ Wizards for Web publishing
Price: Rs 458
Contact: www.inklineglobal.net
Reviewed in: July 2001

Lotus Organizer 6

+ Visually appealing and feature packed
Price: Rs 3,680
Contact: Tech Pacific
Phone: 022-5960101
Fax: 022-5960304
E-mail: adil@techpacificindia.com
Reviewed in: July 2001

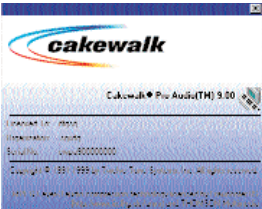
PREVIOUS WINNERS 2000: Microsoft Outlook 2000 1999: Lotus Organizer 4.5 1998: Lotus Organizer 4.01



SOUND EDITING (MIDI)

Sound editing software have been around for a while now but they've never been so easy to use and so full of features. With intuitive interfaces and more and more improvements incorporated in these software, home users and novices can get their musical fingers dancing on the features that were formerly available only at high-end music studios. Also, the processing power available on today's computers provides plenty of headroom to produce some very powerful and professional-sounding effects.

With the advent of seriously powerful processors on sound-cards, it will only become so much more easy to create rich-sounding audio tracks and produce home recordings. This increased power in the audio hardware will also be responsible for allowing more powerful audio effects and features to be implemented in audio sequencing software, be it hundreds of streams of audio data being handled simultaneously, advanced digital effects such as dynamic pitch bending, or multi-channel audio. The best thing of all is that audio editing tasks will be possible in real time.



Cakewalk Pro Audio 9



Good features and an easy-to-use interface make this the perfect choice for MIDI sequencing

One of the *de facto* standards in MIDI sequencing, Cakewalk Pro Audio 9 raises the bar when it comes to the features and advanced tools for working with MIDI files. Especially impressive is the ability to work with different views, which simplifies working with large and complex multi-track files, its audio effects and its ability to save as MP3. An intuitive and feature-rich interface makes this software the application of choice for professional as well as amateur users when it comes to MIDI sequencing applications.

- + Rich in features
- + Easy-to-use and intuitive interface

Price: Not available
Web site: www.cakewalk.com

Worthy Mentions

Cubase VST 5

- + Good features
- + Good plugin support
- Price: Not available
- Web site: www.steinberg.net

Evolution Audio

- + Onscreen keyboard
- + Small install size
- Price: Not available
- Web site: www.evolution.co.uk

PREVIOUS WINNERS 2000: NA 1999: NA 1998: NA

SOUND EDITING (WAVE)

With MP3 being as widespread as it is, there are numerous users who would like to create audio compositions and then transfer them onto CD or to the Internet. Wave editing is one of the most demanding audio applications since they stress the system memory as well as the processing subsystems. With the ability to work with large audio files, Wave editing software can also be used to exercise a number of audio editing features on your tracks such noise removal, equalisation, echo, reverb, etc.

With future releases of these software, we will see even more features integrated into the application such as CD burning and ripping, format conversion and more streamlined use of resources. This is also going to be largely driven by the enhancement of subsystem performance such as faster processors, soundcards and hard disk drives. Interfaces and controls to these software are going to be so reflective of actual studio systems

that the transition from console-based sound editing to editing on computers is going to be very natural.



Soundforce 5



A very good set of integrated features such as CD burning and audio ripping help this software surge ahead of others in performance and features

Soundforce 5 provides you with an easy-to-use interface, which even a novice user can get along with quickly. The software also includes some great plugins and also provides support for downloading additional plugins from the Net. It also includes features such as CD burning, audio ripping and repair tools, it is capable of handling multiple streams of audio data and can process sound with DAT quality (48 KHz, 16-bit, stereo).

- + Good features
- + Great plugins

Price: Rs 19,200 (approx)
Web site: www.sonicfoundry.com

Worthy Mentions

Cool Edit 2000

- + Unlimited undo levels
- + Great interface
- Price: Rs 3,312 (approx)
- Web site: www.syntrillium.com

Goldwave

- + Supports a variety of audio formats
- + Small install size
- Price: Rs 1,920 (approx)
- Web site: www.goldwave.com

PREVIOUS WINNERS 2000: NA 1999: NA 1998: NA

SYSTEM SUITES

After having spent your money on buying the fastest PC that you can afford, it can be quite irritating to find that it doesn't perform up to your expectations for long. Given a little time, most systems begin to suffer from slower performance, frequent system crashes and problems due to viruses. This is where the System Suites come in and help you ensure that your system performs smoothly. They consist of several applications that work together to optimise the performance of all aspects of your system such as hard disk performance, the Windows registry and memory usage. It also helps protect against and diagnose the cause of application crashes.

As applications software continue to become more complex, getting great performance from your machine will continue to be a big challenge. While the type of applications that constitute the better system suites is not likely to change in the near future, the

arrival of newer operating systems such as Windows XP might make these seem less important for most users and the new architecture will almost certainly ensure the release of a version upgrade.



OnTrack System Suite 3.0



OnTrack is a good choice for registry cleaning. The boot up time increases by just 21 seconds, which is tolerable given the value one gets from it

OnTrack System Suite 3.0 heads the list as far as the features go. This suite has around 30 or more utilities which will take care of almost every task one can think of. The suite did not consume too much CPU power, which implies that you can take full advantage of this suite without slowing down the PC performance even if you don't have the latest processor fitted in your PC.

- + Low CPU utilisation
- + More than 30 utilities bundled

Price: Rs 3,000
Contact: OnTrack
Web site: www.ontrack.com
Reviewed in: February 2001

Worthy Mentions

Norton System Works

- + It takes just 14 minutes to defragment
 - + It uses very little RAM
- Price:** NA
Contact: Tech Pacific
Web site: www.symantec.com
Phone: 022-5960238
Fax: 022-5960102
E-mail: adil@techpacificindia.com
Reviewed in: February 2001

McAfee Office Central

- + Acceptable performance in registry cleaning
 - + Not very heavy on the CPU
- Price:** Not available
Contact: Network Associates
Phone: 022-6935278
Fax: 022-6147078
Web site: www.nai.com
Reviewed in: February 2001

PREVIOUS WINNERS 2000: NA 1999: Norton System Works 2000 1998: Norton Utilities Gold

VOICE RECOGNITION SOFTWARE

To many people, typing is a chore. The increasing power of desktop computers coupled with today's versions of voice recognition software makes it a snap when it comes to controlling nearly all the functions of your computer, whether it is writing and sending e-mail or launching applications. The core of these software has also seen a very definite improvement in terms of the speed at which voice recognition happens and in the time it takes to 'learn' a user's voice. Especially interesting is the fact that most of the software available today feature some form of adaptation to Indian dialects and accents, making it especially useful for applications in the Indian sub-continent.

The power of a speech recognition software rests in the underlying engine used to recognise voice and accurately decode phonetics of speech on the fly. The aim of manufacturers of speech recognition software is to create applications that drastically minimise the 'learning' time. We can look forward to applications that will practically require only minutes to recognise a new user's voice and this is going to spawn applications that will allow people to use speech as the form of data entry.



Dragon Naturally Speaking 5.0



An extremely effective voice recognition software which is appreciated for its high level of accuracy

This software won due to the simple fact that it was very accurate and very fast. It managed to be consistently accurate with all the technical jargon and, therefore, those of you interested in medical transcription can watch out for this software. Compared to other products in this category, it requires a comparatively less amount of processing power, which means that you can use this application alongside others and not have your system slow down to a crawl.

- + Extremely accurate and fast
- Price:** Rs 18,000
Contact: HCL Infosystems

Phone: 011-4526518
Fax: 011-4526579
Reviewed in: January 2001

Worthy Mentions

Philips Free Speech 2000

- + Provides a special Speech Mike
 - + Low CPU utilisation
- Price:** Rs 17,995
Contact: Philips India
Phone: 022-6912351
Fax: 022-6912499
E-mail: sameer.dania@philips.com
Reviewed in: January 2001

IMSI Voice Direct Continuous Gold

- + Low CPU utilisation
 - + Economically priced
- Price:** Not available
Contact: Microware Computer Services
Phone: 022-8729725
Fax: 022-8727446
E-mail: sales@mwcdrom.com
Reviewed in: January 2001

PREVIOUS WINNERS 2000: Dragon Naturally Speaking 1999: Philips FreeSpeech 2000 1998: NA

WEB AUTHORING

There was a time when text editors were used for creating Web pages—you coded almost everything ‘by hand’. Thankfully for most wannabe Web programmers, life is no longer as difficult with numerous user-friendly packages that make designing pages a snap. The latest generation of Web authoring tools, however, are difficult to ignore for even the most die-hard coders. New features let you create Web pages with a minimum of manual coding. All of these packages give you an interface and Web development environment that lets you see the results of your work on-the-fly, greatly reducing the time taken especially while tweaking with those details in your Web page. With XML and

Java contributing towards supercharging your Web experience, these software are going to evolve to support greater degrees of sound and animation.



Macromedia Dreamweaver 4



A powerful and versatile tool that's great for designers and Web programmers

This Web authoring tool seems to have everything for every one, ranging from tables to preset scripts, as well as an extremely intuitive interface. One can get precision Web pages that render the same in any browser. Dreamweaver 4 lets you view the code as it is generated in a split document window. This makes it easier for newcomers to learn HTML while the veterans will be pleased by the Code View, the clean code that is produced and the improved site testing and management capabilities.

- + Extensive feature support
- + Integrates with other packages
- Price: Rs 14,500
- Contact: Wipro Infotech

Phone: 080-8440011
Fax: 080-8440187
Reviewed in: September 2001

Worthy Mentions

Microsoft FrontPage 2002
+ Easy to use
+ Provides the user with a lot of templates
Price: Rs 8,400
Contact: Microsoft Corporation India Pvt Ltd
Phone: 011-6294600
Fax: 011-6292650
E-mail: msconnect@microsoft.com
Reviewed in: September 2001

Adobe Go Live 5
+ Very simple interface
+ Well integrated with Photoshop and Live Motion
Price: Rs 17,872
Contact: Adobe Systems India Pvt Ltd
Phone: 0118-4532026
Fax: 0118-4532010
E-mail: sandeepm@adobe.com
Web site: www.adobe.com
Reviewed in: September 2001

PREVIOUS WINNERS 2000: Macromedia Dreamweaver 3.0 1999: Macromedia Dreamweaver 2.0 1998: Macromedia Dreamweaver

The all new **www.thinkdigit.com**

Thinkdigit, your online technology navigator is an excellent reflection of the leading technology magazine Digit. You can easily identify with the magazine as you browse through the various sections. With added interactivity and powerful search tools, your flirtation with technology is as enjoyable as reading the magazine itself. It's particularly useful for referring back to articles you've read in the magazine.

A promising technology hub, this is where you will find all news, reviews, verdicts, tips and solutions neatly packaged in one place. The long archive of tips, problems and solutions, hardware and software test results, hands-on workshops will be very useful to every one. What's more, you get to put forward your views on each of them. And you no longer have to flip through your pile of Digit issues to find similar articles—they are all there to tickle your digital craving.



Click here for TLC-customer service, subscriptions, magazine and CD related problems, bouquets and brickbats. You can even check out what software are featured on the forthcoming month's Mindware and Playware CDs.

There's a lot more about the Web site, but you should discover it for yourself.

www.thinkdigit.com

verdict		A
www.thinkdigit.com		
Ease of use	▲ ▲ ▲ ▲ ▲	
Features	▲ ▲ ▲ ▲ ▲	
Performance	▲ ▲ ▲ ▲ ▲	
Value of money	▲ ▲ ▲ ▲ ▲	
OVERALL	▲ ▲ ▲ ▲ ▲	

- + Intuitive interface
- + Useful collection of workshops, tips, tests, etc.
- + Direct customer service
- Price: Freeware
- Web site: www.thinkdigit.com

Advertorial

AND THE AWARD GOES TO...

	CATEGORY	WINNER	HIGH SPOTS
HARDWARE	3D Graphics Cards	Asus V8200 GeForce3 Deluxe	Unsurpassed visual quality and speed, 64 MB of DDR memory
	CD-ROMs	ASUS CD-S500/G	Very good sequential data transfer rate and excellent access times
	Desktop PCs	Dell Dimension 8100	Best of class components and excellent build quality
	Digital Cameras	SONY DSC-P1	Great features and high resolution for great image quality
	DVD-ROMS	AOpen 1640 PRO DVD-ROM	Compatibility with other formats, stable and delivers high data transfer speeds
	Hard Disks (ID-5,400 rpm)	Samsung SV4084H (40 GB)	Good overall performance accompanied by silent operation
	Hard Disks (IDE-7,200 rpm)	IBM Deskstar 60GXP (41 GB)	High data transfer rates and low disk access times
	Hard Disks (SCSI)	Seagate Cheetah ST336752LW	Astonishing data transfer rates make this the fastest hard disk drive available today
	Inkjet Printers	Epson Stylus Color 880	Very good colour reproduction and build quality
	Keyboards	Logitech Cordless Freedom Navigator	Excellent ergonomics, lots of features and cordless operation
	Laptops	Zenith 21A	Excellent performance, lots of detailed manuals
	Laser Printers	Lexmark Optra M 412	Good print quality, high printing speeds, easy-to-use controls
	Monitors (14/15-inch)	ViewSonic E53	Good display characteristics and wide range of resolutions supported
	Monitors (17-inch)	ViewSonic PS775	Excellent resolutions and refresh rates, advanced image control capabilities
	Monitors (19-inch)	Samsung SyncMaster 955DF	Excellent image quality, USB support
	Monitors (21-inch)	Samsung 1200NF	Impeccable image characteristics and multiple connectivity options
	Motherboards (AMD)	ASUS A7M 266	Excellent memory bandwidth scores, good stability and DDR memory support
	Motherboards (Intel)	ASUS P4T	Highly configurable and very stable, offers 16 multiplier settings
	MP3 Players	Creative Nomad II MG	Good feature set, bundled software and slick looks
	Pointing Devices	Logitech Cordless MouseMan Wheel	Gives you wireless freedom along with pin-point accuracy
	Processors	Pentium 4, 2 GHz processor	Best performer in most 3D gaming benchmarks, durable construction
	Scanners	Epson Perfection 1640SU	Good scanning speeds accompanied by stunning colour reproduction
	Speakers	Creative Cambridge Soundworks DTT2500 Digital	Crystal-clear satellites, distortion-free subwoofer, amazing surround sound quality
SOFTWARE	3D Authoring Software	3D Studio MAX R4	Great tool integration, simple interface, powerful animation environmental effects
	Accounting (Office)	FACT 1.9	Comprehensive features and good reporting capabilities
	Anti-virus	Norton AntiVirus 2001	High detection and repair rates along with simple wizard based configuration tools
	Browsers	Netscape 6.1	Has a wealth of features and is extremely customisable
	CD-Writing	Easy CD Creator 5 Platinum	Maximum hardware support, complete bundle of applications
	DVD Playback Software	Intervideo WinDVD 2000	Feature packed and skinnable
	Firewall	ZoneAlarm Pro 2.6	Provides good protection and is extremely easy to configure
	Image Editing	Adobe Photoshop 6.01	Great text controls, improved layer management and support for vector objects
	Linux Distributions	SuSE Linux 7.2 Professional	Simple, variety of applications and excellent documentation
	Multimedia Authoring	Macromedia Director 8.5 Shockwave Studio	Versatile program with powerful scripting capability and support for 3D
	OCR Software	ABBY Fine Reader 5.0 Pro	Ability to retain layout: good accuracy
	Office Suites	Microsoft Office XP (standard)	Advanced task management and document-tracking features
	Page Layout	Adobe InDesign 1.5.2	Easy to use and can import a wide array of file types
	PIMs	Microsoft Outlook 2002	Outstanding e-mail client, useful collaboration features, good integration with MS Office applications
	System Suites	Ontrack System Suite 3.0	More than 30 bundled utilities and low CPU utilisation
	Sound Editing (MIDI)	Cakewalk Pro Audio 9	Advanced digital effects like dynamic pitch bending and key transpositions
	Sound Editing (WAVE)	Soundforge 5	Can process DAT quality audio streams
	Voice Recognition	Dragon NaturallySpeaking v5.0 (Preferred Edition)	Easy to train and has a high level of speed and accuracy.
	Web Authoring	Macromedia Dreamweaver 4.0	Split pane view for code and layout, excellent site management tools, and compact code generation

The (active) MATRIX

LCD monitors: a look behind the screens

HATIM KANTAWALLA

Flat panel technology has slowly evolved from just a niche cutting edge display solution to become a serious contender for the mainstream display market. It has progressed significantly from dull passive matrix screens to vibrant and fast-responding active matrix screens. The simplicity of the passive matrix system was beautiful, but it had significant drawbacks, notably slow response time and imprecise voltage control. Active matrix LCDs, which have faster pixel response time, depend on thin film transistors (TFT).

It is difficult to manufacture a TFT as compared to the ordinary CRT, primarily because the display size is limited by the number of transistors. As the number of transistors increase, so does the possibility of incorporating a bad or dead transistor. These show up as black dots on the screen, more popularly known as a 'bad pixels'. Most active matrix displays have a few bad pixels scattered across the screen, which is extremely irritating and is the primary reason why manufacturers tend to concentrate on smaller sizes. Manufacturers of large TFTs can go as far as to reject up to 50 per cent of the panels that are manufactured. Given such a low rate of yield, the prices of flat panels are quite high. Despite the lower yields on larger screen sizes, the best advantage is that

What Lights Beneath?

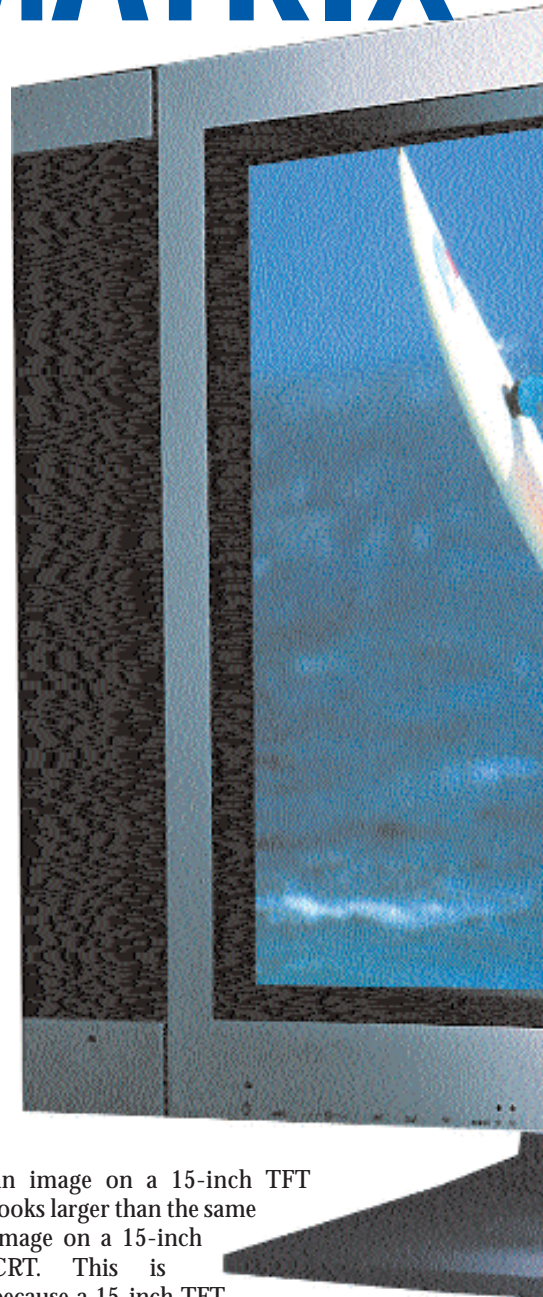
TFTs (Thin Film Transistors) are tiny switching transistors arranged like a matrix on a glass substrate. To light up a particular pixel, the proper row and column are switched on, and then a charge is sent down so that only the capacitor at the specified pixel receives a charge. The capacitor holds the charge till the next refresh cycle. By carefully controlling the amount of voltage supplied, one can allow only some light to pass through. By doing this in very exact and very small increments, LCDs can create a gray scale.

To show colour, an LCD must have

three subpixels with red, green and blue filters to create each colour pixel. By careful control and variation of the voltage applied, the intensity of each subpixel can be varied over 256 shades. Combining all the subpixels gives a possible palette of 16.8 million colours (256 shades of red x 256 shades of green x 256 shades of blue). A typical 12-inch LCD would support resolutions up to 1024x768, which translates into 2,359,296 transistors (1,024 columns x 768 rows x 3 subpixels). Now try doing the same math for a 24-inch TFT.

an image on a 15-inch TFT looks larger than the same image on a 15-inch CRT. This is because a 15-inch TFT directly translates into 15-inch viewable area unlike CRTs where the viewable sizes are lower (for a 17-inch CRT, the viewable size may vary from 15.5 inch to 16 inch).

Hence, the launch of Samsung's SyncMaster 240T in the Indian market is something of a first. With a 24-inch screen size, it is the largest available TFT in the market. Insanely expensive too! It costs over Rs 5,00,000. It is primarily targeted at video editors and CAD/CAM professionals who need larger working display areas.





Plus and Minus

✔ Brightness and contrast:

Flat panel displays are much brighter and feature higher contrast than traditional CRTs. CRTs feature contrast ratios around 190:1 to 245:1, while flat panels have contrast ratios from 200:1 to 500:1.

✔ Space-saving and non-hazardous:

Most panels are approximately 7 to 9-inch deep. Compare that to the average depth of a 17-inch monitor, which is usually around 17-inch deep. Also, because of their liquid crystal medium, flat panel displays emit no magnetic and very low emission fields.

✘ Viewing angle: Conventional TFTs have some limitations, such as 90 to 120 degree viewing angles. Flat panels with standard TFT technology present a good image only if the viewer is directly facing the screen.

✘ Image resolution: Flat panel displays are all set up like a grid. Virtually all 14-inch and 15-inch panels are 1,024 physical pixels wide and 768 pixels high. This is why all vendors of flat panel displays suggest using the 1024x768 resolution exclusively for 14-inch and 15-inch panels. Using a lower resolution such as 800x600 reduces the physical pixels and hence making the viewing area significantly smaller and degrading clarity.

• Size and Native Resolution: 24-inch viewable, 1920x1200. This is the resolution achieved by the number of pixels the monitor contains without scaling the screen contents up or down.

• Viewing Angle: Xtrawide 170 degrees. This determines how far above, below, or to either side of the display a person can be and still accurately view the image on it. Conventional TFTs provide viewing angles of about 90 to 120 degrees.

• Pixel response rate: 25ms. This is the time it takes for a pixel to respond to voltage (to be turned 'on') and then return back to its normal state. The shorter the pixel response rate, the more quickly the panel will be able to display and refresh images. Great for gamers.

Photograph: Jiten Gandhi
Imaging: Ram

Double Standards

EDO, SDRAM, RDRAM and now DDR-SDRAM...the memory race is kicking up a lot of dust and DDR-SDRAM promises to be the new road warrior

HATIM KANTAWALLA

It was in 1997 that memory made the graceful transition from EDO to SDRAM. While this might seem like a small deal today, there were several issues that existed at that time. The interface was not backward compatible with existing motherboards and the performance it offered was only a shade better than what EDO then offered. Probably the single most important reason why the transition to the new memory type was relatively smooth was the fact that Intel had put its considerable weight behind it right from the beginning.

Today, about four years later, SDRAM reigns supreme in the memory market and has become the *de facto* standard. It has populated systems since the day the mighty 440LX/BX series motherboards were brought in by Intel to accompany the introduction of the Pentium II and the AGP standard to the latest chipset series. Other chipset and processor manufacturers have had a hard time just keeping up with this standard, and have fallen far short of

being able to dictate to or convince others about adopting a different standard.

Things changed dramatically with Intel's decision to adopt the radically new RDRAM solution. The release of the i820 chipset, the first to support the new memory standard, was a big step for Intel, aimed at pushing adoption of the new standard. However, the i820 chipset suffered major problems, which included several delays, and this coupled with high prices for the new memory chips meant that people weren't convinced that it was a viable solution.

Enter DDR-SDRAM. Double Data Rate (DDR) SDRAM was defined by JEDEC in 1997, and it was designed to be a natural migration from PC100 and PC133 SDRAMs to higher data rates.

Since its inception in early 1997, DDR-SDRAM has clearly come a long way. It has now garnered enough muscle and backing to eliminate SDRAM and RDRAM as competitors. Although recently RDRAM did try to dethrone it, it was a vain effort. RDRAM never really got



Is it for Real?

Yes, all of these bandwidth figures and data pumping numbers are only theoretical. In real life, the performance increase that you should expect from DDR-based machines would be generally in the range of 5 to 7 per cent at the most. Realistically speaking, a non-discernible performance increase is what you should expect in ordinary desktop mode. Nevertheless, a substantial performance increase should be expected in memory intensive applications such as Photoshop and CAD-based applications.

So does it make sense to go out and buy some DDR and put it in your system? No.

DDR is not backward compatible with SDRAM slots. It uses a 184-pin interface and has only one notch in-between, whereas SDRAM has two notches and uses a 168-pin interface. But if you are buying a new system then DDR-SDRAM is definitely worth considering (or waiting for, if you want an Intel-based machine).

Also consider that there could be incompatibility issues when different modules from different manufacturers are used. Though these issues have been reduced, they may continue to exist because of certain memory verification issues. Always use both modules from the same manufacturer. Remember that the price difference between ordinary SDRAM and DDR isn't too much and this applies to PC2100 (PC266, which is the fastest available).

around to mustering enough support—its performance did not show any substantial increase and the high pricing made it unattractive to most people. DDR-SDRAM, on the other hand, got a lot of manufacturers and vendors excited because the concept by itself was pretty straightforward and the prices touted were in line with the prevailing prices of SDRAM. Simply put, it was almost what everyone wanted SDRAM to become—faster and cheaper.

What makes it tick?

DDR-SDRAM, as the name suggests, is a variant of SDRAM. Fundamentally, DDR-RAM is like any normal SDRAM that it sends twice the amount of data in one clock cycle. This is accomplished by sending data on the rising edge of the clock cycle as well as on the falling edge. But it is not as simple as it sounds. Pushing a normal SDRAM module to function at twice its capability involves a great deal more.

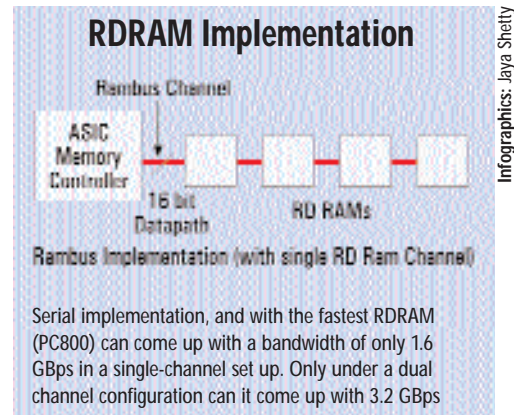
The term 'double data rate' refers to the fact that the theoretical peak data rate is twice the rate at which commands can be clocked. Specifically, commands are entered on the positive edges of clock, and data occurs for both positive and negative edges of clock. In most applications, the relative advantages of this approach are obvious. Doubling the transfer rate on the data bus and not changing the transfer rate on the command and address bus is a relatively simple approach to doubling memory bandwidth.

However, to understand the complete internal operations, it is important to think of DDR SDRAM as being more than just double data rate; the term DDR should be primarily associated with a 2n-prefetch, double data rate device. The terminology '2n-prefetch' implies that the internal data bus is twice the width of the external data bus and, therefore, the internal column access frequency can be half the external data

transfer rate. This means that for each single read access cycle internal to the device, there are two external data words provided.

What it means

Think of a memory chip as an Excel spreadsheet in which the different bits of information are stored temporarily in columns and rows. The access pattern or strobe follows this organisation in that first a field within the first column is accessed and subsequently all other addresses



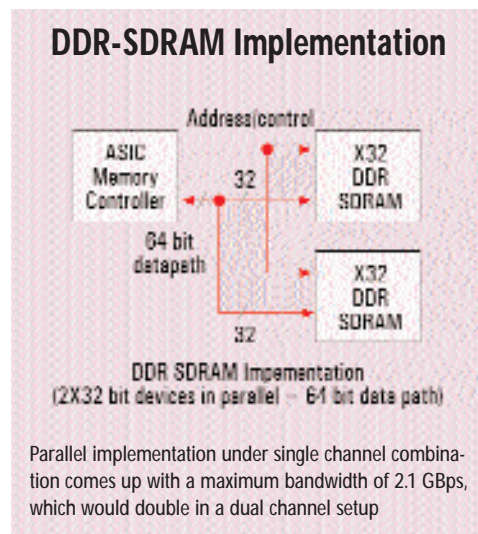
within that row can be read without additional penalty cycles. Similarly, two external data words written to the device are internally combined and written in one internal access.

To the layman, this means that data access occurs in pairs, that is, a single read access fetches two data WORDs (of 32-bits each); and for a single write access, two data WORDs (and/or data mask bits) must be provided.

Only doubling data bandwidth while leaving the core column access frequency the same as SDR has important implications. One extreme is an SDR SDRAM (1n-prefetch) running at literally twice the current frequency. But this is physically restrictive since it is much more difficult for the system designer to execute the command/address bus, and it is more costly for the DRAM vendor because it requires a larger die size and a more expensive process in order to double the internal core frequency of the DRAM. At the other extreme of possibilities is an 8n-prefetch architecture that provides increased bandwidth even with a narrow external memory data bus. However, defining a narrow external bus at the expense of a very wide internal bus increases the cost of the SDRAM device due to additional die size and process steps. Between these two extremes lies DDR, which is probably the best compromise considering technical and cost reasons.

Doing it two-gether

Of course, all these subtle nuances of prefetch will be of no use if it does not translate into



Glossary

JEDEC: JEDEC (Joint Electron Device Engineering Council), Solid State Technology Association is the semiconductor engineering standardisation body of the Electronic Industries Alliance (EIA). JEDEC has been the foremost standards development organisation for the semiconductor industry since 1958.

Latency: Latency in memory is primarily a penalty cycle, since the information is spread through several rows of data fields and the strobe has to revisit the columns to move down to the next row. This column access usually involves two or three penalty cycles which are added to the normal access cycle. Therefore, you see a Column Access Strobe (CAS) delay of two (one normal + two penalty) or three (one normal + three penalty) cycles. Needless to say that CAS-2 is quite a bit faster than CAS-3.

meaty and usable bandwidth. Bandwidth essentially means the amount of data that can be transmitted in a given period of time (measured against a second). Whether a given bandwidth is sufficient or not depends on how much data needs to be transmitted. More bandwidth by itself is not necessarily a benefit. Everything needs to be synchronised to utilise the pathway, failing which it will simply clog some end.

Calculating the maximum theoretical bandwidth for memory technologies is fairly straightforward. SDRAM and DDR-SDRAM are systems that transfer data in parallel. The formula used to calculate the bandwidth for DDR-SDRAM is: Bandwidth = (bytes transferred per clock cycle) x (operations per clock cycle) x (clock cycles per second)

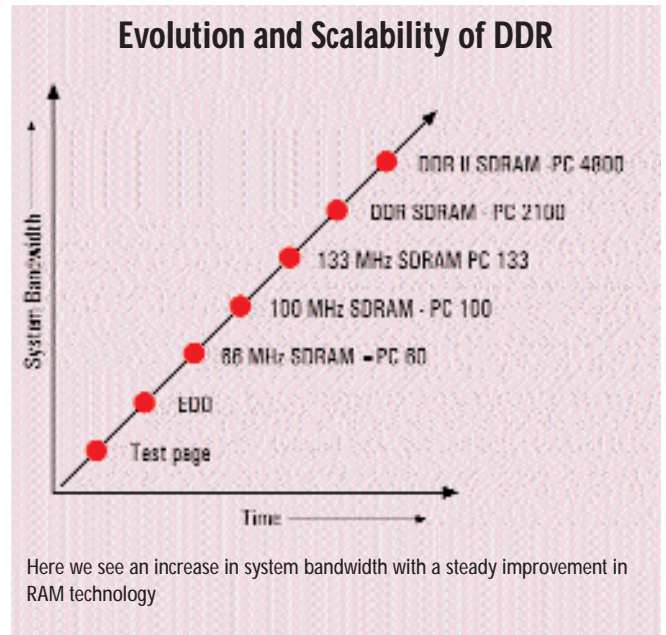
The bandwidth for Rambus RDRAM is calculated differently because the memory is serialised. Remember, RDRAM is 16-bit wide whereas SDRAM is 64-bit wide. For example, the ordinary PC100 SDRAM has the capability of transferring 800 MBps (8 bytes per cycle x 1 x 100 MHz). This was stretched to 1,064 MBps by PC133 simply by increasing the frequency.

As stated earlier, there are certain limitations to increasing frequency, the foremost limitation being cost. To combat this, DDR uses the unique 2n-prefetch logic to come up with a whopping 1.6 GBps for PC1600 (8 bytes per cycle x 2 x 100 MHz) and 2.1 GBps for PC2100. Compare this with RDRAM, and we find that under single-channel situations the fastest RDRAM (PC800) can come up with only 1.6 GBps (2 bytes per cycle x 2 x 400 MHz). Only under dual channel conditions does it double this bandwidth to a theoretical 3.2 GBps.

Though DDR too supports dual channel configurations, right now the only chipset solution it has is nVidia's nForce. The nVidia Crush chipset has support for dual channel DDR-SDRAM and, once available, it will offer the highest bandwidth offered by any solution, touching 4.2 GBps.

Waiting in queue

Waiting for something is bad enough, but waiting for something that you know is going to be late is worse. Latency is wasted time. It is the amount of time that a piece of hardware sits around doing nothing, waiting for another piece of hardware to deliver the goods for it to work on. In the PC scenario every single device is



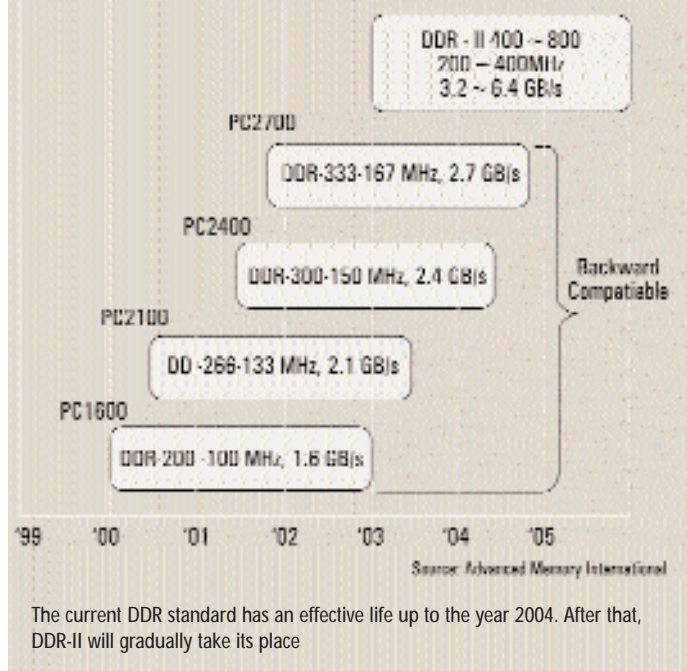
apparently waiting for data. The bottlenecks are not the pathways that deliver data but the data mines themselves. Current memory, be it DDR, SDR or RDRAM, is a great deal slower than the processors of today and will be even slower than the processors of tomorrow. That is why CPU manufacturers have been forced to incorporate on-die cache and speculative prefetching. Otherwise, the processor would be sitting around most of the time waiting for the memory to get its act together.

So which memory solution is winning the waiting game? RDRAM seems to have problems when it comes to latency due to its serial nature. Since it only transmits 16 bits a cycle, it takes two cycles for each 32-bit WORD, as opposed to SDRAM's one cycle. Using two channels can effectively halve this, but you then need two RDRAM RIMMs and the waiting still continues. More importantly, since it functions in a serial fashion rather than as a parallel device like SDRAM, if there are multiple modules being used, all transactions must wind their way through all the modules between itself and the CPU before reaching its final destination. This slows down things further, more than in the case of the direct, parallel connection SDRAM. To top this, RDRAM deliberately slows down the responses of all the modules to the length of time it takes to communicate with the chip located further most. So the more modules you have, the worse the latency becomes.

So what's the upshot?

For several years, technological change in the world of memory has been evolutionary. The move from EDO to SDRAM, from one standard

DDR Performance Migration Path



to another has been fairly graceful, with all companies getting behind one standard. But in the current scenario, manufacturers have had to figure out what technology is likely to be accepted, or they might well find themselves saddled with a product that won't sell or will become defunct.

The year 2001 too had probably seen the most confusing times when it came to PC technology. For any company or individual considering buying a new PC, the thought that it might get obsolete or defunct in just a couple of months is frightening. This amazing dilemma of choosing the right memory interface will continue to cause more heartburn because the new year will bring in even greater changes in computer hardware, so much so that we will see processors advancing over 3,000 MHz in raw speed! These processors, however, will have a tough time communicating since memory speeds and interfaces have failed to make parallel improvements because of incessant squabbling over memory standards. No one standard has been universally approved or recommended.

At present, DDR-SDRAM and RDRAM are the major competitors vying for the title of 'Memory of the Future'. RDRAM was seen by most as the future of memory. Intel promoted it, but things did not go as per their plan. With a buggy chipset and low chip yields, it failed to take off and never became mainstream.

DDR-SDRAM, on the other hand, is currently going strong and is estimated to jump to a

massive 50 per cent of all the memory to be shipped in the year 2002 and is all set to become the dominant memory technology of the future. This is a remarkable jump despite the fact that the Intel Pentium 4 is currently incapable of running alongside DDR-SDRAM because of unavailable chipsets. Also in its favour is the price—it is comparable to that of the run-of-the-mill SDRAM. Current prices show a difference of less than Rs 1,000 on the same size modules, which is impressive for a newer memory technology.

The DDR-SDRAM approach is a simpler, more evolutionary approach, while Rambus proposes to revolutionise PC design. The advantages of the evolutionary approach of DDR-SDRAM are simple and easy to under-

stand. It allows for a smooth transition from current technologies and is an open standard, which most importantly means that any and every manufacturer can manufacture and use it. But revolutionary changes involved in the transition to RDRAM would mean taking a huge risk, because the effects will be across the entire system architecture.

DDR technology has already breathed new life into the AMD processor and will do so with the Pentium 4 too. Whether or not it will replace all the solutions in the market by becoming the only dominant memory solution is yet to be seen. Signs are that it will.

Intel will soon release its mainstream DDR solution, code-named Brookdale-D, for the Pentium 4. Further on, we have the infamous VIA P4X266 chipset for the Pentium 4 supporting DDR.

Also riding strong is the AthlonXP along with new platform solutions from nVidia for the PC market supporting DDR. We already have DDR 333 being sampled and motherboards for it being readied.

All in all, it would be safe to say that DDR has matured enough from combating with RDRAM to become the only viable solution for the Pentium 4 and AthlonXP. Nevertheless, for DDR-SDRAM to succeed in numbers it will need the Pentium 4. The extreme loss of bandwidth that the 845-based solution is offering the Pentium 4 with its ageing SDRAM solution will soon be replaced and that will probably be the ultimate victory for DDR-SDRAM. ■

Next in Line

Changes and innovations in technology move at a pace usually difficult to keep up with. The Joint Electronic Device Engineering Council (JEDEC) has already started development work on the DDR II. There are more than 120 companies on the committee working on the standard including DRAM industry leaders Elpida, Hynix, IBM Microelectronics, Infineon, Micron, Mitsubishi, Mosel Vitelic, Samsung, Toshiba, as well as chipset and infrastructure leaders AMD, ALi, CST, ServerWorks, VIA, Texas Instruments, and others. DDR II promises significant improvements with another doubling in bandwidth, optimised bus utilisation, and improved power management. All this can be relegated as marketing hype when compared to the specifications that JEDEC is proposing—DDR 400 (PC 3200, 3.2 GBps) and DDR 533 (PC 4300, 4.3 GBps). This is simply mind-numbing and when paired in dual channel combinations, the result will be outrageous.

HARDWARE

Radar



More Info on

the hardware products tested.
Check out

Mindware

A stylish laptop, a performer hard disk, the latest Philips MP3 player—they are all here—the latest on the block

Space saver

This combo CD-RW and DVD drive delivered acceptable overall performance in the tests, though its 2 MB buffer on-board is a tad low for a CD-RW drive. Its sequential read time of 1.5 MBps is sufficient for watching DVD movies, but would be noticeable in applications such as installing programs from the drive or working with large data files off a CD.

Samsung SM-308BE



SPECIFICATIONS:

Interface: IDE

8x4x32 CD-writing speed,
8x DVD read speed, 2 MB
buffer

Bundled software: Adaptec
Easy CD Creator 4

Benchmarks:

A little over 10 minutes to
record 650 MB of data on
CD-R, 90 ms average access
time as a DVD drive, 1.5
MBps sequential read speed

verdict

B +

Samsung SM-308BE

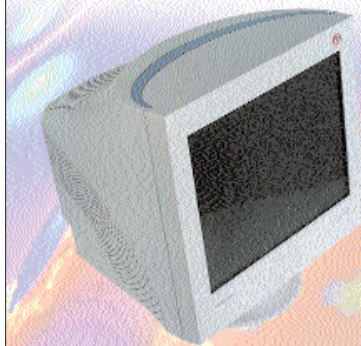
Performance	▲▲▲▲▲
Build Quality	▲▲▲▲▲
Value for Money	▲▲▲▲▲
Features	▲▲▲▲▲
OVERALL	▲▲▲▲▲

+ Saves physical space in cabinet by
combining a CD-RW and DVD drive
Price: Rs 8,500
Contact: Samsung Electronics
Phone: 011-6322517
Fax: 011-6322607
E-mail: marketing@samsungindia.com

Sharp colours

This compact monitor gives a stunning display at a high resolution of 2048x1539 at 80 Hz. It supports high video bandwidth (360 MHz), which allows for higher refresh rates at higher resolutions. It gave very good results in the sharpness and resolution test. You can use the monitor as a USB hub as it has four USB down and two USB up ports.

Samsung 1200NF



SPECIFICATIONS:

20-inch viewable screen,
recommended resolution of
1600x1200 at 75 Hz with 16-
bit colour, Aperture Grille
technology, four USB down
and two USB up ports

Benchmarks:

Noticeable pincushion distortion in the geometry test; very good results in the sharpness and resolution tests

verdict

A -

SAMSUNG 1200NF

Performance	▲▲▲▲▲
Build Quality	▲▲▲▲▲
Value for Money	▲▲▲▲▲
Feature	▲▲▲▲▲
OVERALL	▲▲▲▲▲

+ Good build quality
+ Clear colour reproduction
- Major pincushion distortion in the geometry test
Price: Rs 55,000
Contact: Samsung Electronics India
Phone: 011-6322517; **Fax:** 011- 6322607
E-mail: marketing@samsungindia.com

Light and powerful

This notebook weighed just under 2 kg. It uses the mobile 1 GHz P-III processor, but its SpeedStep technology enables it to function at 700 MHz when running on battery, thus saving on power. With a small footprint and size measuring 269x242x29 mm (WxDxH), this one is a lightweight but powerful multimedia companion.

Nishubuki Amazing XE



SPECIFICATIONS:

Mobile 1 GHz P-III processor, incorporates SpeedStep technology, 12 GB hard disk drive, 192 MB RAM, 8x CD writer (swappable with an 8x DVD drive), SIS 630S integrated VGA card, screen size of 12.1 inch XFA TFT, internal modem and integrated LAN, external 1.44 FDD

Benchmarks:

25.9 fps (normal mode) and 10.6 fps (high quality mode) in *Quake III*, 24.1 in Content Creation 2001, 1 hour 9 minutes battery run time

verdict

A -

Nishubuki Amazing XE

Performance	▲▲▲▲▲
Build Quality	▲▲▲▲▲
Value for Money	▲▲▲▲▲
Features	▲▲▲▲▲
OVERALL	▲▲▲▲▲

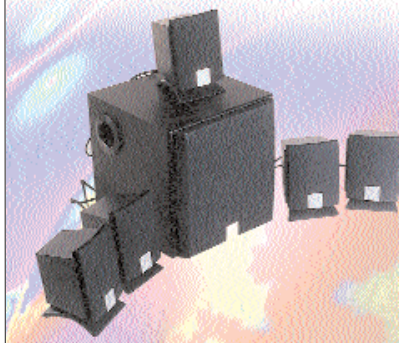
+ Good build quality
+ Built-in CD Writer
Price: Rs. 1,19,000
Contact: Nishubuki Computer Systems
Phone: 022-5825965
Fax: 022-5379719
E-mail: nitin1@bom5.vsnl.net.in



Sound's expensive

This speaker system supports 5.1 Dolby Digital surround sound. So if you have a DVD ROM drive and a Dolby digital compliant soundcard or amplifier, you can have true-to-life theatre-like experience right in your home. The set is good for playing deep punchy bass and for listening to tracks with rhythm. However, it is very highly priced.

Creative Inspire 5.1 5300



SPECIFICATIONS

Five satellites, one sub speaker; power rating of 6 Watt per satellite (five channels); 18 Watt subwoofer

verdict

B -

Creative Inspire 5.1 5300

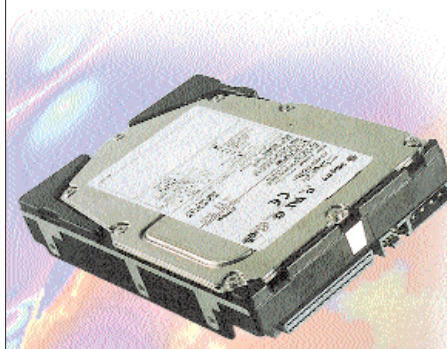
Performance	▲▲▲▲▲
Build Quality	▲▲▲▲▲
Value for Money	▲▲▲▲▲
Features	▲▲▲▲▲
OVERALL	▲▲▲▲▲

Price: Rs 31,655
Contact: Compuage Infocom Ltd
Phone: 022-8305500
Fax: 022-8238619
E-mail: info@compuageindia.com
Web site: www.compuageindia.com

Pro performance

This 15,000-rpm Ultra160 SCSI drive screams performance. Its 8 MB cache makes it suitable for applications involving frequent and continuous access to data, as in file servers. In SiSoft Sandra the average access time recorded was a mere 3 ms. If performance is what you seek and you work with applications that require swapping of huge files, this one's for you.

Seagate Cheetah ST336752LW



SPECIFICATIONS

36.7 GB drive capacity; eight read/write heads; 15,000-rpm disc rotational speed; 8 MB buffer

Benchmarks:

SiSoft Sandra: Drive index: 41813, average access time: 3 ms
HDtack: CPU utilisation: 9.5 per cent, maximum read speed: 61.2 MBps, Maximum write speed: 44.5 MBps

verdict

A -

Seagate Cheetah ST3366752LW

Performance	▲▲▲▲▲
Build Quality	▲▲▲▲▲
Value for Money	▲▲▲▲▲
Features	▲▲▲▲▲
OVERALL	▲▲▲▲▲

+ Very fast
- Expensive
Price: Rs 38,175
Contact: ACI Infocom Ltd
Phone: 011-6831878/79
Fax no: 011-6831968
E-mail: sanjayv@aciinfo.com
Web site: www.aciinfo.com

Audigy, the prodigy

The Audigy offers true-to-life sound through EAX Advanced HD. It features an integrated FireWire port for speedy transfer of audio data between the card and other peripherals. The card fits into any available PCI slot and includes ports for front and rear out, line-in and line-out and a digital out. Sounds were accurately reproduced while playing VOB files and games.

Creative Audigy Platinum eX



SPECIFICATIONS

Midi features: Audio processor: Audigy, type: wavetable, Midi channels: 48
Digital audio features: Full duplex, maximum recording depth: 16-bit, maximum recording rate: 48 KHz, maximum playback depth: 24-bit, maximum playback rate: 96 KHz, signal to noise ratio: 100 dB
Benchmarks: Direct-sound3D CPU utilisation at 44.1 KHz, 16 bits and 32 voices: 6.1 per cent

verdict

B +

Creative Audigy Platinum eX

Performance	▲▲▲▲▲
Build Quality	▲▲▲▲▲
Value for Money	▲▲▲▲▲
Features	▲▲▲▲▲
OVERALL	▲▲▲▲▲

+ External Audigy drive
+ Good bundled software
- No on-board Dolby digital processor
Price: Rs 19,110
Contact: Compuage Infocom Ltd
Phone: 022-8305500; Fax: 022-8238619
E-mail: info@compuageindia.com
Web site: www.compuageindia.com

Smart and sleek

Successor to the Philips eXpanium CD MP3 player, it uses the smaller 8 cm CDs which can store around 190 MB of data. The player can read MP3s and AAC files at all bitrates, including VBR MP3s. It offers a 100 second skip buffer for MP3s—sufficient for regular use. The earphones delivered good bass reflex and crisp mids and highs.

Philips eXpanium EXP401



SPECIFICATIONS

1x AA battery, 100 seconds Magic ESP (Electronic Skip Protection) technology, dynamic bass boost, MP3 playback at 32 to 320 KBps including VBR, 8 cm CD compatibility (Audio CD, CD-R, CD-RW), headphones and AC/DC adapter included.

verdict

A -

Philips eXpanium EXP401

Performance	▲▲▲▲▲
Build Quality	▲▲▲▲▲
Value for Money	▲▲▲▲▲
Features	▲▲▲▲▲
OVERALL	▲▲▲▲▲

+ Small, easy to use
- Skips if roughly handled, no ID3 tag support
Price: Rs 9,990
Contact: Philips India Ltd
Phone: 022-6912333 Fax: 022-8259276
E-mail: gautam.dalal@philips.com
Web site: www.philipsindia.com



SOFTWARE

Radar



More Info on
the software products tested.
Check out
Mindware

An enhanced Adobe Illustrator, the Bryce 3D authoring tool, Layout Galaxy and more—all tested to make your buying decision easier

Loss proof

This software prevents data loss in case of partition corruptions, partitions recreated, damaged FAT tables or logical disk damage. After installation, it calculates the critical system information, system area and data structure, and stores them in a protected area of the disk. It can even retrieve data from a formatted disk if it is not low-level formatted.

Unistal's Crash Proof



SPECIFICATIONS

Features: Protects against data loss in case of partition corruptions, partitions recreated, damaged FAT tables or logical disk damage

verdict

B +

Unistal's Crash Proof

Ease of use	▲▲▲▲▲
Features	▲▲▲▲▲
Performance	▲▲▲▲▲
Value for money	▲▲▲▲▲
OVERALL	▲▲▲▲▲

+ Feature-rich protection in case of data loss

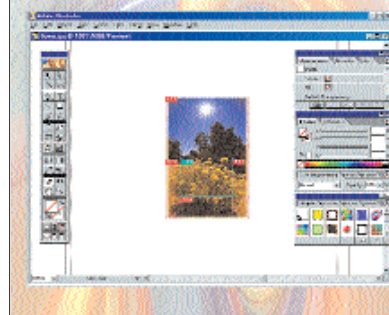
- Can't retrieve files older than a week

Price: Rs 1,500 (includes one year warranty on media)
Contact: Unistal Systems Pvt Ltd
Phone: 011-6288863; **Fax:** 011-6388863
E-mail: unistal@unistal.com

New, improved

Illustrator 10 features more integration with vector/raster based Web graphics. It supports Macromedia Flash SVG file formats and has enhanced support for producing graphics for wireless platforms. The drawing symbols are noticeably better. The software has good help files and online help. It also offers support for dynamic data driven graphics for the Web.

Adobe Illustrator 10



SPECIFICATIONS

Install size: 88 MB
Features: Enhanced support for SVG files, ability to create graphics templates with variables in it, support for dynamic data driven graphics for the Web, improved drawing symbols

verdict

B +

Adobe Illustrator 10

Ease of use	▲▲▲▲▲
Features	▲▲▲▲▲
Performance	▲▲▲▲▲
Value for money	▲▲▲▲▲
OVERALL	▲▲▲▲▲

+ Good features, more effects such as Wrap and Live Distortion

Price: Rs 20,700
Contact: Wipro Infotech Enterprise Software Group
Phone: 022-6324883; **Fax:** 022-6323605
E-mail: nic@wipro.co.in
Web site: www.adobe.com

A neat bundle

This one has an excellent set of utilities such as its popular and reliable anti-virus, Ghost, a basic fax program and others. However, it may not excite you if you already have the previous version. This version has a single-button check facility, so you can scan the system for problems with a single click.

Norton SystemWorks 2002 (Professional Edition)



SPECIFICATIONS

Features: Can scan the system for problems at a single click, presence of script blocking facility strengthens protection capability

verdict

B +

Norton SystemWorks 2002

Ease of use	▲▲▲▲▲
Features	▲▲▲▲▲
Performance	▲▲▲▲▲
Value for money	▲▲▲▲▲
OVERALL	▲▲▲▲▲

+ Feature rich and easy to use

- Slow installation

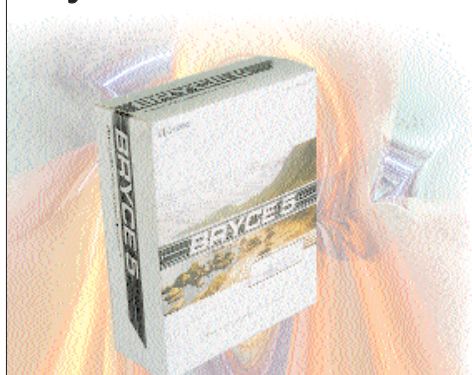
- Resource hungry

Price: Rs 5,275
Contact: Symantec Ltd
Phone: 022- 5960238; **Fax:** 022-5960102
E-mail: jitendrag@techpacindia.com
Web site: www.symantec.com/region/in

For the creator in you

This version of Bryce has more tools and control buttons. It has new object types called Metaballs that let you create realistic effects such as melting glass. Bryce lets you create 3D terrains and scenes. Once your scene is ready, you can render and export it to one of the popular formats supported or even animate it and then export the animation.

Bryce 5



SPECIFICATIONS

Features: Metaballs help create realistic shapes; create terrains and edit them using Terrain Editor; create perfect trees using Tree Lab

verdict

B +

Bryce 5

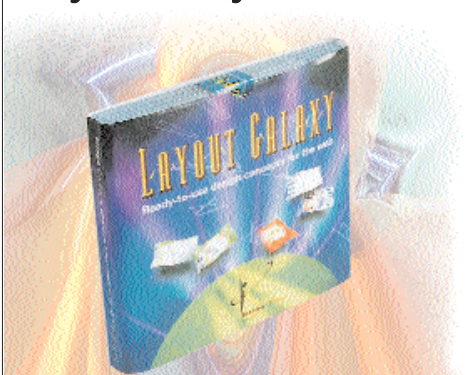
Ease of use	▲▲▲▲▲
Features	▲▲▲▲▲
Performance	▲▲▲▲▲
Value for Money	▲▲▲▲▲
OVERALL	▲▲▲▲▲

+ Brilliant authoring tool for creating 3D worlds and terrains
Price: \$299 (approx Rs 14,352)
Contact: Corel
Web site: www.corel.com

A galaxy of images

This package of three CDs is loaded with PSD template images, which can be used to create stunning Web sites and is a boon if you like making your own Web sites. You can edit these images in any software that supports importing the PSD format. You can preview the image through the accompanying Flash file, or even change its colour.

Layout Galaxy



SPECIFICATIONS

Features: Three CDs with over 200 PSD template images each; accompanying Flash files to enable preview of an image

verdict

B +

Layout Galaxy

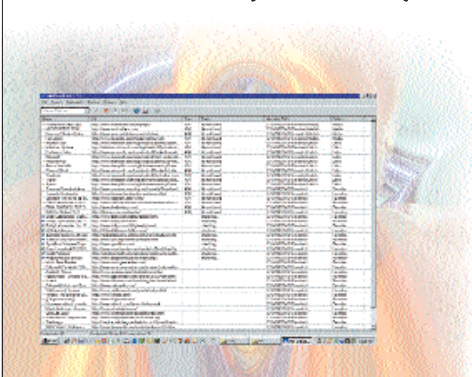
Ease of use	▲▲▲▲▲
Features	▲▲▲▲▲
Performance	▲▲▲▲▲
Value for Money	▲▲▲▲▲
OVERALL	▲▲▲▲▲

+ Great selection of image files
 - Images have to be manually selected from the CD
Price: Rs 4,400
Contact: Image Online
Phone: 022-5836880; **Fax:** 022-5793397
E-mail: ionline@vsnl.com
Web site: www.layoutgalaxy.com

Junk ridder

It detects dead links and duplicate URLs in your browser bookmarks and lists them in the main interface window, which you can then delete manually. The list of these URLs gets saved in a log file, which can be later previewed in Notepad. You can also select your Web browser through the interface. It supports popular browsers such as IE, Netscape and Opera.

AM-Deadlink (Freeware)



SPECIFICATIONS

Download size: 427 KB
Features: List of deleted URLs are saved in a log file; you can select your browser through the interface

verdict

B

AM-Deadlink (Freeware)

Ease of use	▲▲▲▲▲
Features	▲▲▲▲▲
Performance	▲▲▲▲▲
Value for Money	▲▲▲▲▲
OVERALL	▲▲▲▲▲

+ Fast search and easy to use
Price: Freeware
Web site: www.aignes.com

Safe and secure

This neat little software lets you encrypt and decrypt messages sent and received in ICQ. Secure-ICQ must be installed on both ends for it to work. You can also decrypt messages in the ICQ history folder by opening the history and pressing on the decrypt button. However, to send an encrypted message, you must be in the simple window mode.

SecureICQ



SPECIFICATIONS

Install size: 2.13 MB
Features: Works on Windows 95, 98, NT, 2000 and Me; has to be installed at both ends for it to work

verdict

B +

Secure ICQ

Ease of use	▲▲▲▲▲
Features	▲▲▲▲▲
Performance	▲▲▲▲▲
Value for Money	▲▲▲▲▲
OVERALL	▲▲▲▲▲

+ Easy to use
 - You can send an encrypted message only in the simple window mode
Price: Freeware
Web site: <http://software.anthony.2y.net/>

Reviews

Power to you

If you're a new user of MS PowerPoint and need to get acquainted with the software then this CD should help. It takes you through a detailed step-by-step tour of Power Point 2000 Intermediate. The CD has a simple and easy-to-browse interface and contains lessons on various features of PowerPoint followed by tests at the end of each lesson. Not for intermediate level users, but a boon for newbies.

Learn MS Power Point 2000 Intermediate

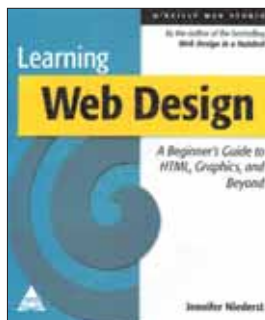


Developer: Zenith Global Consultants Ltd
Contact: Zenith Global Consultants Ltd
Phone: 022-2046094/95
Fax: 022-2041844
E-mail: zenith@zenithglobal.com
Price: Rs 360
Rating: ★★★★★

Fun with Web designing

If you've been longing to have a Web site of your own but were put off by the prospect of having to learn HTML, then this book should prove to be a treat. It gives you a taste of Web designing using HTML, graphics and more. The book starts with an introduction to how the Internet works. It goes on to cover topics such as learning HTML, creating Web graphics and more—all with step-by-step instructions.

Learning Web Design



Publisher: Shroff Publishers and Distributors
Contact: Computer Book Shop
Phone: 022-2070989, 2076356
Fax: 022-2623551
E-mail: cbsbm@giasbm01.vsnl.net.in
Price: Rs 400
Rating: ★★★★★

All in 3D

If you're a fan of Maya and 3D animation then this book should help you get acquainted with the latest version of the software. The book is aimed at both, professionals working with Maya as well as beginners, and covers the various tools and features in Maya 3 such as modelling basics, animating in Maya, path and bone animation, rendering, lighting, shading, dynamics of soft bodies and more.

Mastering Maya 3



Publisher: BPB Publications
Contact: Computer Book Shop
Phone: 022-2070989, 2076356
Fax: 022-2623551
E-mail: cbsbm@giasbm01.vsnl.net.in
Price: Rs 499
Rating: ★★★★★

Find it on
digit
 interactive

Arena

For game reviews check out,

Playware

On the Stands

Windows XP in an instant

Learn Windows XP the quick and easy way. The book teaches you all you need to know with the help of screenshots and direct, step-by-step instructions.

Publisher: IDG Books India (P) Ltd
Contact: IDG Books India (P) Ltd
Phone: 011-3260877
Fax: 011-3275895
E-mail: idgbooks@vsnl.com
Price: Rs 129
Rating: ★★★★★



Discovering Computers 2002

This book is an encyclopaedia of sorts and covers every aspect of computing right from a basic introduction to computers, to the Internet and on to operating systems and utility programs and more.

Publisher: Thompson Learning
Contact: Computer BookShop
Phone: 022-2070989
Fax: 022-2623551
E-mail: cbsbm@giasbm01.vsnl.net.in
Price: Rs 1,054
Rating: ★★★★★



Multimedia: making it work

Getting multimedia to work for you is what this book is all about. It covers the various aspects of multimedia such as text, images, motion video and sound as well as topics such as assembling and delivering a project.

Publisher: Tata McGraw Hill
Contact: Computer BookShop
Phone: 022-2070989, 2076356
Fax: 022-2623551
E-mail: cbsbm@giasbm01.vsnl.net.in
Price: Rs 375
Rating: ★★★★★



UNDERCOVER

A Tale of Mon-eater Monitors

DVD rips and 3D games wouldn't be as much fun without the right monitor. Agent 001 is on the lookout for the best you can feast your eyes on

Illustration: Mahesh Benkar



"17-inch monitors are distinctly cheaper now than a year back... while 14-inch monitors are going out of fashion"

As I sat watching *Indiana Jones and the Temple of Doom* on my 14-inch monitor, I was taken over by an overpowering urge, an urge so strong that throughout the movie all I could think was: I need a new monitor! So for my next mission I went in search of a spanking new monitor.

Most people buy a monitor according to the overall budget of their system. The monitor is undoubtedly one of the most expensive components in the system configuration, but at the same time it has a longer life than most other components, better build quality, and usually lives up to what it promises.

With the overall prices of budget systems falling to almost Rs 30,000 and below, 17-inch monitors seem a possible choice for many. A local vendor in Andheri (E) confirmed this, saying that there has been a distinct move towards 17-inch monitors in the market and manufacturers were concentrating more on this segment. He observed that these monitors are significantly cheaper now than a year back—as low as Rs 11,000—and added that the Samsung SyncMaster 750s was doing especially well. Most people generally start off by asking for a flat screen 17-inch monitor but in the end settle down for a cheaper one due to the high price, said the dealer.

Another vendor in the same area said that people mostly buy 15 or 17-inch monitors, with the 14-inch going completely out of fashion. Due

to the low price difference between 14-inch and 15-inch monitors, the latter have been selling well too, said the dealer. However, this difference is significant between 15 and 17-inch monitors (around Rs 3,000). When asked about a specific difference between various brands in terms of performance, he was at a loss of words, but mentioned candidly that on most occasions the monitor box is not even opened nor checked! He was vague in numbers too. "It varies from month to month, but it's generally higher during the rainy season due to the increased humidity," was his answer about the approximate number of monitors he gets to repair in a month.

According to another vendor, while flat monitors were still out of range of most first-time buyers, the LG Flatron 775FT is the most sought-after flat monitor in the 17-inch category. He added wistfully that the more expensive Sony monitors were usually bought by design professionals, and that he hadn't sold a single one yet.

Moving on further south, a vendor said that people generally come with a distinct brand preference, so much so that certain users will not buy anything but a specific model. He had no preferences himself as such, except for the ViewSonic E53 for its 15-inch range and the 17-inch Samsung SyncMaster series.

A more technically proficient vendor at Lamington Road said that buyers rarely look beyond size in spite of the products being technically complex. Most users have distinct brand awareness when it comes to monitors, but nothing much beyond that, was his opinion. "Most users come for Samsung monitors, while others don't tolerate anything but a ViewSonic".

Vendor two in Lamington said that as far as statistics go, SyncMaster sings, and that too with minimal problems. Vendor three faced small nagging problems such as buttons and knobs not working in cheaper monitors and non-functioning tubes, brightness and contrast errors in bigger ones. Vendor three was clear about his choice though: SyncMaster 955DF in the flatter variety and the LG Studioworks 995E for the three-year warranty.

As for me, I know what to watch *Indiana Jones* again on! 📺

A Monitor's Video Bandwidth

The video bandwidth of a monitor is nothing but an indication of its ability to refresh the screen fast enough. This bandwidth is calculated by multiplying horizontal and vertical resolution by the maximum vertical refresh the monitor can be run at on that resolution: for example, a monitor that can be operated at 800x600 at a maximum of 85 Hz will have a video bandwidth of 40.8 MHz (800x600x85). Therefore, we see that since the video bandwidth is a constant for a given monitor, the higher the resolution you run the monitor at, the lower will be

the vertical refresh rate it will be able to run at.

Even though monitors might have the same screen size (15, 17, 19-inch, etc), they could have different video bandwidths. Usually, the more expensive monitors within a given range will feature a higher bandwidth as they will support higher resolutions and refresh rates. As a rule of thumb, if you're looking for the best monitor of a given screen size, buy the one that supports the highest video bandwidth as you'll be able to run it at higher resolutions and refresh rates.

*Want to share insights and experiences in buying computer hardware and digital products?
Write in to readersletters@jasubhai.com*

Sharp Shooters

Digit *dhamaka* in the midst of crackers and sparklers

For three months in a row, the editorial team has had its hands full with researching, compiling and then cross checking the details for the October 'Smart Buyers' issue, the November 'Web Awards' issue and the December 'Zero1 Awards' issue.

But there was a slight twist in the tale while working on the December issue. With the Digit redesign planned for the January 2002 issue, we had our hands full and more, what with working on the current issue, and simultaneously brainstorming, experimenting with design and planning for the January redesign.

the design team insisting that every square inch of the printed page pass the scrutiny of their eagle eyes and the design team was working away on visuals and getting the aesthetics of the layouts right.

At the same time, there were meetings galore with thoughts, ideas, files and folders being bandied about. In the midst of the endless cups of coffee and the focus on getting the December issue done with, we forgot that the festival of lights was upon us. We missed Diwali...but only nearly so.

The first inkling we received of there being something up in the air was when we heard a distinct gunshot somewhere in the distance. The sounds came closer and we saw Maulik, our CEO, walking around armed with a 'Beretta' taking pot shots at the ceiling.

The crack of firearms had some of us thinking that work rules had changed drastically. But our 'fears' were laid to rest—this was just Maulik's way of reminding us that the festival was way past the 'round the corner' stage.

There were strict instructions to buck up with the day's work as later in the evening we were to be treated to a display of fireworks. Those who looked reluctant to tear themselves away from their work, found a gun staring them in the face, with Maulik threatening to turn trigger-happy. That was enough to get the party poopers to their feet and scramble to the terrace of our office building to watch the 'son et lumiere' unfold.

Enthusiasm is never lacking at Digit and soon we had technical writers, programming geeks, marketing maestros and events specialists getting their hands dirty with the heavy artillery—out came the rockets and 'rassi bombs'. As the rockets lit up the sky, the 'oohs' and 'aahs' from the crowd were interspersed with 'DUCK' as a few of the fire crackers found their way into the unwary but gleeful public. ■



Illustration: Mahesh Benkar

But despite the extra work, things were pretty much normal till we reached the final lap of closing issue. The writers (Anil, Vidyaramanan, Prashant, Sriram and Avina) were frantically verifying and checking and checking once again on the figures, statistics and the finer nuances of their stories, the copy editors (Roopa, Julian and Anshul) were shuttling between the writers and

Desi Swordfish?

Gabbar sends Kaalia and two others to Ramgad to collect the *loot-maar* software he had ordered. They reach Ramgad and start shouting: "Abe O thakur! Kahan hai wo loot-maar software? Last date to kabh ka nikal gaya".

Thakur [with anger]: "Chillao mat! Jaakar Gabbar se kah do ki Thakur Software walon ne paa-gal kutton ke liye software banana bund diya hai."

Kaalia: "Bahut garmi dikha rahe ho thakur? Koi naye programmers hire kiye hain kya?"

Thakur: "Nazar utha ke dekh, Kaalia, tere sar par powerbuilder chal raha hai." [Kaalia looks up and sees Viru (Dharmendra) working on a PC on one water tank and Jay (Amitabh) on another, using a laptop. Kaalia starts laughing and says: "Ha ha...ye log programming karenge? In ko to DOS commands bhi nahin aate."

Veeru shouts: "Chup-chap chala ja kutte. Ham log consultants hain, kuch bhi kar sakte hain." Jay hits some commands on his keyboard, then says: "Jao kaalia, gabbar se kahna ki uska server down ho gaya."

AT GABBAR'S DEN...

Gabbar: "Kittne bugs thay?"

Kaalia: "Do sarkaar."

Gabbar: "Woh do! Aur tum teen. Phir bhee fix nahin kar sake? Kya soch kay aaye ho? Gabbar bahut khus hoga? Naya assignment dega? Iski saja milegi... barobbar milegi." [Snatches an X terminal from Sambaa]. "Kitne sessions hain is machine mein?"

Sambaa: "Chhey sarkaar."

Gabbar: "Session chhey aur programmer teen. Bahoot naa-insaafi hai. [logout - logout - logout]. Haan, ab theek hai... ab tera kyaa hoga Kaalia?"

Kaalia: "Sarkaar, maine aapka code likha tha."

Gabbar: "To ab documentation kar!" [Logout]

Contributed by: Anirudh, via e-mail

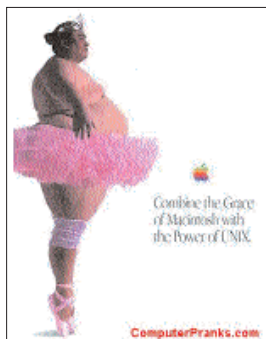
WINDOWS goes down under

If Windows were Australia-based, the lingo would fly! Here's what might have been the language of the geeks with the Aussie version of Win 2000, called 'Windawz 2000'.

Taken from www.computerpranks.com



Strength in frills!



Strength and grace are a powerful combination indeed, but the mind boggles when we try to imagine this giant on his twinkie toes. As they say in some circles, "Hila ke rakh doonga!".

Taken from www.computerpranks.com

RETRO An Apple or II

Thanks to the fact that Steve Wozniak could not afford the then popular CPU, the Intel 8080, came the very first offering from the stable of the now legendary Apple Computers—the Apple I. Following the Apple I was (obviously) the Apple II, which turned out to be the very first commercial success for Apple Computers. It ran at 1 MHz and came with 4 KB of RAM. The series was followed by the Apple II+, which was fully compatible with its predecessor and came with 48 KB RAM and an auto start ROM. The Apple II was effectively the first commercially available personal computer that could display 16-colour graphics, a kind of Holy Grail in the industry at the time, and came in stylish plastic housing. Apple continued with this strategy, introducing the Macintosh in 1984 and, more recently, the extremely successful iMac in 1998.

Readers Rants

56 K modem and... KBC?

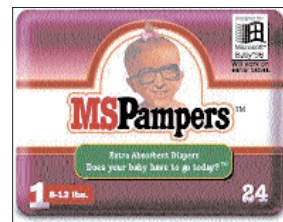
Now we know that KBC has taken the Big B's career to an all new height, but what was this dealer thinking when he included it as a part of one of his system's configuration?

Contributed by: Unmesh K., via e-mail

Where's Microsoft going now?

Guess Microsoft has finally grown tired of taking all that crap from its users and has an upcoming product launch to counter the steady stream! And no points for guessing the baby on the packaging!

Contributed by: Deepak Dhingra, via e-mail



Your chance to BACKBYTE!

Highlight the lighter side of computing. Mail your contributions to Backbyte

Digit, Plot D-222/2,
TTC Industrial Area, MIDC,
Shirvane, Nerul,
Navi Mumbai 400 706
or send e-mail to
backbyte@jasubhai.com