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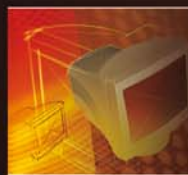
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 **Jasubhai**
DIGITAL MEDIA

Editorial

The End Of Innocence

IT WAS JUST as well that the media did not name her. A news report carried by NDTV about a Delhi schoolgirl, whose obscene MMS is currently circulating amongst thousands of teenagers and adults across the country, is disturbing to say the least.

The schoolgirl (age and name not revealed) from Delhi Public School in the R K Puram area of south Delhi indulged in a sexual act with her boyfriend, who recorded it on his camera phone. The MMS, which obviously started from the boy's phone, soon spread like wildfire in Delhi, and later, the rest of the country.

Both the girl and the boy, along with eight others, were suspended from school for carrying camera phones to school.

But clearly, there is more than technology at work here. Technophobes would say it was the camera phone that was responsible for the "crime," and how technology empowers perverts to indulge in their wildest fantasies.

I disagree. It was the boy who was responsible. And his parents. Period.

I doubt whether the boy was aware of the ramifications of his sending the clip to a couple of friends. And I also doubt that the initial MMS was anything more than just an ego trip to show how he "scored" with his "girl." Just like it was for Francesca Willis, an Australian schoolgirl and model who recently posted provocative pictures of herself (shot using her school's Web cam) on her blog. The school sacked her, ensuring she became a national celebrity.

The Delhi case raises other questions—just how do you control the rampant misuse of technology; how do we stop children from playing excessively violent games; how do we stop them from becoming voyeurs; and most importantly, how do we stop them from using technology to become a tool of mistrust among even the closest of friends.

The answer is not to ban camera phones or pornography on the Web. Bans, like prohibition, just don't work. The answer here, as in most cases, is responsible parenting.

Parents I spoke to told me they need to be in touch with their children, and that therefore, they provide them with cell phones. Logically, if communication is the only issue, wouldn't a basic phone suffice?



Sachin Kalbag Executive Editor

“Bans on camera phones in schools do not work. The answer is responsible parenting”

Just as the personal video camera was developed to record life's events and not make porn movies, just as Photoshop was developed to give creativity an edge and not to morph faces on naked bodies, just as the Web was developed to share information and not for online fraud, so the camera phone was developed to store memories, and not betray your dear ones.

However, the human mind is a complex matrix. Technology's negative manifestations are not stored on a chip, but in the electric impulses that transmit information to the brain.

A handwritten signature of Sachin Kalbag in black ink.

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Printed and published by **Maulik Jasubhai** on behalf of **Jasubhai Digital Media Pvt Ltd, 26 Maker Chambers VI, 2nd Floor Nariman Point, Mumbai 400021, India and Published from Mumbai**

Editor: **Maulik Jasubhai**

Printed at **Magna Graphics (I) Ltd**
101 C & D Government Industrial Estate Kandivli, Mumbai 400 067



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Product Index

Hardware

Portable Digital Music Players 174

Apacer Audio Steno AP510
Apacer Audio Steno AV220
Apacer Audio Steno BP300
Apple iPod 20GB
Apple iPod Mini
BenQ Joybee 110
BenQ Joybee 120
Creative MuVo Slim
Creative MuVo TX
Creative MuVo2 1.5GB
Creative MuVo2 4GB
Creative MuVo2 FM 5GB
Creative Nomad MuVo NX
Creative Rhomba NX
Creative Zen Touch 20GB
DMS MP301
Ennyah DIGISound II DS601
MSI MegaStick
Orite Music Cookie
Samsung Digital
Audio Player Yepp YP-55

Samsung Digital
Audio Player Yepp YP-60
Samsung Digital
Audio Player Yepp YP-T5
S-Media Butterfly
S-Media Cocopod
Sony Network Walkman
Transcend JetFlash
Umax Draco
Umax Vega

New and Notable 74

ACI Impression M11
Samsung SCX-4100
Epson Stylus R210
PalmOne Treo 600
Microsoft Optical Desktop with finger-print reader
Travel PAC World Travel Adapter

Software

New and Notable 74

Caddy Online backup
Norton SystemWorks 2005

Advertisers' Index

Client	Page
Altec Lansing	Inside Back Cover
AMD	60, 61
ASUS	73
BBC	37
Canon	42, 43, 44, 45
Cricket Today	156
Dell	14, 15
Digi Giga	39
Enjay	56
IIHT	35
Jet Airways	29
Kingmax	99
Kingston	78, 79, 80, 81
KYE	91
Levi's	13
LG	Cover Gatefold
Microsoft	19, 21, 23, Back Cover
MSI	65
Ricoh	31
Samsung	7
Seagate	105
Sony	27
Twice Digital	95
Zenith	11

Product Guide 2005

Client	Page
Abacus	143
ABBY	137
Amara Raja	149
AMD	111
Creative	131, 145
Epson	117, 121, 141
LG	119, 125
Logitech	123, 129, 151
Motorola	133, 134, 135
Pinnacle	139
Priya	127
Pronto	153
Sony	115
TVSe	147
Viewsonic	113

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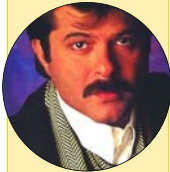
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Enter



16
Anil Kapoor would like to see a PC in every village

18
A short tour of the best hardware sites on the Internet

24
We what and when of Microsoft Longhorn—the Windows OS of the future

Digital Passion



25 Tech Review 2004 ☐

A look back at the year 2004. We showcase the best technology, the biggest trends, the greatest people and the largest IT events 2004 had to offer

47 Fuelling the Need for Speed

Karun Chandhok talks to us about British Formula 3 and the technology behind the racing

53 Mission Impossible?

Will we ever see the day when a PC sells for Rs 5,000? We ask the experts

48 Half-Life 2

The sequel to the greatest PC game is here, and we played it! Did we like it? Find out inside

58 The Made-in-India Browser ☑

A salute to 26-year old Jagdeep Dangi; his Hindi Web browser, his translation tools, his dictionary, his Hindi file editor, and above all, his unbreakable spirit



Contents Magazine

Digital Tools

71 A Showroom On The Web

Antidesk took a furniture shop online and created a thriving business out of it. You can take a cue

109 Product Guide ☑

We demystify everything related to IT and help you choose the best products the market has on offer



74 New & Notable

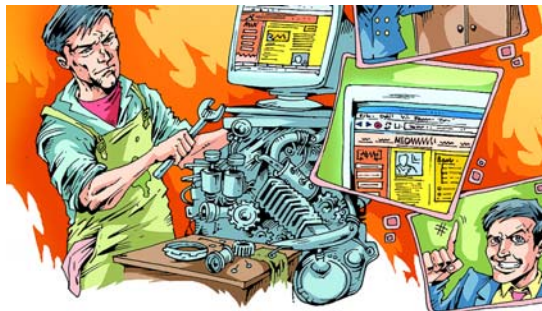
Reviewed this month: the PalmOne Treo 600, the ACi Impression M11, Norton SystemWorks 2005 and more, including a look at Mozilla Firefox 1.0

107 Ask Agent 001

Agent 001 talks about his experience while purchasing a UPS, and then fields reader queries on all matters technological

96 Web Sights

Build a Web site, then get search engines to notice it. We show you how ☑



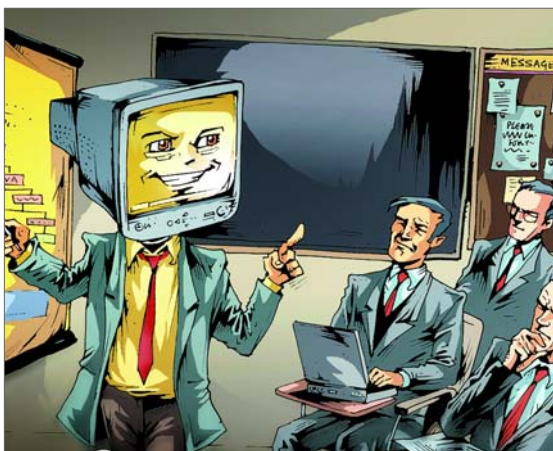
Digital Business

157 Weapons of Mass Promotion

Find out how interactive advertising could be just the right way to pitch your products to your consumers

166 Virtual Classrooms

E-learning is emerging as a vital tool to keep your employees in the loop

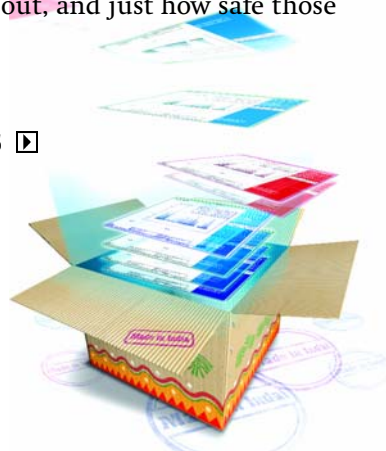


160 How Safe Is Your Credit Card?

Find out how your credit cards work, how online transactions are carried out, and just how safe those transactions are...

162 Desi Office Packs

"Home-grown" Ankur Office, Shakti Office and Netcore Emergic Cleanmail are all set to give Microsoft Office a run for its money



168 Trend

How about social networking in order to leverage your business? Find out about the latest trend to hit the industry

170 Face Off

Should your business stick with Microsoft Office, or investigate the merits of a much cheaper, Indian, solution?

December 2004

Digital Leisure

171 Networking Rural India

Read about how Drishtee generates rural employment in six states through IT-enabled services

171 Move to the Beat

We tested the latest portable music players, and we tell you how to best use them



174 zero1 Awards 2004

It is time to hand out the coveted zero1 Awards. Companies this past year and their innovative products have lined up inside. Find out who made the cut

Escape

186

Shoot live game via broadband

192

The best of the blog world

REGULARS

Geek Dreams: Nintendo DS, a TV watch, Sony PSP and more!40
Net Gain: Wikipedia.org82
Tips & Tricks83
New And Notable74

Old Way Tech Way: Buying Domain Names.....87
Q & A.....102
Setting Up RAID104
Face Off: Office Software170

TQ182
TechCritique183
Mediawise/Adwise184
Inbox.....202
Tabloid Tech204

Contents Interactive

DVD

DIGITAL PASSION

GAMERS

Need For Speed: Underground 2

346 MB Demo: Create your own completely customisable car and race against the top racers in the city



Prince Of Persia: Warrior Within

Use the Prince's new free-form fighting technique to vanquish your enemies



DEV TOOLS

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- Oxygen XML Editor and XSLT Debugger 5.0
- Logidex Visual Studio .NET Add-in 3.5
- InstallAnywhere.NET 3.0

GAME VIDEOS

Halo 2 Multiplayer Documentary

PATCHES AND UPDATES

FarCry 1.3 patch

GAMERS

FIFA 2005



GAME VIDEOS

Halo 2 Multiplayer Documentary

DEV TOOLS

- ConTEXT
- PHP Designer 2005 2.2.7
- DJ Java Decompiler 3.5.5.77
- Perl Builder 2.0c
- Emu8086 Emulator 3.04
- SyncJEdit 1.1
- MySQL Administrator 1.0.12

CONTRIBUTIONS

Desktop Calendar XP
Folder Security

DIGITAL TOOLS

MULTIMEDIA

- AudioEnhance Digital Playout System 3.0
- Cheetah DVD Burner 1.27
- QuickTime 6.5.2
- Windows Media Player 10
- Hero DVD Player 3.0
- Virtual DJ 2.05
- ACDSee 7

INTERNET

- Check&Get 2.2.1
- PrivacyView 1.2.9.4
- Gaim 1.0.1
- Pop-Up Monster Mean & Green 1.0

FROM THE MAG

- Mozilla Suite
- Adobe Premiere Pro 1.5

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Premiere Pro

SYSTEM

- Catalyst Uninstaller
- WinRescue 2000 2.08
- OutSource-XP 2.0.3
- Via Hyperion 4.53
- Intel® Chipset Software
- RadarSync 2 6.8.1
- Driver Genius Professional Edition
- Intel 845/865 Chipset Drivers
- Longhorn Transformation Pack 7
- nVidia ForceWare

FROM THE MAG

- VirtualDub 1.5.10 (stable)
- Quintessential Player
- Opera 7.6 RC1
- Firefox 1.0 RC1
- kldcode pack

MULTIMEDIA

- DivX Repair 1.0.4
- All Media Fixer 3.3
- XMedia DVD Duplicator Pro 4.1.2
- WAV-MP3 Converter Encoder 1.46
- Mp3Doctor 5.11.019
- eMule++ 1.0.4
- Sun CD/DVD Burner 1.25
- MP3 Cutter Joiner 1.04
- Power Video Converter 1.3.8
- DVD-to-Mobile Sony Ericsson Edition
- Xilisoft DVD Ripper 2.0.28
- Rosoft Audio Converter SE 3.6
- Video Caster 3.12

INTERNET

- Real Time Cleaner 2.5
- Pop Up Blocker 6.0.3
- Desktop Software Pop-Up Blocker 2.0
- NetChat 2.1
- R-Wipe & Clean 4.0
- HistoryKill Shot & PopUp Killer 3.86
- Ad-Aware
- Windows Cleaner 1.0
- GuruNet 5.1.3.1452
- SMS BroadCast Manager 1.26

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Ubuntu Linux [522 MB]

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- TSC2 Help Desk 4.0
- Cardfile Connect 1.3
- iMAGIC Inventory Software 1.32
- DKMessenger
- CoreCRM 4.0.7
- VitalCRM Business Contact Manager
- TalkingSafely - IM Monitor 2.1.8

WHITE PAPERS

Fast Ethernet

- Managing HP Servers Through Firewalls With Hp Systems Insight Manager
- New Threats, New Solutions: Enterprise Endpoint Security
- Emerging Threats: Spyware
- Protecting Microsoft Internet Information Services Web Servers With ISA Server 2004
- Accelerating the Internet With ISA Server 2004 Web Caching

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- Advanced Phone Recorder 1.7.4
- World News Screensaver 1.4
- Tool for Organizing Your Schemas
- Service Server 3.0
- Alchemy Eye PRO
- Instant Demo 4.00
- BlindWrite 5.2.6
- PromoSoft 1.23
- Swift POS 3.0
- SmartFTP 1.0.983.9
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DIGITAL LEISURE

BIG GAMES

Painkiller

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RollerCoaster Tycoon 3

Manage your own theme park with this 163 MB strategy game demo

Call of Duty: United Offensive

Sample the newly released World War II FPS expansion for COD. Set during the Battle of the Bulge, this 220 MB demo is a must-play

MORE GAMES

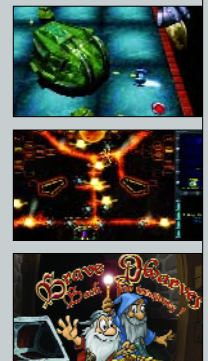
- Battleship Game
- Ricochet: Lost Worlds

MOVIE TRAILERS

- Batman Begins
- Shaun of the Dead

MORE GAMES

- Magic Rings
- Bejeweled
- Cubis Gold
- Dyonomite
- Arcadrome
- Star Defender
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- Brave
- Dwarves Back for Treasures
- Atomaders
- Snowy
- Feeding Frenzy



E-BOOKS

This month's theme: Vampires
5 classic E-books about the undead, including Bram Stokers Dracula, and an exotic translation of Vikram Aur Beta!

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- Desktop themes
- Winamp skins
- WMP skins
- Wallpapers



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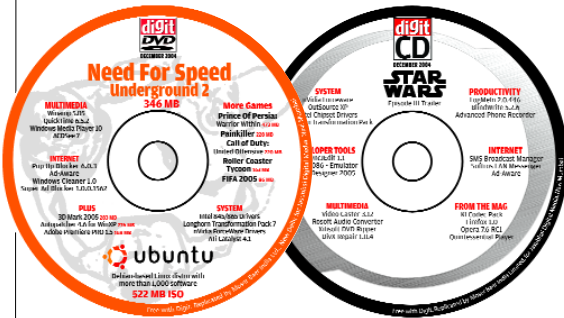
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By Demand

You get to choose what goes on Digit Interactive. This month, you chose:

FIFA 2005

AutoPatcher 4.6 For WinXP



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This Month's Question

How satisfied are you with your IT products, and the service offered by vendors?

- ☐ Never had a problem
- ☐ Had a few problems, service was good
- ☐ Many problems, service not good

Log onto www.thinkdigit.com and vote

Last Month's Question:

How much did you spend on technology (computers, phones, audio equipment, etc.) this year so far?

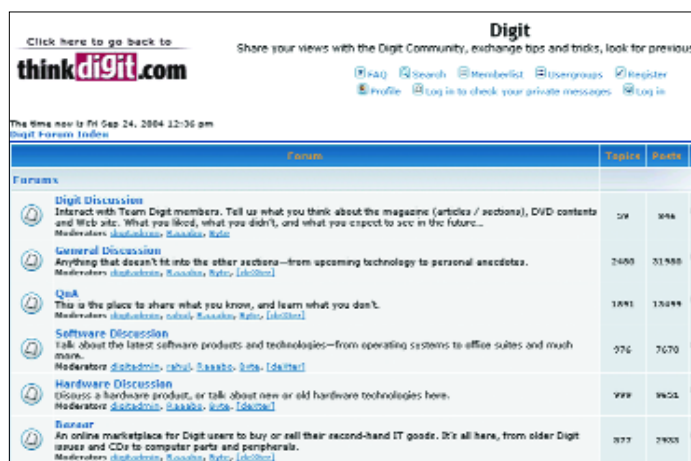


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General Discussion
From Linkin' Park to Doom III, it's all here

Hardware Discussion
The hangout haven for hardware geeks

The PC Becomes Part Of The Family

Arguments over who gets to use the home PC are breaking out in families across the UK, according to a survey by MORI. Ninety per cent of UK families bicker over this. Also, people are warming to the idea that the computer can also be an entertainment hub



AMD Drops The Athlon XP Line

AMD has updated its public roadmap. The biggest change is the dropping of the Athlon XP line. The company is fully committing itself to Sempron, and is adding a couple of new 90 nm-fabrication processors to its line-up.



Enter

Anil Kapoor
Actor

Anil Kapoor has been with us from the '80s, but continues to enthrall audiences with stellar performances. In his career spanning 20 years, he has worked on different themes from *Mr India* to *Nayak*. Anil has survived because he has adapted to the

changing times; does he survive technology too?

What does technology mean to you?

Technology for me is accessibility to one

and all irrespective of economic status. Hence, it is my dream to see at least one computer in every village.

How do you use technology in your daily life?

My office and home are completely wired. I do not allow technology to act as a hurdle to my creativity.

Any gadgets that you own?

I have all the possible gadgets, but no names—I am not brand conscious

What Web sites do you visit?

I'm currently researching my new film on the Internet.

Are your children more tech savvy than you?

You have to see them to believe it. They have grown up with technology, and that makes it easier for them to learn and use gadgets.

The future of technology?

Technology will always help us.

Aparna Krishnakumar

THIRTY FIVE PER CENT GROWTH

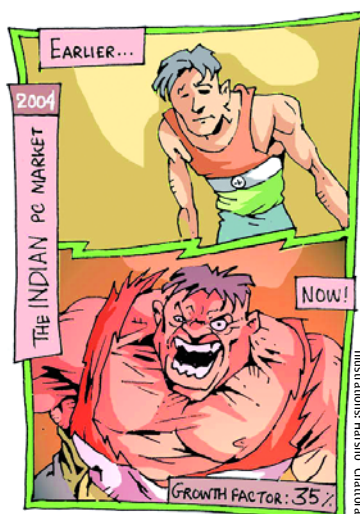
PC Market On Steroids

The Indian PC market grew 35.1 per cent, shipping more than 8.85 lakh units in the third quarter of 2004, according to Gartner, Inc. This includes desktops, notebooks and servers. India's share in the Asia Pacific region increased to 10.4 per cent from the 9.2 percent of the previous quarter.

Desktop shipment grew annually by 32 per cent during this quarter, while notebooks registered a 126 per cent growth. This is in conformation with growth trends observed during the first half of 2004. Small and medium businesses, finance and banking continue to be the growth drivers. "While the corporate market continued to look healthy, top vendors are now seen to be aggressively targeting the premium end of the consumer segment," said Vinod Nair, analyst, computing systems, Gartner India.

Commenting on the notebook market, Nair said, "Local entrants are expected to gain some market share in the short term with price-point advantages over branded players, though quality of after-sales service will be highly questionable."

With regards to future trends, Nair commented, "Some telecom service providers are now tapping avenues to bundle the



desktop with Internet service making it available at affordable monthly plans. If priced properly, this will be a good move to increase desktop penetration and to grow the market in India."

From a market share perspective, Hewlett-Packard maintained top position with 14.3 per cent, followed by HCL with 12.1 per cent. IBM clocked 8.3 per cent market share.

LOCAL INTERNET

Internet Hub To Boost Web Traffic

Plans are underway for creation of a national Internet service hub to connect all service

providers and boost Web traffic. Until now, domestic Internet service providers have had to rely on international traffic routing providers to run their Web sites.

Information and Technology Minister Dayanidhi Maran said the policy will help to "proliferate the Internet," as domestic service providers will be able to reduce the cost of traffic routing and improve service for subscribers.

The National Internet Exchange of India (NIXI) is being formed by the government in partnership with the Internet Service Providers Association. Currently there are about 25-30 million Internet subscribers, which the government hopes to boost to 40 million by 2010.

The government has also simplified rules for registering domain names in India to facilitate hooking up to the nationwide Internet exchange. From January 2005, firms will be able to get .in domain names online and complete the registration process in less than 24 hours.

Maran says the National Internet Exchange will help increase Internet speeds and cut tariffs, as most Internet traffic can now be generated inside India. Industry service providers have hailed the move as a boost for the business,



Security Watch

Java Vulnerability

The Problem



A flaw in Sun's plug-in for running Java on several browsers and OSes

could allow a virus to spread through Windows and Linux PCs. This flaw allows a malicious Web site accessed through a victim's browser to bypass the Java plugin's protections. The Java plug-in enables small programs known as applets to run safely on a user's computer. However, the flaw allows execution of attacker-supplied code without user interaction, apart from, of course, viewing the malicious page.

Damages

Security information provider Secunia rates this flaw "highly critical." An attacker could use this flaw to do anything the victim normally could, including browsing, modifying or running files, uploading programs to the victim's system, or sending out data from the system.

Precautions

There is no workaround to the problem. Visit <http://sunsolve.sun.com/search/document.do?assetkey=1-26-57591-1> for details on how you can protect your system. This involves upgrading to the latest version of Java 2 Platform, Standard Edition (J2SE), the link to which can be found at the address above.

which is reviving after thousands of e-commerce and other dotcom ventures folded due to high costs and poor demand. "The policy will definitely give us a boost. If you don't have a robust Internet infrastructure, it can doom any country's future," says Amitabh Singha, president of the Service Providers Association.

DOMAINKEYS

Sign your Yahoo! Letter

Yahoo! Inc is deploying the DomainKeys e-mail signing technology worldwide, and has announced tentative support from rival ISP EarthLink Inc. The company said it has completed two-way DomainKeys support in its US-based Yahoo! Mail service, and is in the process of rolling out support across its international domains.

"In the US, we are signing messages with DomainKeys and are

checking messages with DomainKeys signatures," said Yahoo spokesperson Terrell Karlsten. "On the international side we are checking, and are deploying signing."

DomainKeys, created by Yahoo! and currently under consideration for standardization by the Internet Engineering Task Force (IETF), is designed to protect e-mail users from e-mail-borne threats—which spoof the address of the sender—such as worms and phishing attacks.

Senders create a cryptographic key pair and publish the public key in their domain name system record. They then sign outgoing mail with their private key, so recipients can authenticate, with a simple lookup, that the sending address is legitimate.

EarthLink said that it is testing the technology. The ISP is also a supporter of Sender ID, a related proposal from Microsoft and Pobox.com.

WELCOME, XBOX

Xbox To Come To India

Widely popular in the US and elsewhere, the Xbox is making a late entry in India. Microsoft recently carried out a survey with the IMRB (Indian Market Research Bureau) to explore the gaming market in the

HOT

Games



Half-Life 2, Doom 3 and their kin give us a chance to experience real eye-candy when gaming. The graphics are just breathtaking, and realism is fast approaching a monitor near you

Gaming Hardware

NOT

The hardware required to play the latest games is just too expensive.



If the cost of a high-end graphics card isn't enough, we also need new computers to be able to afford PCI-Express and the likes

country, after which they planned to launch the device.

According to Sanjeev Jha, country manager, Sujata Softech, the Xbox had not yet been launched in India due to the relatively low broadband penetration.

The Xbox will be available in a week from its launch, at a price range of Rs 12,500-13,000. Each game for the Xbox can cost anything between Rs 2,000 and Rs 3,000.

IT INNOVATORS

NASSCOM Spots Top Indian IT Innovators



One Silly Question

If computers could talk, what do you think they would say?



Shut Down
Ruchir Khare, Ratnagiri



Finally!!!! I can voice my data aka thoughts... What took you so long?
Mihir Hardikar, Mumbai



You can do nothing without me—I am smarter than you are
Pravin Bajad, Mumbai



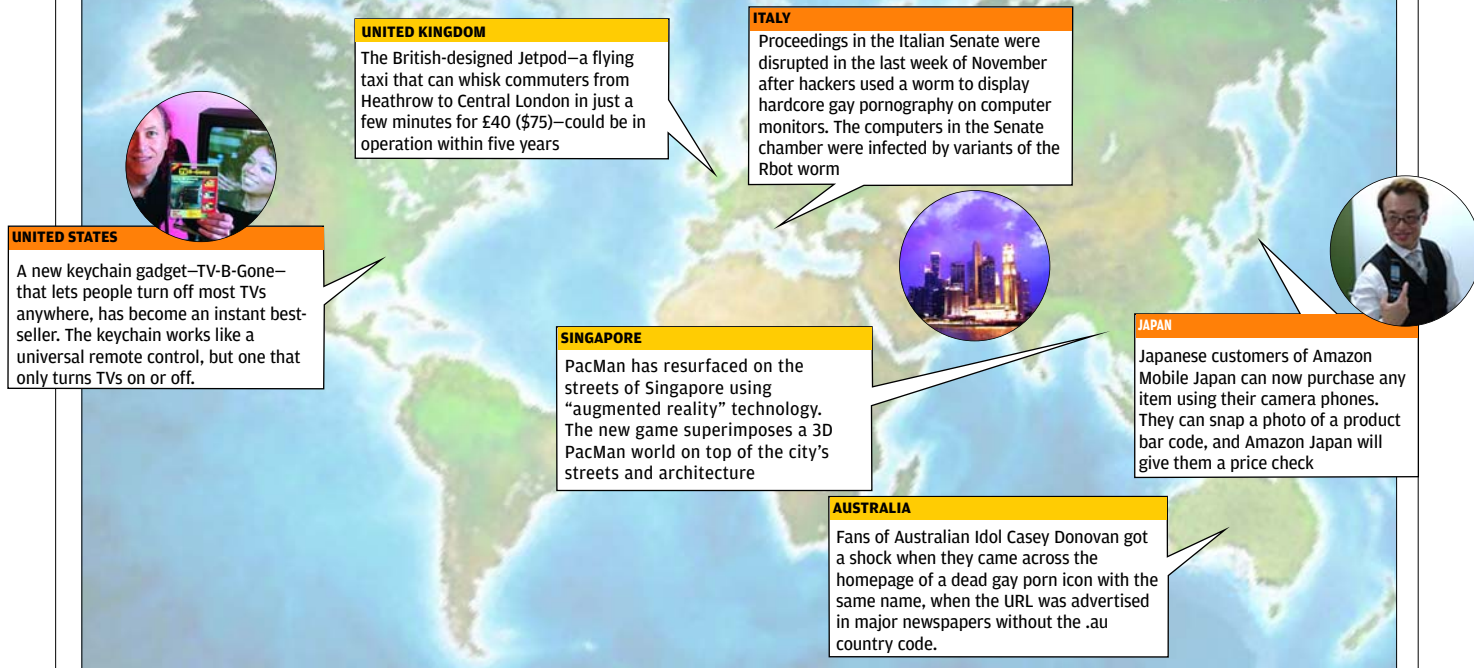
There's a bug! REBOOT!
Gautam Jain, Mumbai



SENSE (they would make sense)
Ashish Razdan, Kashmir

 The Digital World

A Round-up of Technology News from Across the Globe



National Association of Software and Service Companies (NASSCOM) President Kiran Karnik’s favourite anecdote these days is the one about how washing machines are being used in some parts of Punjab—*dhabhas* use them to mass-produce *lassi*! “If there is innovation happening anywhere, it’s in our country,” proclaims Karnik.

Reinforcing their commitment to “invest in innovation,” NASSCOM recently turned its attention to the Small and Medium Enterprises (SME) segment in India, which they estimate will generate nearly 50-60 per cent of IT revenues by the year 2008.

As part of the activities organised by the SME Forum, NASSCOM conducted the “Spot the Star” event across the country to identify SMEs companies that had the potential to make it big. Shortlisted companies made presentations to a panel of experts who in turn, gave their feedback. The “IT Innovation in India: Showcasing Emerging Companies” event

conducted in New Delhi, Mumbai and Bangalore identified the top six innovators for 2004:

Srishti Software (www.srishtisoft.com)—A Bangalore-based Knowledge Management, Application Integration, Open Source and e-Business Consulting solutions provider.

Liquid Krystal India (www.liquidkrystal.com)—Liquid Krystal’s CodeSaw provides a digital workspace where IT learning is a hands-on experience.

PACE Soft Silicon (www.pace-softsilicon.com)—Develops value-added multimedia products, applications and architectures for packet-based wireless applications.

Compulink Systems’ (www.compulink.co.in) Whizible ProjectByNet is an enterprise-wide Services Execution Management (SEM) solution that helps service-centric organisations automate their key business processes effectively.

Whizlabs Software (<http://www.whizlabs.com>)—This Delhi-based company

 Three Incredibly Useful Sites

Hardware Information and Reviews

tomshardware.com**Tom’s Hardware Guide**

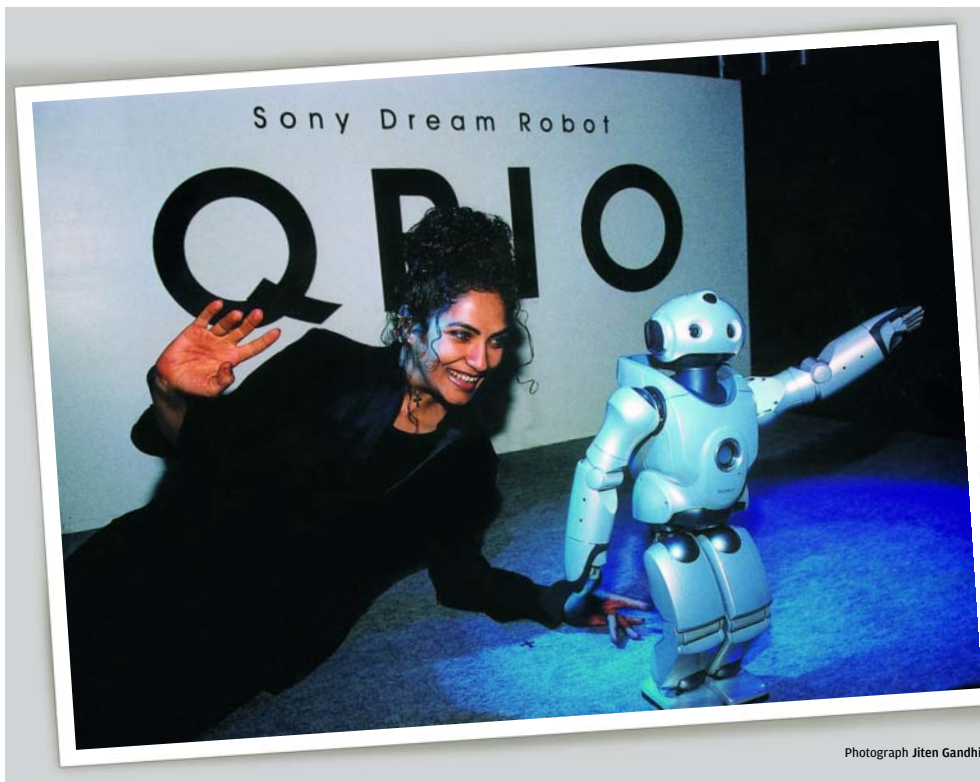
This site is an almost comprehensive site for everything hardware—for those of us who aren’t techy enough, and need things explained to us. From motherboards and RAM to networking and games, from graphic cards to peripherals, from articles to how-tos, you’ll find it all here

www.anandtech.com**AnandTech**

If you’re about to buy something—a technological gadget, that is—this is the place to go. Just like in Tom’s Hardware, there are reviews, insider stories, news and views, and so on, about almost everything—from CPUs to chipsets, Linux to digital cameras, and on and on and on.

www.techreport.com**The Tech Report**

This site is similar to the two above, except that it focuses more on insider news, stories and discussions. If you want to stay up to date with the state of the art of personal computing technology, this is the site for you. Nothing is left out—be it printers, processors, P2P networks, or what have you.



Photograph Jiten Gandhi

Beat That!

Digit Caption
Sorry lady, you're not my type. Next!

Every month, *Digit* will carry a caption for a photo. Come up with something funnier, and beat the *Digit* team at their own game!

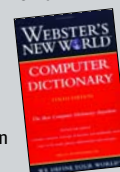
Last Month's Winner!

Unfortunately, no one could send in a caption witty enough to be adjudged winner. Better luck this time!

Send your captions to beatthat@thinkdigit.com and win a book:

Webster's New World Computer Dictionary

by Bryan Pfaffenberger
Published by Pearson Education



provides e-learning content, tools, and services. Their focus is on IT Certification exam preparation for individuals and IT Skill Assessment and Enhancement for corporates.

Beehive Solutions (www.beesys.com)—conceives solutions for the broadcast media, useful in newsgathering, digital newsrooms, automated 2D & 3D data graphics, interactive TV and digital logging and archiving.

Speaking at the Mumbai edition of the event, Jerry Rao (NASSCOM Chairman) reiterated Karnik's view that "aspiration lies in small companies."

Meera Vankipuram

GURGAON WHIZ KID

India's First Mobile Gaming Champ

Sachin Sapra from Gurgaon is India's first

mobile gaming champion. A six-week long nationwide hunt, the N-Gage QD Challenge Mobile Gaming Championship with a grand prize of Rs 10 lakh, identified Sapra from amongst 62 top mobile gamers from all over India.

Sapra recorded a score of 4240 while playing "Hero Commando" on the N-Gage QD, Nokia's latest gaming device. First runner-up Mohammad Abdul Rahim Akbar from Chennai, took second place.

Launched on 14 September 2004, the N-Gage QD Challenge Mobile Gaming Championship attracted 26,000 participants from over 40 cities in India.

Meera Vankipuram

VERTU AND BOSE

Style Is Everything

The Indian elite have two more excuses to preen themselves—one goes by the name of Vertu, perhaps the only "luxury mobile phone"

in the world, costing upwards of Rs 2.5 lakh, up to a whopping Rs 15 lakh!

Poised to be more of a status symbol than a high-tech gizmo, the Vertu enables only voice calls, SMS, and a calendar—no camera phone, no fancy tech-trappings. Made of Liquidmetal alloy (the kind used on US Space Shuttle missions), Vertu phones are handcrafted in Vertu's UK workshop.

A subsidiary of Nokia Corporation, Vertu is based

in London with retail outlets in over 20 countries. In India, the phones will be sold only by exclusive Vertu franchisees—Regent Watch and Jewellery stores, located at The Maurya Sheraton in New Delhi, and the Taj Mahal Palace in Mumbai.

The platinum-cased Vertu Signature model costs about Rs 14.7 lakh; the yellow gold version costs Rs 8.5 lakh. At the Mumbai launch, Vertu Marketing Communications Director Constance Chew pointed

Best Buys



Palmate Mini PDA for Rs 599

This looks like one cool device. It's tiny, and we mean tiny! It's available

at <http://shopping.rediff.com/shopping/events2004/valustore/valu-2-3-0-0-0-1005071.htm?frompg=discountstore>. What's more, you're being offered a 1 year warranty as well. Sure, it's no Palm Zire, but hey, it's so tiny and cool looking, no one will notice! (www.mini-pda.com)

A slim DVD/MP3 player

One of our picks on Baazee is the 38 mm slim DVD/MP3 player with progressive scan. Some of its features are pure cinema progressive scan, twin-wave laser pickup, DVD/ SVCD/ VCD/CD/DVCD/MP3, photo viewer (JPEG playback), full function remote, Dolby virtual, Dolby AC-3 decoding, etc. At Rs 2,750 it offers you a 38 per cent saving as against the regular market price. Rush! The offer closes 4 December, 2004 at 3 PM.



A Selection Of Best Offers From Popular E-commerce Sites



The Bose Lifestyle 38 and Lifestyle 48 Home Entertainment suite

out, "While ordinary mobile phones have only 80 to 100 parts, Vertu's internal structure features more than 400 mechanical parts."

Yet another lifestyle product to hit the Indian

market is the Bose Lifestyle 38 and Lifestyle 48 Home Entertainment suite (approx. Rs 2 lakh), which features the uMusic Intelligent playback system. uMusic organizes and stores

200-340 hours of music in the system, and can "learn" a user's individual listening preferences and play songs from the database accordingly.

Says Ratish Pandey, General Manager, Bose Corporation India, "People associated us with high-end speakers till 1990. Today we are offering an integrated home theatre system that fits into the lifestyle segment, with an intuitive playback system to enhance user experience."

Meera Vankipuram

IT TRENDS

Customised HRD Solutions

"We don't believe in training people *en masse*," asserts Sheila Vasan Singla, founder of Chrysalis HRD, a customised training solutions company based in Gurgaon. Specialising in "Human Performance Improvement" (HPI), Chrysalis has trained over 20,000 people across 50 organisations in India.

What sets this HRD organisation apart is their customised training programmes, specific to the IT industry's requirements. With major clients such as Hutch, Airtel, Reliance and most major BPOs who use e-mail and chat services to communicate with customers, Chrysalis has developed unique solutions

customised for the industry.

Stress management for customer relation executives, effective handling of irate customers, increasing efficiency of call-centre employee (increasing number of calls per hour), efficient methods for team leaders to manage multi-cultural teams, and women's empowerment modules are some of Chrysalis's offerings.

The company has developed a unique set of business drivers and distinct areas for performance improvement, and customizes HPI solutions on the basis of these parameters.

With a 21-member team (including clinical psychologists, psychometricians, marketing executives and trainers) based in Gurgaon and Mumbai, Sheila believes in keeping the Chrysalis family "small and effective."

Meera Vankipuram

MOBILE DIGITAL SECRETARIES

A Smarter Smartphone

Under trial in the US are smartphones that learn the user's daily habits so they can become "mobile digital secretaries." The technology is the brainchild of Nathan Eagle and Sandy Pentland of MIT. The system is based on mobile messaging software called Context, written by developers at the University of Helsinki and the Helsinki Institute of Technology. The software builds a profile of a user's routine by asking them what they're up to when they come into range of a new mobile mast.

Such a "smarter smartphone" would learn about people's preferences by logging calls and noting when applications, such as the camera, are used. Location-based functions would allow the phone to keep a record of where one works and socialises. The phone could also make note

GENDER



BENDERS

Glenn Sequeira vs Kim Nagotkar Disable All Alerts In MSN Messenger



2 min
09 sec

"How long will it take?" was his hesitant question as he sat down at the terminal. On being told the task, he brought up MSN Messenger and began searching its menus. Perhaps it's in the Action menu, Umm no luck here. Tools? Yes, it does have Options... In the options dialog now, where are the alerts? There in the General tab. Finally, task accomplished.



3 min
36 sec

Nervous but quite sure of finding her way about, Kim looked pensively at the monitor. Where is MSN Messenger here? A minute later, she was perusing its menus. Was it in the File menu, or was it the Help menu? Ah yes, of course the Tools menu. a few quick mouse-clicks later, she was at the General tab and had disabled the alerts. Whew! Done at last.



Sheila Vasan Singla, founder, Chrysalis HRD

Photograph: Meera Vankipuram

of Bluetooth pairing bonds, allowing it to build a profile of who one socialises with. This information would be sent to a server that processes data and returns suggestions or reminders.

The new smartphone is being touted as a device that predicts what one will do. *New Scientist* reports that possible applications include reminding you not to drink too much the night before an important presentation.

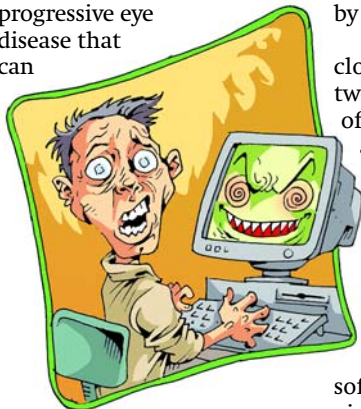
New Scientist reports that the software has been installed on a hundred Nokia 6600 smartphones in a trial involving MIT students. Data is downloaded onto a server at MIT and processed using pattern recognition software. Scientists think that the phone can help students work out how long they have spent partying and working in a week, etc.

Results from the trial could be useful to technologists as well as researchers investigating how social networks build, *New Scientist* reports.

GLAUCOMA RISK

Computers Can Make You Blind

Researchers from Tokyo's Toho Medical School have warned that people who spend long hours in front of the computer screens and have existing eye conditions have the risk of developing glaucoma. Glaucoma is a progressive eye disease that can



lead to blindness.

This dramatic discovery contradicts years of advice which suggested that gazing at computers did not damage the optic nerve.

The results emerged from a study in Japan of 10,000 workers with an average age of 43. It found a statistical link between heavy computer use and eye problems that presage glaucoma. The problems were more common among staff with existing vision defects.

The researchers also found a significant statistical link with heavy computer use among myopic workers. They suggested that the optic nerve in myopic people might have a structural condition that renders it more susceptible to computer stress than non-myopic eyes.

P2P AND PIRACY

MPAA Hopes Parents Will Snoop On Kids

In its latest initiative, the Motion Picture Association of America's hopes that its new software will encourage parents to turn over their file-sharing children to the authorities.

The software, designed to identify potentially copyright-infringing material on a home PC, is part of the MPAA's war on file sharing, and will be released for free by the MPAA.

Last year, the MPAA disclosed they had developed two pieces of spyware; one of which could invade a PC, and then tag and destroy MP3 files. This was not really a threat, because any such software would be criminal, and the MPAA would have had to face a barrage of lawsuits. But by hoping that parents will install the software themselves, thus giving consent, the MPAA

hopes to get round its most pressing problem: it doesn't know who the infringers really are. The goal of the RIAA seems to be this: an anxious parent acting as informer in every home.

SUN'S LATEST OS

Sun Frees Solaris 10

Sun Microsystems launched the latest version of its Solaris OS at its fourth quarter Network Computing event in San Jose, California.

The launch comes after previews by thousands of customers as part of the Sun Software Express for Solaris program, during which, Sun says, more than a half million copies of the product were installed.

Sun CEO Scott McNealy revealed that Solaris 10 represents an investment of 3,000 engineering years and over \$500 million in research and development.

Despite the cost, Sun



plans to make commercial grade Solaris 10 available for SPARC, x86, AMD64 and EM64T systems as a free download by end-January 2005. "Zero cost means zero barriers to entry," explained McNealy. "Revenue will instead be derived from a range of support services."

Jonathan Schwartz, COO of Sun, said there are five operating systems in the market, but only Solaris 10 provided what Sun hopes will be a winning combination of containers, military-grade security, an innovative file system and full support for x86 systems.



What is Longhorn?

Longhorn is slated to be the next release of the Windows operating system. It will have significant improvements over earlier versions. This includes a brand-new and better file system optimised for search, called WinFS; a new communications subsystem inbuilt, which integrates Web services into the OS, called Indigo; and a new graphics architecture, called Avalon.

How will Longhorn be shipped?

It is strongly rumoured that since development on Longhorn has been slow, and since the architecture is modular, WinFS and Avalon might be dropped from the Longhorn release. There has been a lot of speculation in the industry about what will eventually ship. Some have called the stripped-down version "Shorthorn."

Who is developing Longhorn?

Of course, Longhorn, as the successor to Windows XP, is being developed by Microsoft.

Why do we need Longhorn?

Longhorn is touted as Microsoft's best operating system thus far. With all its modules in place, Longhorn will support fast and efficient search, better graphics with Direct3D support, integration with Web services, and more.

When will Longhorn be out?

Microsoft is pushing for a 2006 release of Longhorn.

Where can I find Longhorn?

You can find the Longhorn Alpha release on P2P networks. Obtaining it this way is, however, illegal. There is something called the Longhorn Transformation Pack version 7.0, available from several Web sites including http://www.soft32.com/download_3720.html. The Longhorn Transformation Pack updates XP with the latest Longhorn GUI by adding some themes and patching some system files.



47 Speed Demon
Chandhok



48 Half-Life 2
Reviewed



53 A \$100 PC?
Maybe!

Digital Passion

Fuelling the pursuit of technology knowledge

Lead Feature

Tech Review 2004

A look at the year gone past, highlighting five of the biggest trends, the best technologies, the largest IT-shaking events, and the most influential people

Ahmed Shaikh

TREND > CONVERGENCE OF CELL PHONES, PDAs AND CAMERAS

1

The All Conquering Cell Phone

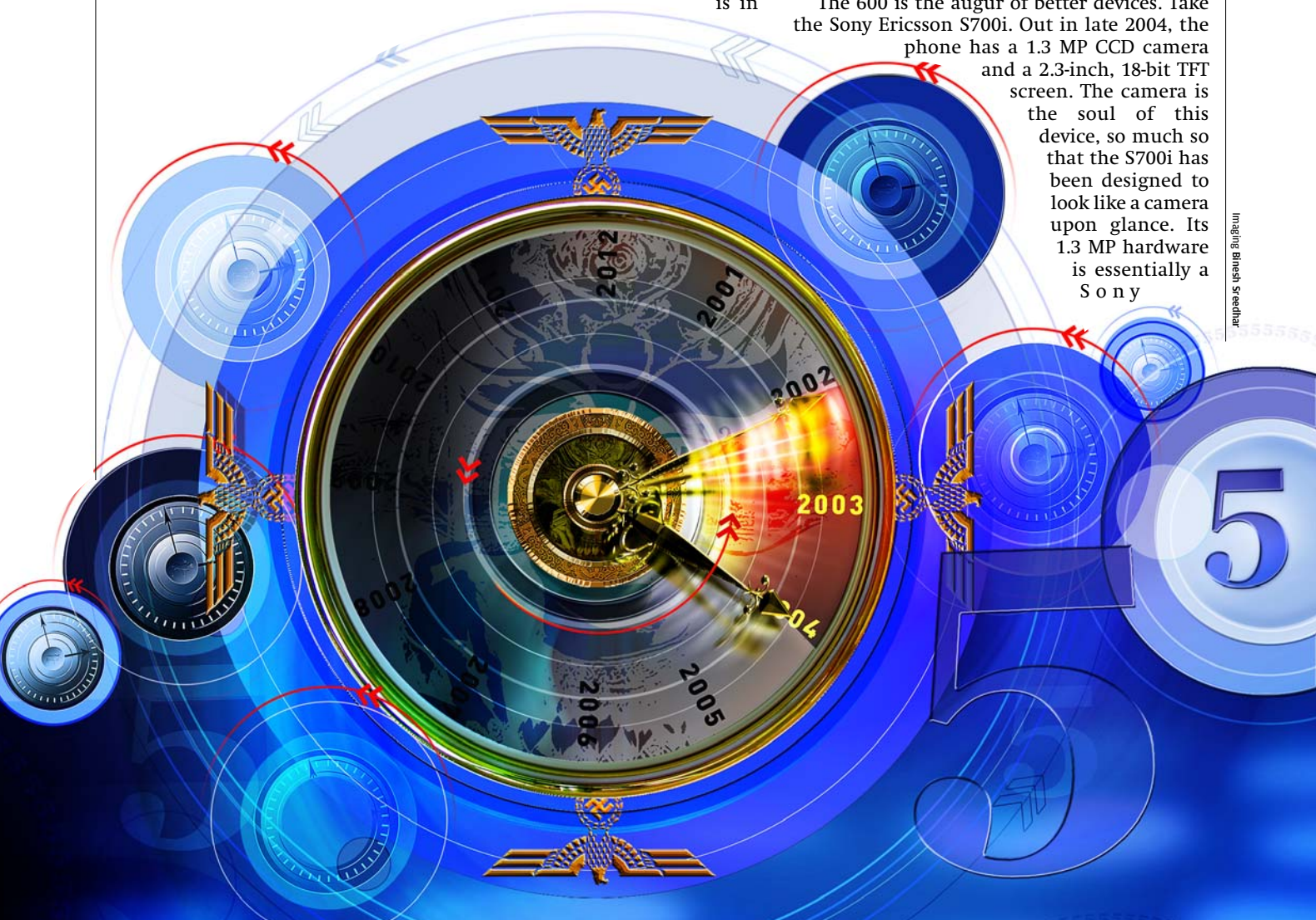
The idea of a single electronic device which can handle sundry tasks is very attractive. The negatives of such a "convergent" device aside, the concept has taken roots and devices are sprouting left and right. The biggest showing is in

the cell phone space. The past year has seen models which bring together the functionality of three separate devices: cell phones, cameras and PDAs. Successful devices from all major vendors were launched in 2004.

The PalmOne Treo 600, in particular is very well received hardware, intelligently integrating PDA and phone functionality in a "phone-like" form-factor, complete with a QWERTY thumbboard and built-in camera. (See our review of the Treo 600 on page 75)

The 600 is the augur of better devices. Take the Sony Ericsson S700i. Out in late 2004, the phone has a 1.3 MP CCD camera and a 2.3-inch, 18-bit TFT screen. The camera is the soul of this device, so much so that the S700i has been designed to look like a camera upon glance. Its 1.3 MP hardware is essentially a Sony

Imaging Brush Sr edha



CyberShot camera integrated into a phone—the CCD image sensor along with an 8X digital zoom snaps pictures of an excellent quality for a device which is “also a phone.” Add to that the tri-band phone capabilities, the HSCD and GPRS connectivity, Infrared and Bluetooth, an XHTML web browser, an FM radio, an MP3 player, and a video player. The math is simple—the S700i can perform ably as a camera, a phone and a PDA.

When a phone is designed to handle such multiple sources of data, storage becomes an essential element. Indeed, hard disk-based cell phones are trickling in. Samsung’s SPH-V5400 has a mega-pixel camera and a 1-inch, 1.5 GB hard disk drive. It was recently unveiled for the South Korean market. Also from Samsung is the SCH-S250, which offers a 5 MP CCD-based, digital camera-cum-camcorder, with a shutter speed of 1/1000th of a second, a macro mode of 10 cm and 92 MB of internal storage.

Where does that leave the PDA and the camera as discrete devices? For an average user, a convergent device will suffice and indeed replace discrete units. Will such convergent devices proliferate though? Phone carriers such as Airtel and Orange are known to subsidise their cost, so proliferation is solely in the hands of carriers, especially in price-sensitive markets such as India.

Thus, for the majority of us, a cell phone will eventually replace both the PDA and the camera.

TECHNOLOGY > DUAL-CORE PROCESSORS

Gigahertz Is Dead

“By mid-decade, the Pentium PC may need the power of a nuclear reactor. By the end of the decade, you might as well be feeling a rocket nozzle than touching a chip. And soon after 2010, PC chips could feel like the bubbly hot surface of the sun itself,” straight from the mouth of Patrick Gelsinger, Intel’s Chief Technology Officer.

Technology hasn’t been too kind to the processor, the heart of a computer, this year past. Faster chips have been crammed into shrinking spaces, resulting in monsters which greedily consume electricity and belch out enormous heat. The problems were so dramatic, especially for Intel; that a complete rethinking was in order—the 4 GHz Prescott was scrapped and the “Gigahertz is God” mantra unceremoniously dropped. After all, nobody wants the Sun inside their PC cabinet.

Thus, instead of making faster trucks to transport cargo, chipmakers will now offer a greater number of trucks which will move relatively sedately but in parallel, effectively performing the same work as their faster predecessors. This analogy translates to using multiple cores within a processor rather than using a single core running at 3+ GHz speeds.

A dual-core solution will be the herald of this thinking to our desktops, come next year. Such a solution effectively gives you two, nearly independent processors. Each CPU will execute different parts of a program. While this may not always double the speed of a single task, it will definitely improve overall performance.



The Treo 600 is amongst the most successful PDA-phone hybrids

EVENT > INDIAN IT COMPANIES CROSSING THE US \$1 BILLION MARK

The Billion Dollar Club

Last year saw the formation of the so-called Billion Dollar Club, then a collective of one, namely the privately-owned Tata Consultancy Services (TCS). This year witnessed the inculcation of two public companies—Infosys and Wipro Ltd. TCS’ revenues stand at US \$1.2 billion, Infosys’ at US \$1.08 billion and Wipro’s at US \$1.35 billion.

Why is this important? Firstly a billion dollar revenue is a good, healthy number, something a CEO of an IT company can proudly display on his visiting card, we imagine. More importantly, this three-member group, with billion dollar pockets each, will only seed and proliferate the Indian job market. TCS, for example has 24,000 employees working in 100 branches across 32 countries; while Infosys, as of mid-2004, employed 25,600 people.

While engineering and technology is taking away blue-collared jobs (the Indian automobile



TCS, Infosys and Wipro have all crossed US \$1 billion in terms of revenue

industry, for example recently underwent job cuts while simultaneously increasing production), the IT industry is hungry for more and is snapping up people faster than our colleges can churn them out. Recently, TCS, Infosys and Wipro jointly hired 14,000 new workers, almost as much as the entire workforce of Bajaj Auto and Maruti combined. IT sales are projected to rise between 30 and 35 per cent annually, which can only create more jobs.

There are other benefits—over 20 per cent of the employed workforce at Wipro, for example is comprised of women. IT is a good leveller.

Finally, if India has to put some money where its “IT superpower” mouth is, billion-dollar companies are an important milestone on the long road ahead.

PEOPLE > PRADIP BAIJAL, CHAIRMAN OF TRAI

Connecting People

Baijal Pradip, chairman of the Telecom Regulatory Authority of India (TRAI) had stepped into a mess. Wireless in Local Loop was the new kid on the block when he took charge and telecom



“After 2010, PC chips could feel like the bubbly hot surface of the sun itself” Patrick Gelsinger, Intel’s CTO

rates mixing GSM/CDMA/WLL offerings required a degree in advanced math for understanding, along with the proliferation of tariff plans, a consumer was left bewildered.

Baijal did not wave a wand and make it all better. Nothing so romantic; he was a newcomer to this telecom regulation business, fresh from the Indian bureaucracy. He was, thankfully, not averse to looking for help, and thus he engaged outside consultants, often from foreign countries, to gain insights into global best practices—something none of his predecessors cared to do. Little by little, he fixed things.

First to be weeded were the tariff plans. TRAI put a cap on the number of plans that can be offered at any point of time by the access providers (25 was the magic number). Baijal opined that the reduction in tariffs would increase penetration, pointing out that there were 10 million mobile connections in 2002 a number that leaped to 30 million in 2003 as tariffs dropped.

Under Baijal, TRAI wants to connect every Indian together. Convergence of services is where TRAI is heading. As a milestone to that road, the idea of a unified license was given birth. This would allow conversion of all telecom licenses into unified licenses enabling any operator to offer any type of service.

With such a device in place, there would be only two types of services, fixed and mobile. Any mobile service; whether WLL or cellular would simply be recognised as “mobile service.” But this suggestion was not limited to phones: “Unified license implies that a customer can get all types of telecom services, from a unified license operator, technology permitting. These services would include telephony, Internet, broadband, cable TV, DTH, TV & radio broadcasting.” Baijal spoke of the recommendations: “...you’ll realise that we have created an enabling regulation. We have also taken into account future aspects like convergence. If things work out, a cable TV provider may be able to provide telecom services too (vice versa too would hold good) under the unified licensing regime.” What TRAI has proposed under Baijal is a proliferation of choice, and choice, as we all know can only be good for the consumer.

We salute Baijal and his associates at TRAI for ensuring that the power to choose remains with the consumer.

TREND > Falling Hardware And Software Prices

Technology For Cheap

Cheap is in. In 2004, affordable laptops triggered a domino effect of cheap hardware across the PC spectrum. Afraid to lose market share to laptops, OEMs slashed prices of desktop computers. Today, you can buy a good desktop PC for less than Rs 20,000.

Software has also followed the trend. The Open Source movement has brought great software at the best price—free, to our desktops. OpenOffice.org for a great office suite, Firefox for a great Web browser, Thunderbird for a great e-mail client, and countless other small and eminently usable programs await your use.



The effects of this trend have been telling. Sun recently announced that Solaris 10, its latest cross-platform OS which cost them over US \$500 million to develop will be distributed free. Sun is also committed to release the source code for Solaris 10 to the community. Microsoft has also been forced to be more sensitive to price. While Windows XP Starter Edition may be emasculated, it is a positive step towards lowering the price of Microsoft’s platform.

Cheap is indeed in.

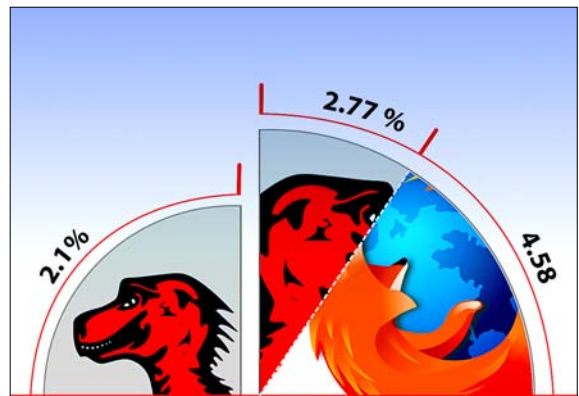
TECHNOLOGY > WEB STANDARDS

Return Of The Standards

During the Browser Wars between Netscape and Microsoft, Web “standards” took a beating and the W3C was often rolled over.

Today, something strange is afoot in the Internet space. Bit by bit, the Web is reclaiming the standards and this time, no single company is influential enough to spoil the party.

It all boils down to the fact that there isn’t a single, widely used service on the Web. Take Web



According to OneStat.com, standards compliant Mozilla has seen its share shoot to 7.35 per cent from 2.1 per cent in May 2004. Out of which 4.58 per cent belongs to Firefox

mail as an example: Hotmail, Yahoo! GMail, Outgun, Hotpop, Lycos, Netscape, Rediffmail, Indiatimes... you have choice. When there isn’t a dominant player to dictate its agenda, standards survive and thrive.

Today, creators are dictating the field. Why should a programmer, for instance, code for two different Web browsers just so his Web site is usable by the majority? Standards such as HTML, XHTML, CSS, Javascript, XML and PNG are thus enjoying wide-scale adoption by Web programmers and designers. Up and coming browsers: Firefox and Opera for the Windows platform, Safari for the Mac world are swearing by W3C compliance for the sake of the creators and their audience. These tools are in turn used by the creators for the compliance offered and the circle completes.

Even Microsoft, whose Web browser is arguably the least compliant, is embracing the idea. Its adoption of XML within the MS Office suite is a prelude to things to come; its C++ compiler is the most compliant of the lot. Rising Firefox installs (reportedly, Firefox 1.0 was downloaded more than 1 million times on the day of

its release) is forcing the team behind Internet Explorer to sit up and defend their creation (<http://blogs.msdn.com/ie/>). The next version of IE will need to be more compliant to standards or further lose market share.

Standards are coming.

EVENT > SENDER ID AND DOMAIN KEYS

Fighting Spam

A report, released May 2004, stated that 80 per cent of all e-mails in the United States were spam. The US, incidentally is the largest exporter of spam e-mail. A related article by the author of *Faster*, James Gleick threw some startling figures: 10 billion spam e-mails are sent every day; 30 billion are expected by 2005. You have been spammed; you know it isn't pretty.

Spam is largely driven by spoofed e-mail addresses. How many times have you received a spam from a friend's or a colleague's mail address? By spoofing an ID from your list of contacts, a modern-day spam bypasses filters you may employ—be it a blacklist, a whitelist or a combination. The idea then is to certify a user as genuine and his/her mail as authentic... which is where anti-spam identification systems step in.

Sender ID was one such system, spearheaded by Microsoft. It was however rejected by the Internet Engineering Task Force, the Apache group and AOL. The concern was over the fact that Microsoft held key patents on Sender ID and its licensing terms weren't Open Source friendly. In the current climate of software IPs and SCO-style litigations, the industry felt it wise to step away from the proposal. Microsoft revised the same, narrowing the scope of the patents and offering backwards compatibility with existing systems. The revision has seen AOL sign-on to Sender ID, while Apache is still on the fence.

Yahoo! meanwhile has proposed a system based on a public/private key encryption system called Domain Keys, this system has at least one major backer—Google in addition to other e-mail service providers. The Web is thus fragmented on an effective anti-spam method. Meanwhile, the mails keep flooding in...

PEOPLE > KRISHNA BHARAT, PRINCIPAL SCIENTIST, GOOGLE INC.

Father of Google News

Krishna Bharat is a Principal Scientist at Google Inc. 2004 saw him pack his bags and move to Bangalore as one of a triumvirate, heading a recently unveiled Google research and development centre there.

Krishna is of course the creator of Google News, the online news aggregator which has empowered people, ruffled the feathers of journalists and bagged a Webby Award. Google News is a content aggregator—Web spiders running on algorithm-powered legs, scour the Internet and some 4,500 news sources and gather relevant content. The magic lies behind the definition of "relevant". As Bharat puts it, "As with Google's Web ranking, relevance is determined by information retrieval techniques that look at the distribution of words in the article and



Bill literally receives four million pieces of e-mail per day, most of it spam

Steve Ballmer, Microsoft Chief Executive on Bill Gates



surrounding pages on the Web. If the article matches the query well it is deemed relevant and gets a high score. Other factors include the importance of the source, timeliness of the article, and importance of the news story, relative to other stories in the news currently."

He created Google News out of frustration; he says that the task of fishing for news amidst the Web's endless flow of information was very tiring. The Bangalorean, who did his Ph.D. in Computer Science from Georgia Tech in 1996, says he wrote for his campus newspaper during his B.Tech days at IIT-Madras. Bharat is passionate about journalism, as a news junkie, he had also developed an interactive, newspaper powered by Java in 1994. The Krakatoa Chronicle, as he called it, was able to tailor content according to users taste: it would, for example note that you spend a lot of time reading on sports, the Chronicle would remember that, and the next day the newspaper would look different. "In a second life, I would like to be a journalist," he has once been quoted.

The Google centre at Bangalore will mirror Google's other offices. It will undertake projects in data mining, data warehousing, business intelligence and knowledge management.

TREND > SEARCH TOOLS FOR THE DESKTOP

Google On Your Desktop

What would your life be without a search engine? Google has become a verb, keywords your mantra.

Now think of how cool it would be to extend that power to information sitting on your own computer, or on your local network. That thesis you were working on? Can't remember the name but it contained "plate tectonics" in the body... Wouldn't it be great if you could type in a few words, press [Enter] and after an eternity that spans milliseconds, ta-da—your document right in front of you, like magic!

It would indeed be great and the technology is here: save from hiding under a rock, you know about Google Desktop, you have probably given it a whirl (you should!). It's Google on your desktop, just like the name says but it is beta software, thus has a limited range of files which it can index. We will forgive it its growing pains and look elsewhere, for desktop search clients have mushroomed: Copernic Desktop Search, Filehand, blinkx, dtSearch, dowsr, and X1 to name the most popular. Some of these are free, others not (X1 will put you back US \$99 while dtSearch demands US \$199).

Filehand, dtSearch, Copernic and X1 are all little more than indexing services; Dowsr is designed as a research tool which maintains a local database of online search queries. blinkx meanwhile, mixes it all up—it essentially spiders the Internet and your local disk and links relevant content to "keywords". Received an e-mail with "Sachin Tendulkar" in the body? blinkx will provide relevant online links (complete with excerpts) plus head to your hard drive to find that essay you wrote on the maestro or that video clip of his trademark straight drive. Its "Smart Folder" feature is also worth mentioning-tag a

folder with what kind of contents you want inside (say everything related to *The Hitchhiker's Guide to the Galaxy*), keep it overnight and blinkx will spider both online and offline information on your topic and gather links to everything relevant inside the Smart Folder...

Data deluge is part for the tech course we are headed on. It is indeed nice to have a good search companion by your side to make sense of the chaos. Here's to desktop search tools, may their tribe increase!

TECHNOLOGY > SUB 1-INCH HARD DISKS

The Incredibly Shrinking Hard Disk

The proliferation of portable devices has triggered a demand for high-capacity storage in a small form-factor. Last year, Hitachi unveiled its Microdrive, 1-inch platters spinning at its heart. But the future is even smaller.

Toshiba and Matsushita, for example have hard disks based on 0.8-inch and 0.7-inch diameter platters—that's about half the 1.8-inch drives currently inside the Apple iPod. So where is the demand coming from?

Mostly from consumer devices, and not just the traditional laptops and portable music players... as mentioned earlier, cameras are adopting hard disks. So will PDAs, in time. Similarly, there is a mini-boom in the handheld-PC market—products such as the OQO model 01, the FlipStart, the Sony U50, and U750P, the FlyBook, the Tigit, the Antelope—these so-called “hand-tops” demand high-capacity storage in a handheld-friendly form-factor.

Handtops are smaller than laptops and run Microsoft Windows powered by a low-power processor such as a Transmeta. This new breed will consume miniature hard disks with ease. Industry estimates suggest that the consumer appliance segment of the hard drive market, could account for as much as half of the

demand for storage media by 2007.

With moving video on cell phones, PDAs, and Portable Media Center devices, flash-based memory will no longer be cost effective—earlier last year; the price for a 1 GB Microdrive was around US \$159, while the cheapest 1 GB CompactFlash card sold for about US \$205. Indeed, the demand for small hard disks (mainly from the runaway success of the iPod) had prompted Toshiba to double production of its 1.8-inch hard disk drive to 600,000 units per month.

EVENT > LINUX SHAKES THINGS UP

Linux vs The Rest of The World

There is little doubt that Linux has arrived in the server space, what is interesting to note is that Linux is now synonymous with Red Hat in that market. This equation has traditional players in the server market worried. Sun, Microsoft and Novell to name the largest: alliances and take-overs were the order of 2004, then.

Novell got the ball rolling by first purchasing Ximian, makers of the “Microsoft Outlook-killer,” the Evolution e-mail client for GNU/Linux. Ximian's Red Carpet distribution system was also a factor to the purchase. Novell then bought SuSE which makes a very compelling Linux distribution, especially with its set of YaST configuration tools. With the two under its belt, Novell is all set to integrate its own Netware solutions and offer—they hope—a comprehensive and attractive package for the server space.

Meanwhile, Sun and Microsoft have signed a togetherness pact, the impact of which will undoubtedly resonate beyond 2004. What brought them together were the trio of threats of IBM, Red Hat and that whole Open Source bag of trouble... Their alliance, as of now extends to covering each others backs as per software patents and a currently cloudy (in terms of execution, not goal) intention of aligning Sun's offerings with Microsoft's, with comprehensive once again being central to the plan.

There will be much competition past 2004—brought to you by IBM, Sun, Microsoft, Red Hat, and the wonder child of a million programmers—GNU/Linux.

PEOPLE > SRINIDHI VARADARAJAN, PROJECT LEADER OF A TOP 10 SUPERCOMPUTER

Big Mac—35 Teraflops Served

MIT's Technology Review magazine undertakes an annual ritual of creating lists. These are not of the “top 10 vacation spots for quantum physicists” variety but the more prosaic, albeit eminently more practical list of 100 Top Young Innovators of 2004 (young is relative, as MIT professors will tell you, here it means under the age of 35).

One such blip on their radar was made by Srinidhi Varadarajan. To learn of the why behind the wow, we take you back to 2003...

When you hear “supercomputer”, huge monolithic machines masked in black and towering formidably over all they survey, spring to mind. You don't think shiny personal computers; you especially do not think Apple computers. Well, start thinking.



According to Seagate, within two years, storage prices will fall to levels indicated above

Late 2003 witnessed the birth of the then-third-fastest supercomputer, affectionately termed the Big Mac. The cluster-based supercomputer was birthed by a research team at Virginia Tech University, headed by Srinidhi Varadarajan—the Director of the Terascale Computing Facility at Virginia Tech and an Assistant Professor in the Department of Computer Science. Big Mac was strung together from 1,100 dual-processor Power Mac G5s, and was the first supercomputer with Mac inside. Big Mac was also affordable to digest, costing a relatively modest US \$5.2 million. To compare: Japan's Earth Simulator (then the second fastest supercomputer) cost an estimated US \$350 million to US \$400 million. While the Big Mac is capable of performing about 12 trillion operations a second (teraflops), the Earth Simulator operates at about 35 teraflops.

The budget supercomputer was declared the third-fastest, today it takes up the seventh position. Virginia Tech's next bargain supercomputer, due sometime in 2006, is all set to aim at for 50 teraflops, if status quo is maintained; this would allow Virginia to reclaim the third spot.

TREND > THE PC IN YOUR LIVING ROOM

One PC To Entertain Them

As a general trend, technology is migrating from servers and desktops into our living rooms. We have all been amused by the idea of our refrigerators e-mailing a grocery list to our local store, or our cell phones wirelessly programming our microwave ovens; these are intriguing concepts but not solutions in themselves. What is more interesting is the concept of home entertainment and the trends in that space.

We are of course talking about PCs which masquerade as consumer devices in your living room. Take the HP z545 Digital Entertainment Center as an example. It looks like a stereo component and will be right at home in a rack-mounted setup, next to a TV set. Innocuous on the outside, but take a close look: fold-down panels on the front hide two USB 2.0 ports, a CF, an SD, and a Memory Stick slot, you will also find RCA inputs, S-Video in, a Firewire port, a dual-layer DVD-RW drive and an alpha-numeric display. Turn it around and the back of the unit is overwhelmed with output ports: full 7.1-channel audio out (RCA and optical), a VGA port, S-video out, DVI video out, S/PDIF, composite video out, Component video out, a FireWire port, and four USB 2.0 ports. The most interesting piece to the equipment is the "Personal Media" drive. Which is a 7,200 RPM USB 2.0 portable hard drive with a docking station build inside the z545—the portable disk will let you carry 160 GB of data to a friend's or a relative's. That data can be TV shows, movies, music or photos. This is adjunct to the 200 GB hard disk that lives inside the unit...

But a nifty black box does not home entertainment make. Also starring are TV sets in more flavours than ice cream: the LCD TV (the largest from Sharp stands at 65-inch), the Wi-Fi LCD TV such as Philips' 23-inch Streamium 23PF9976i, which has built-in 802.11g for streaming video and audio files, the Plasma TV (which can be as



This Samsung Plasma TV, like all Plasma TVs, come in sizes upto 63-inch

large as 63-inch), the Projection TV which are lighter and use less power than a Plasma TV, also frequenting 63-inch. A supporting cast featuring a 4.1-, 5.1- or 7.1-channel speaker setup, projectors with in-built DVD and 2.1-channel audio support and a comfortable couch to sprawl on.

TECHNOLOGY > INTERNET TELEPHONY

VoIP—Waiting For Voice Quality

There is little doubt that VoIP is good technology. In a nutshell it allows international voice calls to be made over the Internet. This in turn brings down the cost of the call borne by a user. VoIP is also a good thing for the telephony industry since usage of routers and cables which connect the Web together, reduces the monies needed to build the required infrastructure.

VoIP is making inroads—VoIP-enabled IP phones from ISPs are now more common, alongside the necessary services, while VoIP-enabled cell phones are expected soon. Consumer software such as Yahoo! Messenger and MSN Messenger allow voice chat amongst contacts which is essentially VoIP. Perhaps the biggest success story of VoIP software has been that of Skype—a P2P telephony network founded by Niklas Zennström and Janus Friis, the creators of KaZaA. On October 20, 2004, 1 million Skype users were online at once. The software allows Skype users to talk to each other for free; it can also call a land line for a small fee. Available for all leading platforms including Pocket PC handhelds, Skype has been widely proclaimed as the herald of cheaper voice communication.

But VoIP has its share of problems, the largest being that of voice quality—mainly that it is nothing great. Noisy connections and dropped packets (hence delayed or missed conversation threads) are expected and encountered. A possible reason for this could be patents over Internet Protocol Telephony. Experts point out that the field is rife with patents which cover almost all possible compression algorithms.

It is only a matter of time though before VoIP becomes the de facto means of voice communication, after all, it makes perfect economic sense.



EVENT > SUN SUED OVER JAVA

Kodak vs Sun Microsystems

Three numbers 5,206,951, 5,421,012 and 5,226,161, caused quite a stir in the IT industry. These were patents which Kodak acquired from Wang Laboratories and subsequently used to sue Sun Microsystems. Kodak dragged Sun to court, alleging patent infringements and looking for US \$1 billion in damages. The claim-Java, the programming language so vital to Sun's financial health, was violating the aforementioned patents.

Sun and Kodak, settled out of court for US \$92 million this year, a far cry from damages sought but the real damage was already done-in the guise of seeding fear amongst Java users.

Most importantly, this event underscored the absurdity of the new patent regime. As analyst and IT advisor Jonathan Eunice stated in a report, "The patents reference specific concepts...that are clearly part of Java. But the patents seem to equally describe the execution environment of just about every modern programming language, operating system, (database) engine, messaging broker and application server." He opined that "It is not much of an overstatement...to characterize Kodak's patents as claiming the ownership of the entire concept of delegation."

As Sun's Jonathan Schwartz posted in his blog, "Was it worth having this suit hang over our heads, no. Absolutely not. That's why we settled-not to validate Kodak, not to validate those patents, but to let our customers and employees and stockholders focus on market opportunity, not litigation."

Will his be the future of the IT industry? Money exchanged over the knife-point of questionable patents?

PEOPLE > STEVE JOBS

The Man With The Midas Touch

The co-founder and CEO of Apple Computer, the founder of Pixar animation studio, Steve Jobs is well-respected as a practical visionary-one who sees inherent trends and benefits within systems and technologies which may not be readily apparent, and then uses his insights to amazing results. Born February 24, 1955 Jobs and his friend Steve Wozniak founded Apple Computer in 1976 and gave the computing world the highly successful Apple II and Apple Macintosh. He left Apple in 1985 to found NeXT Computer, come 1986 he purchased Pixar from LucasFilm (George Lucas was more than happy over the US \$10 million sale, seeing how Pixar was then bleeding money) and turned it into the highly successful animation studio that it is today. A floundering Apple Computer purchased NeXT for US \$402 million in 1996 and got back Jobs to his roots. The next year, Steve became the interim CEO and spearheaded the revival of Apple.

Under Steve's guidance, Apple enjoyed healthy sales of the iMac which was a design revolution, spawning an industry of translucent look-alikes and copy-cat product-names beginning with the letter "i". Appealing design and branding became the hallmark of Apple Computer since, culmi-



Listed by The Guinness Book of World Records as the "Lowest Paid Chief Executive Officer", Steve Jobs is a man who has spawned multiple empires



nating into the hugely successful iPod-as of October 2004, the iPod has over 92 per cent of the market share for hard drive-based players and over 65 per cent of the market for portable music players in general. Today, iPods sell more than Apple desktops, laptops or servers; they are largely responsible for the financial good-health that Apple Computer is enjoying.

The iPod portable music player birthed the iTunes Music Store-an online music store dealing with all five major labels, viz., BMG Music, EMI, Sony Music, Universal and Warner Bros. The store offers singles for US \$0.99 and albums for US \$9.99. It sold about 2,75,000 tracks in its first 18 hours and more than 1,000,000 tracks in its first week. This runaway success, at a stroke silenced critics of online music distribution, and simultaneously legitimised the medium. Sony and Microsoft quickly followed with their own offerings but Apple remains the dominant player.

Design has been the strength of Apple under Steve Jobs. The simplicity of the iPod scroll wheel, the integration of the iTunes software and the online store, the elegance and usability of Mac OS X, the minimalist Apple hardware; all underline the importance of design. Steve Jobs is a man equally adored and hated but as the conductor of some of the most memorable products of our time, his visions deserve a healthy round of appreciation.

TREND > INTELLECTUAL PROPERTY AND SOFTWARE PATENTS

The Destructive Force Of Software Patents

Meant to protect intellectual property, software patents, are increasingly seen as weapons in the arsenal of huge companies used to either slow down or halt the progress of rival technologies. So much so, that companies are bought and sold based solely on the number of software patents that own.

Consider a recent visit to Singapore by the CEO of Microsoft, Steve Ballmer.

First, some background intel: Singapore's Ministry of Defense, switched 20,000 personal computers to run on Open Source software. The Chinese government sees the made-in-USA Windows as a potential security threat and is allied with Japan and South Korea to develop a Linux-based OS. Asia, in particular is a huge supporter of GNU/Linux and the Open Source way.

During the visit, Steve warned Asian governments that they could face intellectual rights-infringement lawsuits for using Open Source operating platforms such as Linux. The ammo for the attack? Software patents- Ballmer said that Linux violated more than 228 of them. He did not provide any detail on the alleged violations, which the Linux community disputes. "Someday, for all countries that are entering the WTO, somebody will come and look for money owing to the rights for that intellectual property," he threatened.

Software patents have created an atmosphere of mistrust. So much so, that seemingly well-intended solutions, such as Microsoft's Sender ID are experiencing friction to adoption due to

the hovering storm clouds of associated patents.

These patents have been around for a long time, the ever-increasing trend is using them in questionable ways against competition. As Jonathan Schwartz, President of Sun Microsystems put it, "Companies that acquire (often questionable) patents and later wield them against new market participants unleash a destructive force that stifles innovation and prevents participation-the polar opposite of the purpose for which patents were created."

TECHNOLOGY > RSS SYNDICATION

Tying The Web Together

RSS, Really Simple Syndication is making Really Big Waves. The concept is simple: the contents of a Web site are displayed to its audience in a timely and approachable manner. Powered by XML, RSS simply repackages a Web site as a list of data, such as the date of a post, a summary of the story and a link to it. RSS aggregators then take the package and display it on your computer. Every time the Web site is updated with new content, the aggregator can inform you of the same, saving you the trouble of revisiting it. An aggregator can take numerous avatars: it could be a plugin in your favourite e-mail client, it could be your e-mail client, could be your Web browser, an application sitting on your desktop, the form it takes is limited to the imagination of its creators.

Why is RSS such a big deal? Because it provides the backbone for two things: distribution of news and a means of instantaneous communication. Driven by both news-based Web sites and Web blogs, RSS is the only way to keep in touch with the diverse WWW.

EVENT > eBay Buys BAAZEE.COM

Baazee For \$50 million

The prehistoric e-commerce landscape of India showed signs of life, late 2004 when Mumbai-based Baazee was bought by eBay, the international, online bazaar where even parents are sold (never successfully though). The transaction happened for US \$50 million which amounts to some Rs 230 crore. Before you get envious of the dynamic duo behind Baazee (Avinish Bajaj and Suvir Sujan), most of that cash will be used to buy out shareholders News Corp, ICICI Ventures, Bid or Buy, Global Bridge Ventures, E-Vision Partners and some angel investors in the US.

This is interesting because eBay means business; it is always looking to aggressively push its online market forward. That it bought Baazee could either mean that they know something about the Indian online market that we don't or that they simply deemed it wise to purchase a company with presence, rather than start from scratch. Baazee haven't broken even yet, although they claim to have conducted transactions worth Rs 100 crore. Interestingly, Baazee revised its initial claim of 2.6 million registered members to a figure of 1 million confirmed registered users, after the sale.



I did, in fact, taste kangaroo meat at a luncheon... I enjoyed it
Jonathan Schwartz,
President of Sun
Microsystems

For the rest of us, this transaction translates to a wider audience to both buy and sell goods.

PEOPLE > JONATHAN SCHWARTZ

Putting The Fire In Sun

Jonathan Schwartz is the President and Chief Operating Officer at Sun Microsystems. That fact does not make him particularly special. During his tenure at Sun he has been responsible for the introduction of the Java System, and for the launch of Java Desktop System (which has gained good traction within the industry), his day-to-day activities involve operations and execution of Sun's business including Systems, Software, Global Sales Operations, worldwide manufacturing and purchasing, customer advocacy and worldwide marketing. So what? It is a job well paid for.

No, what makes Schwartz a personality in the IT sector, a voice heard, sometimes with derision, sometimes with respect, but always heard, is this little URL: <http://blogs.sun.com/jonathan>. Mr Schwartz, ladies and gents, is a blogger, and they don't make bloggers more passionate than him.

Schwartz is the word evangelist given flesh. He gets up on his Web podium and thumps the virtues of Sun's products to anyone and everyone who cares for a listen. His sometimes wry posts waste no time in bringing down his competitors—Red Hat or IBM—or in drumming up Sun's associations with allies such as Microsoft and SAP.

His blogs offer an insight into the workings of an US \$11 billion company. They sometimes inform, and sometimes amuse (they can be both genuinely funny and obviously a veiled press release), but they always make an interesting read.

On Intel's CEO, Barrett's insistence that gigahertz is dead: "Granted we had that viewpoint approximately three years ahead of Mr Barrett, but we're glad we're finally in agreement." On open sourcing Solaris 10, a CIO told him that the last thing he needed was more source code: "No offence intended, but you're not my target demographic. It's your developers, and they'd love the ability to see/evolve the source." On Open Source: "No matter what the cynics say, since its inception, Sun has been a believer in and contributor to Open Source communities—after all, we were built on an Open Source operating system. Open Source is in our blood, not just our press releases and billboards." On kangaroo meat: "I would like to inform everyone that reads my blog that I did, in fact, taste kangaroo meat at a luncheon yesterday... And I know this will likely disqualify me from public office at some point, but I need also confess, I enjoyed it. It even paired well with a good shiraz [sic]. There, I said it. Secret's out."

Schwartz grants Sun a human face and for that alone, he must be applauded; the tech world needs a personality such as him. blogs.sun.com/jonathan, a blog worth reading, for the man at the keyboard■

ahmed_shaikh@thinkdigit.com



I Have No Mouth And I Must Screen

Nintendo DS

This handheld gaming device has generated great buzz over its use of two, three-inch LCD screens. The lower one is analog and touch-sensitive; both are capable of displaying 260,000 colours. The innovation does not end there: with the capability to host multiplayer games—over Bluetooth or Wi-Fi connections—using just one game cartridge, the DS truly allows “gaming anywhere, anytime.” The Nintendo DS also has stereo speakers, and a microphone with voice-recognition capability.

Gizmos Galore

As we head out of the year 2004, we take a look at gadgets that are sure to make your mouth water...

Samsung A-Go-Go

Samsung Media Center Portable

With a 20 GB hard disk, the Samsung Media Center offers portable audio and video. It supports MPEG4, MP3, JPEG, and Windows Media formats. While not enjoying media via its 3.5-inch TFT LCD display, you can connect it to a TV through a composite output port. A USB 2.0 compliant port for data exchange and a rechargeable Li-ion battery complete the package.



Stolen From 007

Nokia 7280

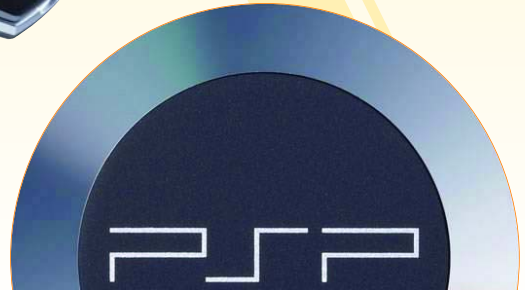
This thing is a cellphone. The bar-like unit twists and rotates outwards to reveal an extension to the mirror-like LCD; in this form, it can take and make calls. There is no keypad. A scroll wheel is the only means to interact with it—well that and a voice-activated interface. Oh, the slide-out design... hides a VGA camera as well, plus you get Bluetooth for hands-free headsets. Very neat!



PlayStation In Your Pocket

Sony PlayStation Portable

While the Nintendo DS is primarily a gaming device, the Sony PSP breaks all barriers in its attempt at convergence. It can play games, movies, and music via a proprietary UMD storage unit. Its large 4.3-inch screen hides a heart that is slightly less powerful than the PlayStation2. An analog face button along with its internals brings 3D games to the handheld format. Multiplayer gaming is possible via Wi-Fi connectivity.



Open Moto

Motorola A630

The most innovative aspect of this cell phone is its design, which merges two form factors—a traditional candybar which flips open to reveal a larger screen alongside a QWERTY keyboard. The quad-band unit has a VGA camera and Bluetooth support.



TV Worth Watching

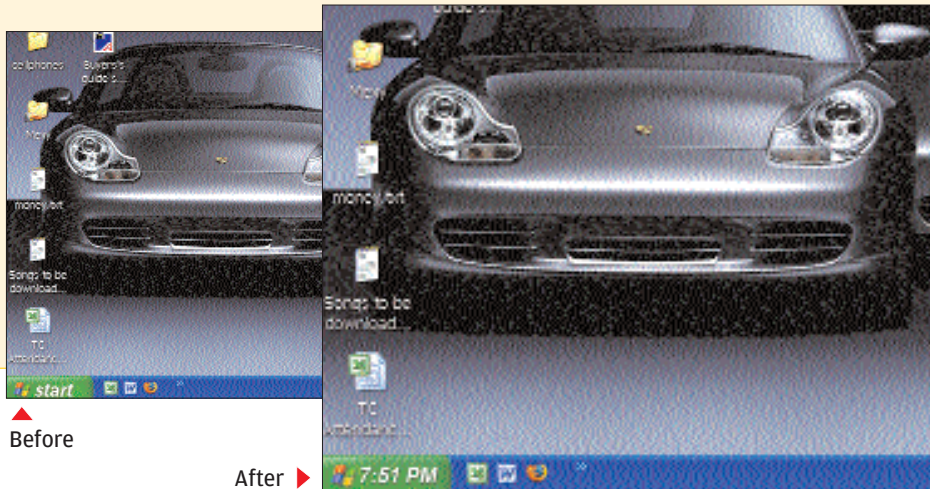
NHJ V@mp VTV-101

The V@mp 'VTV-101' is a wearable TV watch. This tiny portable TV which weighs only 55 gm uses innovative technology including a Sharp 1.5-inch TFT LCD display screen, an inbuilt Sony TV tuner, and accompanying stereo earphones which double as the TV's antenna.

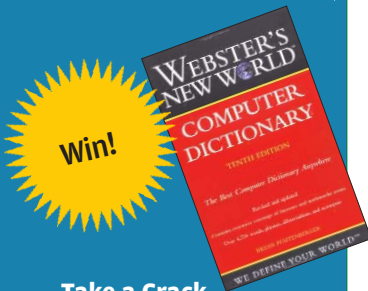


Time For A Start

Here's a challenge that is sure to see you attacking it with hammer and tongs: Get the Start button in Windows XP to display the system time. The timer should be displayed as shown in the accompanying screenshot



LAST MONTH'S CHALLENGE



Take a Crack and Win

Webster's New World Computer Dictionary
By Bryan Pfaffenberger
Published by Pearson Education

WINNER

Name: Dharmesh Soliwal K
Address: 11/2 lakshmi road
5th cross shantinagar
Bangalore 5600027
Phone number: 56956595
Email: metaldharmesh@yahoo.com

Rules and Regulations

Readers are requested to send in their answers by the 15th of the month of publication.

Employees of Jasubhai Digital Media and their relatives are not permitted to participate in this contest.

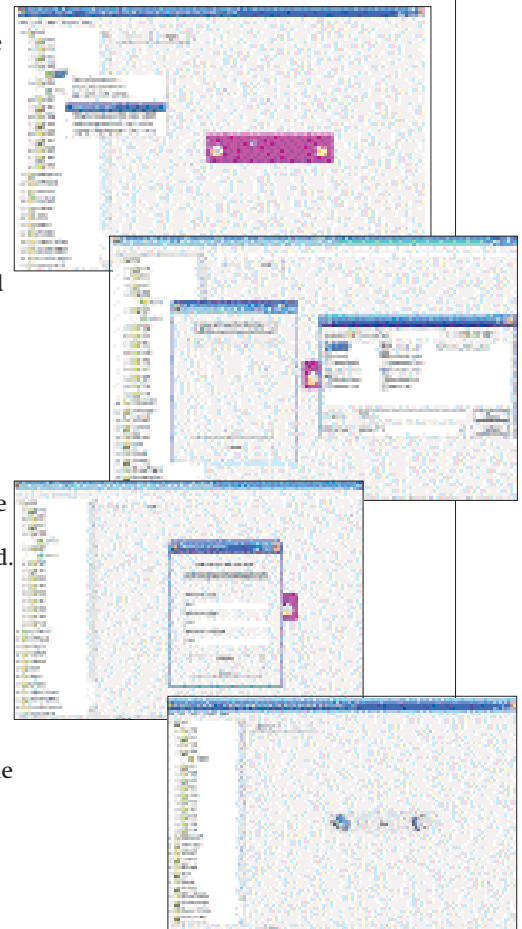
Readers are encouraged to send their replies by e-mail. Jasubhai Digital Media will not entertain any unsolicited communication.

Jasubhai Digital Media is not responsible for any damage to your system that may be caused while you are solving the problem.

Replace the default Microsoft Windows XP "Copying..." animation

- 1 The Windows file copying animation is located in shell32.dll.
- 2 This animation can be replaced or deleted with the help of a tool called Resource Hacker
- 3 Download it at www.downseek.com/download/19759.asp.
- 4 Shell32.dll can be found in \WINDOWS\system32 directory. Back up this DLL, and open a copy in Resource Hacker.
- 5 Expand the AVI folder.
- 6 Then expand the folder named 160, right-click on the resource 1033, click on 'Replace a resource' and browse to the location where the new animation is stored.
- 7 Then type in this information:
 - 1 Resource Type: AVI
 - 2 Resource Name: 160
 - 3 Resource Language: 1033
- 8 You can now see that the animation has changed.
- 9 Then expand the folder named 161 right click on the resource 1033, click on 'Replace a resource' and browse to the location where the animation is stored.
- 10 Then type in the required information:
 - 1 Resource Type: AVI
 - 2 Resource Name: 160
 - 3 Resource Language: 1033
- 11 To save the changes click on 'Save' under the File menu. Remember the location where you have saved the file as you will need it later.
- 12 Restart your computer in DOS mode and replace the shell32.dll in C:\WINDOWS\system32 with the edited shell32.dll.
- 13 Restart your computer and see the change by copying a file.

You can edit existing animations using Easy GIF Animator (www.blumentals.net/egifan/) or Advanced GIF Animator (www.creabit.com/gif/).



Fuelling The Need For Speed

Discover the technology that helps Karun Chandhok burn rubber on the British Formula 3 racing circuit

Meera Vankipuram

Boy wonder Karun Chandhok is, at 20, India's youngest auto racing sensation. Having made his debut in the JK Tyre Racing Championship three years ago, Chandhok is now the second Indian, after Narain Karthikeyan, to participate and notch up wins in the British Formula-3 circuit.

Chandhok, who began go-karting at the age of six, went on to win the national racing championship when he was still in school, and at 17, was the Formula Asia champion.

The British Formula 3 is regarded as the stepping-stone to the Formula 1 circuit—racing greats such as Ayrton Senna first made it big in F-3. The technology that fuels the sport is partly responsible for the exorbitant cost of the racing as well as the associated training. With an annual bill running into crores of rupees, Chandhok is heavily dependent on sponsors.

Chandhok and his team represent a perfect synergy of the Holy Trinity of the racing world—man, machine and technology.

The Nissan World Series car, which Karun moved to for the final four races of the 2004 racing season, is typically a single-seater powered by a three-litre V6 engine producing 450 BHP and capable of speeds of up to 290 kmph. Like in Formula 1, a podium finish is more a team effort than the prowess of the driver alone.

As Chandhok puts it, “The chassis of the car has been built by a company called Dallara after several long hours of CAD-CAM design and time in the wind tunnel. The engine is a 3000 cc V6 Nissan, built in the UK. It runs on software designed by Pi Research”—the software, Pi Delta, costs about Rs 15 lakh.

The data acquisition system developed by UK-based Pi Research, logs the various parameters of the car—speed, engine revs, suspension movement, steering movement, engine and oil temperature, and in-line and longitudinal g-forces.

The data acquisition room is a makeshift facility and is set up at every racetrack. “The team factory is in Italy but we travel all over Europe to different tracks—we have three systems hooked together on a land system, which functions as a



Speed racer Karun Chandhok seated in his Nissan World Series car

“The chassis of the car has been built after several long hours of CAD-CAM design and time in the wind tunnel

Karun Chandhok

data acquisition unit,” says Chandhok.

The logging is done with the help of 60 sensors along various parts of the car. “This information allows the engineers and the driver to understand the way the car behaves and evolve better training and racing strategies,” he adds.

Along with Chandhok, engineers Daniele and Roberto study the data and then figure out the best solutions to get the car to achieve its maximum efficiency and performance level.

Research, therefore, becomes an integral part of the training process. The research is usually aimed at attaining maximum fuel efficiency, better speeds and manoeuvring capabilities, and of course, more wins.

So what are the costs involved in keeping Chandhok's car in good humour? Explains Chandhok: “The costs work out to over Rs 2,000 per kilometre in the world series. It's hard to break down the maintenance costs but a set of tyres costs about Rs 40,000. A litre of fuel is Rs 110.”

For each season, Chandhok's racing budget is nearly Rs 3.2 crore—that's how much it takes to keep the driver, the car and the team in top condition. “My sponsors don't cover the entire cost, so at the moment, we have to cut back on testing and practice time to save costs,” he says.

Off the track, Chandhok uses his laptop to stay connected almost all the time. “I use my laptop extensively for e-mail and use the Net a lot nowadays to book flight tickets.” Chandhok owns a Compaq Presario 2500 series.

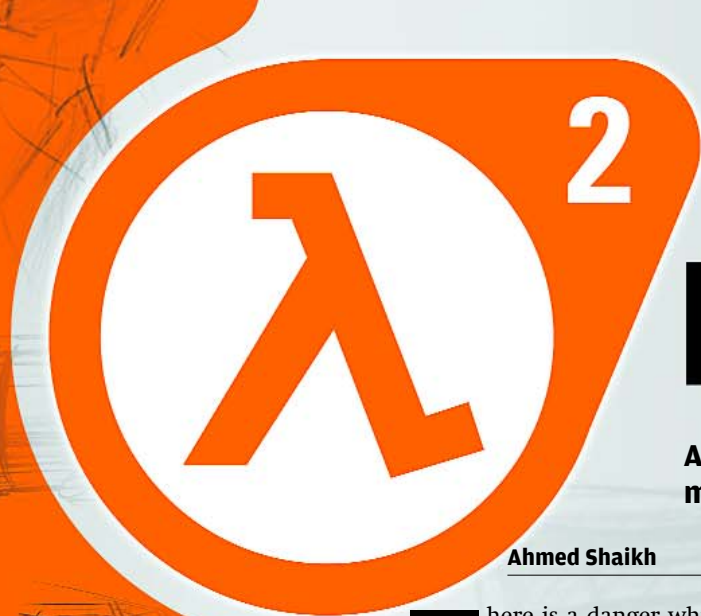
So what powers the Speed Racer? “Obviously, the thrill of winning—driving for the heck of it is a pointless exercise and a waste of time, effort and money!” Touché. ☒

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Racing's Expensive

Chandhok races with the Nissan World Series car, the chassis of which was designed and built in the UK. The data acquisition software, Pi Delta, which helps Chandhok monitor his racing prowess, costs nearly Rs 15 lakh. In the World Series, racing costs work out to over Rs 2,000 a kilometre - a set of tyres, for example, costs about Rs 40,000. A litre of fuel is Rs 110. For each season, Chandhok's racing budget is nearly Rs 3.2 crore - a sum funded partially by sponsors.



HALFLIFE²

A visual tour of the best gaming experience your money can buy. Serious!

Ahmed Shaikh

There is a danger while reviewing a product with a heritage that *Half-Life 2* enjoys. When you have waited for a game for close to two years, built a computer system for its imminent arrival, have hungrily consumed every nugget of information thrown by the Almighty Valve, there is a tendency that you will end up praising it, even if it—technically speaking—sucks. Wait, before you rip out clumps of hair—the game rocks... honest!

What makes *Half-Life 2* the most amazing virtual experience yet is the beauty of the world it creates. The

game system makes inherent sense. It is visually stunning, starring believable characters that showcase emotive expressions; it is supported by a laudable simulation of real-world physics, and is paced to perfection.

Within 15 minutes of playing it, you will go through curiosity, elation, surprise, fear, revulsion, dread, relief, and joy.

The emotive package is ably wrapped in a musical score which thrills, chills and rides your adrenaline back down to human levels. I do not exaggerate when I say that every moment of playing the game is a surprise, it feels fresh and invigorating

right up to the somewhat-deflated end (blame it on bloody sequels!)

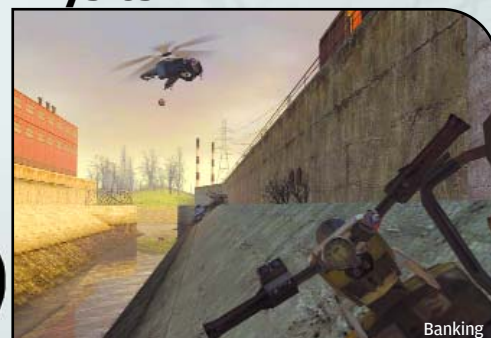
Having poured praise, my ego must point out some flaws—the installation takes an eternity (thanks to the Steam decryption and verification systems); like the first, the game is too scripted, and loading times will frequently throw a wrench at, what is otherwise, a study in immersion. That aside, the game is perfection itself.

Do yourself a favour and play it at all costs.

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Physics



Half-Life 2 tests your physics IQ. During the game, you will need to surmount various challenges based on the principles of physics, such as a pulley-based puzzle shown below. The game employs the Havoc physics engine, as a result of which, the simulations by HL2 are believable and immersive. For a more satisfying usage of real-world logic, read on...



Who Is Gordon Freeman?

A quantum physicist, a firestarter, a flirt...

The Firestarter



Turn up a gas pipe, whip out your pistol and shoot! Stand back, and watch them burn. Fun times.

The Decapitator



Get your gravity gun out and right-click to "tractor beam" saw-blades to yourself. Aim at the nearest zombie and fire the blade, watch it cut your target in half—like a hot knife through butter! Repeat

Love Of Gulls



The game is consistent. See birds flying? Shoot to bring one down. Here, gulls enjoy a quiet siesta

A Hit With The Women



Expressions enhance immersion in HL2. Seen here—a bit of flirting, followed by a tiff



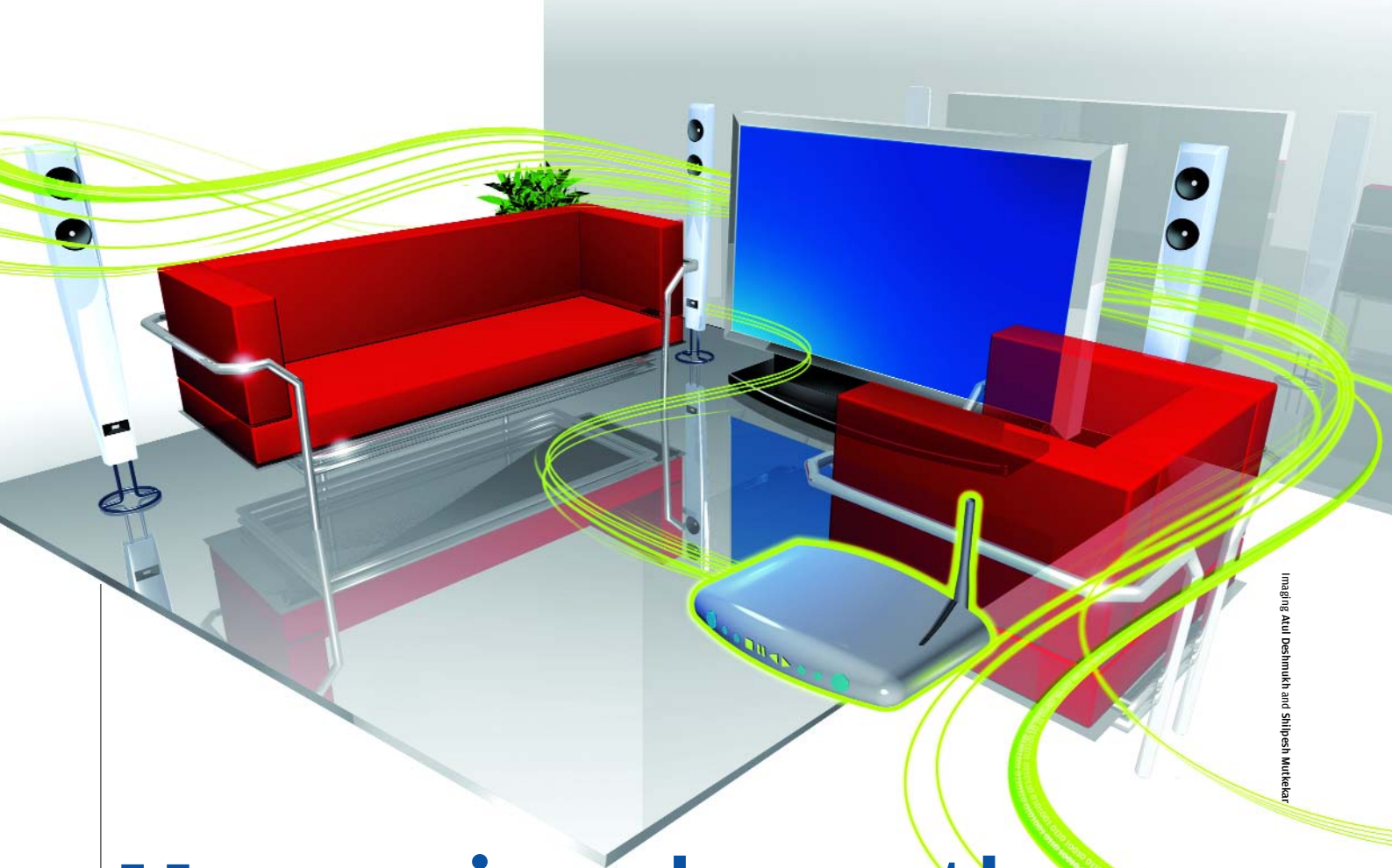
Enemy Of The State



Physics at play again, this time as a weapon. See that fool shooting at me on the left? See that huge metal container falling at him at 9.8 m/s^2 ? They met!

Half-Life 2

Distributed by Milestone Interactive Software Limited
Phone: 28381614
Web site: www.milestoneinteractive.com
Price: Rs 1,499



Imaging: Atul Deshmukh and Shipesh Mutkekar

Home is where the Entertainment is

You might just end up saying this as digital home entertainment brings the boom and the thunder of the movies into your drawing room

Deepak Dhingra

The “movie-outing,” as it is called, has traditionally been the primary mode of entertainment. The large screen, the surround sound experience entertains brilliantly—practically making you a part of the picture. But now with the convergence of different technologies, you can get quite close to the same ambience in the comfort of your living room.

With the universal remote in your hand, a bowl of popcorn in your lap, and your favourite armchair as your companion, you can control the way you are entertained. Significant developments pertaining to surrounding digital homes and convergence in the last year have made them a reality after the years of hype around them. Here’s a list of factors that have made digital home entertainment come true:

- ☑ High-performance processors and graphics
- ☑ Low cost storage

- ☑ Acceptance of WiFi
- ☑ Media Center PCs
- ☑ Falling prices of LCDs and flat-panel displays
- ☑ Wide acceptance of digital cameras and camcorders
- ☑ Acceptance of smart devices including cell phones and PDAs
- ☑ Ease of sharing data: Bluetooth, memory cards, PictBridge

Enough of theory. Let’s zoom right into devices that convert your home into a no-nonsense entertainment zone.

Media Center PCs

A PC can masquerade as an entertainment device to play music, games, etc. However, if you are looking at home entertainment, then you need a large television set, a HiFi stereo system and a movie player. A single contraption called the Media Center PC takes care of all this! Aptly described as putting the PC in the living room, Microsoft describes it as a digital media hub that combines all entertainment choices and

lets you access them via a single remote control.

Its key features include mid to high-end processors, adequate memory, high-capacity hard drives, advanced graphics and audio, optical drives and networking capabilities. It may also include a remote controller, a TV tuner and hardware encoder to capture and record TV signals, and TV and digital audio outputs to integrate with your TV and home theatre.

HCL Infosystems was the first Indian vendor to announce the launch of a Media Center PC in late 2003. Its latest model features an Intel P4 2.66 GHz CPU with 256 MB DDR RAM, an 80 GB hard drive along with a combo drive. Priced close to Rs 70,000, it has a full-featured Media Center remote control and Altec Lansing ATP3 2.1 speakers.

Other options in India include offerings from AOpen, MSI and HP. A recently announced model from HP boasts of running Windows XP Media Center Edition on an Intel P4 3.2 GHz CPU with the latest Intel 915P chipset to power high-definition video and audio. Also featuring an inbuilt wireless 802.11 b/g with a soft access point, it includes a 160 GB SATA hard drive, an 8X double-layer DVD Writer and a 9-in-1 digital media reader. However, it may be at least another three months before this model is introduced in India.



Media Center Software

The software bundled displays all entertainment options in a simple interface, called the 10-foot User interface, since you can manipulate it via a remote control from that distance. Below are entertainment options that accompany a superior Media Center software:

1. TV
2. Scheduled recording of TV signal
3. Pause live-TV
4. Music organisation and playback
5. Video/movie playback
6. FM Tuner
7. Picture mode with slideshow

Some of the software that offer the above functionalities are:

Windows XP Media Center Edition

This Windows XP-variant provides a range of entertainment options in a unified interface. Wizards help you set up the media center, calibrate your display device and set up TV input from a cable, antenna, satellite or set-top box. An enhanced 16:9 visual support, adaptive de-interlacing and video-scaling, automatic guide updates, parental controls, and storage management for recorded content provides complete control. However, the Media Center Edition only

The Media Center software displays entertainment options in a '10-foot User interface'



The DIY approach

You don't really need to spend your money on readymade solutions to have Media Center capabilities. If you own a decently configured PC (a P4 processor, 256 MB of DDR memory, a large capacity 7200-rpm hard drive, a DVD-ROM/Combo/DVD-Writer), you can easily convert it to a media center PC. All you require is a decent TV-tuner card with a bundled remote, FM tuner and compatible software. Just plug in the TV tuner, install the drivers and software, and scan for channels. That's it, your own Personal Video Recorder solution



comes pre-installed on PC systems.

Intervideo Home Theatre

Known for its WinDVD software, Intervideo offers a not-too-innovative nomenclature of Home Theatre. The package converts your PC into a VCR, DVD player, photo album, radio and music box.

CyberLink PowerCinema

It supports movies, music and pictures as well as TV and Radio in the TV Plus Edition. Features include a Favourite List Manager for stations and a 12-station preview to ease channel-surfing.

Showshifter

This package offers features such as pausing live-TV, digital video-recording, electronic program guide, home-networking compatibility, DVD playback, remote-control compatibility, music jukebox and CD player functionalities-all in a single and easy-to-use interface.

Apart from the above, most TV tuner cards are bundled with remote controllers and software that can accomplish at least some of the above tasks.

Displays

Home entertainment is not complete without a proper display. It can be your CRT or LCD monitor, or a regular TV. Opt for the large screen rear-projection TV or a Plasma TV display for the 'inhouse' theatre ambience. Plasma and LCD displays are now available in sizes never thought possible. LCD and Plasma are actually two different display technologies, each with its own advantages and disadvantages.

LCDs use a fluorescent backlight to send light through the liquid crystal molecules and a polarising substrate. A voltage applied to red,



Samsung
17 inch
LCD TV

green and blue pixels via a wire mesh darkens the pixels and thus, prevents the backlight from showing through.

In Plasma screens, a network of pixels—each comprising red, green and blue phosphors—is mounted between two thin glass layers. Small electrical pulses excite the rare natural gases argon, neon and xenon to produce colour information and light. Once the phosphors are excited, oxygen atoms dissipate and emit ultra-violet light.

LCD TVs are thinner and lighter, but offer limited viewing angles. However, unlike Plasma displays, they consume lesser power and do not suffer from screen burn-in effects.

A viable option is the multi-function display, which functions as a PC monitor and a TV as well. Samsung, LG and Philips offer you a

Opt for a projector to create a theatrical ambience

conductor called Digital Micromirror Device (DMD) that comprises over a million microscopic mirrors that move back and forth around 5000 times per second. Working in conjunction with a lamp, colour wheel and projections lens, they reflect a digital image onto a screen. As compared to LCD, DLP technology is rated to be better as it provides higher contrast, sharper images, better motion reproduction, and consistent image quality.

While buying a projector, pay attention to the brightness and the image quality offered. Brightness is measured in ANSI lumens. For home theatre projectors, this typically ranges from 700 to 2,000 lumens. Use higher brightness projectors when the ambient light in the room is more than adequate. Rooms with controlled lighting require lower brightness projectors. As for image quality, look at resolution and brightness uniformity.

Look for an XGA or WXGA resolution projector with a uniformity rating of around 85 per cent. Canon, Epson, and HP have models catering to the home segment. In fact, HP's new ep9012 features an integrated DVD player, a subwoofer and 2.1 surround sound. You can play DVDs straight from the projector, with support for DVD±R/RW, VCD, SVCD, CD-R/RW, CD-audio and MP3 playback. The ep9012 is not yet available in India, but is expected to be introduced soon. Price? Hmm, good question! We await HP's answer to that!



The Creative Inspire T7700

number of options in this segment. Samsung has a 15-inch LCD TV model priced around Rs 35,000, while 17-inch models start from Rs 60,000. The 17-inch model from Samsung is also HDTV-ready, making it future-proof.

Speakers

A good speaker set should blast off sound that fills your senses and overwhelms you—be it music, movies, or games. Though stereo and even 2.1 speakers should be fine for standard usage, opt for a 4.1 and above for a complete sound experience. Do make sure you get the speaker placement right, so that you have true surround effect. Choose from premium brands such as Creative, Altec Lansing, Logitech and Philips, to Indian brands such as Frontech, Intex, Odyssey etc.

While a decent 4.1 speaker system costs anywhere between Rs 2,000 to Rs 3,500, do expect to shell out around Rs 3,000 to Rs 20,000 for a 5.1 set. Then there are the 6.1 and 7.1 speaker systems for the true audiophile. Creative is the most popular brand here: opt for their Inspire range if affordability is your concern, and the MegaWorks range if you do not want to settle for anything less than high-class sound quality.

Home Projectors

LCD and Digital Light Processing (DLP) projectors have been around for a while now and served dutifully in corporate environments, boardrooms and at presentations. However, decreasing prices and reduced sizes make them worthwhile for use in a home theatre setup.

DLP projectors use a thumbnail-sized semi-

Home Theatre Systems

While a PC-based setup may offer you a lot of flexibility as far as entertainment choices are concerned, a home theatre system can also be a good option. Home theatres have been around for ages. The big brands here include Sony, Samsung, Philips, and LG. In case you do not have decent speakers and a big display, you can hook up your PC to a home theatre system and your existing TV and play music and movies on the PC.

Apart from the cost, do remember to consider the video and audio formats (most support MP3 playback) supported by the home theatre, along with the type of media. The Philips DVD/SACD Home Theatre System LX3900SA supports a variety of formats including Divx, MPEG4, MP3 and Picture CD. Supported media includes DVD±RW, DVD±R, CD-R, CD-RW, and SACD Multichannel. ☒

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Philips MX 5700D - DVD Systems



How low will PC prices go? Is a \$100 PC a dream? Will computing for the masses ever become a reality? The experts and professionals speak out

Ram Mohan Rao

If you are reading this, you are probably on the happy side of the Digital Divide—a term that's been bandied about too long, but which is nevertheless increasing in importance, especially in developing countries such as India. Think about it: on the other side of the Divide, just about five million of India's 1,200 million people own a PC, and only two million are connected to the Internet. What factors are responsible for these sad figures? Will they change? And what is being done about it?

\$100. That's the price Steve Ballmer's vision dictates for an affordable computer in poorer countries such as India; and that is supposed to include the \$30 for Windows XP Starter Edition. This is well in keeping with Bill Gates' statement of long ago that hardware would effectively be free at some point. Of course, Starter Edition is crippleware, and one wonders why Microsoft didn't simply downprice the Home Edition instead of coming up with a new edition altogether—but that is not the issue. The point is, is \$70 for the hardware feasible?

As much at issue is the question of what use computers are being put to anyway, whatever the price point.

Bytesforall.org is a portal that discusses, and brings together people interested in, the question of computing for the masses in South Asia. Frederick Noronha, co-founder, is of the opinion that "while PCs and IT have so much power, we're pushed into using them in entirely wasteful ways and in a manner that hardly addresses basic human problems." It is a fact that the typical home computer amongst the digitally wealthy is most used for games and other entertainment; next comes communication and Web surfing; and other uses, such as education, rank a distant third. But thinking about those on the other side of the Divide, what use is a PC?

Essentially, communication and education. These are two areas where computers can genuinely empower people. Ashok Jhunjhunwala of IIT-Madras has long had a vision in this direction.

Ashok Jhunjhunwala's Vision

Going by the figures, we need an urgent solution to the problem of the Divide. Noronha says, "It will not necessarily be in terms of cheaper individual PCs, but in terms of sharable computing, reused computers, whatever." Revisiting the question of what computers are being, and will be, used for, Noronha says: "People need to be using PCs effectively for their purposes. As of now,



AROUND THE WORLD

- ▶ Ashok Jhunjunwala's corDECT WiLL solution has already been deployed in several countries: Madagascar, Brazil, Fiji, Nigeria, Iran, Egypt, Argentina, Kenya, Yemen, Tunisia, Angola and Nepal.
- ▶ In Brazil, the "Computador Popular," including the monitor, has an estimated price tag of \$250 (about Rs 11,200). It was built by academics at the behest of the government, which is anxious to help low-income Brazilians span the Digital Divide. Sergio Vale Aguiar Campos, a professor at south-western Brazil's Federal University of Minas Gerais, said that the Brazilian government had basically asked, "How low can you go?"
- ▶ In China, basic desktop computers powered by V-Dragon CPUs and sufficient to browse the Internet would cost as little as \$200. Culturecom Holdings Ltd says its V-Dragon CPU retails for only \$15-\$30. Co-developed by IBM and based on the Midori Linux OS, the V-Dragon architecture is aimed at the Greater China market. Culturecom is hoping that its CPUs will help to bridge the Digital Divide in China.

we seem to be getting a growing number of computers, and using them highly inefficiently. One example is the Cyberage scheme in Goa, where more than 17,000 students got computers—which are used largely highly inefficiently."

If Dr Ashok Jhunjunwala of IIT-Madras had his way, we would see computing based on the STD booth model. Jhunjunwala's goal is to providing Internet connectivity and telephony on a commercial basis to some 600,000 villages across India. Jhunjunwala has long been working with his TeNeT group of IIT-Madras in Chennai to work out the technologies and economic models that make this feasible and sustainable.

"For its 180 million households, India has about 35 million telephones, eight million

At the prevalent rates, telecom is not affordable to more than two or three per cent of households in India

Dr Ashok Jhunjunwala,
Professor, Dept of
Electrical Engineering,
IIT-Madras



Dr Ashok Jhunjunwala of IIT-Madras has a vision for computing in India based on the STD-booth model

mobile and two million Internet connections. The Internet is power, and the country needs 200 million telephone and Internet connections in its cities, small towns and rural areas," argues Jhunjunwala. And, he says, subsidies are not going to achieve this.

"At the prevalent rates, telecom is not affordable to more than two or three per cent of households in India." Jhunjunwala's solution is to reduce costs. This, he believes, would take phones and the Internet to India's approximately 650,000 villages and 2,000 very small towns.

State-run BSNL already has 25,000 rural exchanges, of which 70 per cent are connected on fibre. If this is added to a wireless system with a 10-km range, it would cover over 80 per cent of villages in India, he argues. Given India's population density, this could offer one Net connec-

tion for every 500 people, and one to two connections per village.

If optimally utilised, the cost of Jhunjunwala's corDECT wireless in local loop (corDECT WiLL) solution makes costs plunge to Rs 10,000. This brings in one 35/70 Kbps Internet connection plus a simultaneous telephone link. If the area is sparsely populated, the cost goes up to Rs 14,000.

"Today, more than 25 per cent of India's total telephone revenues comes from STD booths, and almost 30 per cent of the population has started to use telephones," says Jhunjunwala. He says that the Internet "enables people. It is changing the way we live... those without the Internet will have a tremendous disadvantage as we go on. People with confidence and enabled people can make all the difference. We would like to see that all villages get reasonable speed Internet connection at the earliest."

The Price Conundrum

Coming back to the question of whether a \$70 computer is possible: (also see box "Ravi Pradhan: The Mouthpiece of the Masses?," page 55) Sanjeev Keskari of AMD India is of the opinion that computers have already almost reached their lowest possible price points, and that a further reduction in costs is not probable or feasible. He says, "The CPU contributes 10 to 15 per cent of the overall desktop. There are other key components such as the motherboard, hard disk, monitor, RAM, CD-ROM... which are the major building blocks for desktops. We have seen for many years that technology is changing very fast in all areas of the desktop building blocks, and that the customer is getting superior technology products; but it is hardly seen that we start getting old technology at lower prices.

"For example, if you used to get a 20 GB hard disk at price x two years ago, last year you got a 40 GB at a similar price point, and tomorrow you will get 80 GB at the price point of today's 40 GB. But you will not get a 20 GB at a fourth of the price of



A BASIC PC: HOW MUCH?

Since we have been talking about price, let's put things into perspective. Forget about gamers and graphic designers for a moment. Also forget about flaunt value. How much does the hardware in India cost now, for a computer that most people, including office and home users, need? Here's a reckoner.

Processor: AMD Sempron 2400+, Rs 3,250
Motherboard with onboard LAN card: Asus KM400, Rs 3,250
RAM: 128 MB DDR-333, Rs 1,100
Hard disk: Seagate / Samsung 80 GB, Rs 3,000
Mouse: Logitech first mouse, Rs 300
Keyboard: Logitech New Touch, Rs 275
Cabinet: HiS, Rs 1,000
CD-ROM: Sony, Rs 750
Floppy drive: Sony, Rs 350
Speakers: Creative SBS15, Rs 450
Monitor: Samsung 15-inch, Rs 4,700
Internal Modem: Rs 450
Total: Rs 18,875

RAVI PRADHAN: THE MOUTHPIECE OF THE MASSES?

We asked Ravi Pradhan of Via, the chipset and processor manufacturer, what should and could be done to bring the cost of PCs down. Pradhan is passionate about the issue of affordable computing, what people are buying and why they shouldn't be buying it. He had a lot to say to us:

- ▣ We need to bring the duty structure down, which would bring down costs by 30 to 35 per cent.
- ▣ There is no \$100 PC, and will not be. Even with duty cuts, it would still run up to \$200.
- ▣ Via is promoting the PC-TV, which has no monitor, but a digital tuner. What's the difference between a TV and monitor? Nothing but resolution and the inbuilt tuner. There are 90 million TVs, as against 10 million PCs in India. People will

buy TVs anyway for entertainment. The PC-TV concept might really work. It is in the works in various countries such as the US, and across Europe.

- ▣ People need to get away from the "GHz concept." Indeed, Intel dropped the 4 GHz platform.
- ▣ When you buy a TV, you never ask about the CPU and what processing power it has. Similar is the case when you purchase a washing machine: so why should you bother so much about the CPU when you buy a computer?
- ▣ "The charm of the GHz" is gone by now, and Microsoft, Intel, etc. are looking at other things, like cheap PCs.
- ▣ You now have gigabytes of storage on the Net. You can store all your songs on, say, Gmail. When broadband comes in, just stream all your music. Why do you need tons of hard disk space?

- ▣ The PC is still an elite product. 0.3 per cent of people in India bought PCs last year, and only 0.1 per cent bought them for personal use—that's one in a thousand. We don't want to accept the fact that we (that is, those of us who own personal-use PCs) are in the "elite of the elite," but that's the fact.
- ▣ I wanted to donate PCs to a school in Kurla, Mumbai. There were 1,600 students, studying four languages, and there is not one telephone line in the school. Where would the connectivity come from?
- ▣ There is no system in place in India for rewarding cost-cutting. If a decision-maker spends Rs 3 crore instead of Rs 6 crore on IT—including cheaper PCs—he will not be rewarded for his move. And thus, people go on spending more and more, without questioning suppliers.

an 80 GB when the 80 GB becomes mainstream. The same is the case with CPUs ... you get a better performing CPU at a particular price point.

"So with the current building blocks, the \$100 price point is a dream unless some new revolution comes into existence."

HCL Infosystems' Rajendra Kumar says the question is not about a "cheap" PC, but of something that means value for money. He cites budget requirements and upgradeability as key factors in pricing, and that HCL strives to cater to every market segment: that every product carries the same high quality that is expected. Asked about whether prices would come down, he says that the trend is there for us to see—home PCs that were typically seen only in metros are now seen in tier-2 and tier-3 cities.

The requirements of a user in, say, a tier-3 city, are different from those of a user in a metro, and Kumar says that HCL tries to address these differences. His answer to how a PC can be made more affordable is that there should be PCs at every price point; essentially, that customisability and flexibility are key.

Kumar issues a word of warning to those who purchase assembled PCs off the grey market, saying that there is always a risk involved - some parts, including hard disks, may be refurbished. Whether or not you get your money's worth depends on how well the customer is educated, according to Kumar.

Via's Ravi Pradhan disagrees violently with the idea of delivering superior technology at the same price points. Like Noronha, who says that computers aren't getting cheaper but only becoming more and more glorified typewriters, Pradhan says that there isn't sufficient education about what, or rather, "how much," technology is needed. People and companies have their computer needs dictated to them, he says, instead of the other way round: the user should dictate his requirements. It should depend on the applications, Pradhan says; a typical small

As of now, we seem to be getting a growing number of computers, and using them highly inefficiently

Frederick Noronha,
Co-founder,
bytesforall.org

business, for example, that uses mostly office applications and the Internet, there is absolutely no need for Pentium 4s running at 3.2 GHz. But such systems keep getting sold, with very few people asking where all the technology is getting applied. With the exception of, say, gamers, and those who do graphics and 3D work, no-one really needs the kind of computers that are being sold today, especially in a country like India.

Pradhan assures us that computers will get cheaper. And Noronha, echoing Pradhan, says, "As long as 995 million people—assuming India has a thousand million, the actual figure is more—are without access to computing, there are bound to be efforts to reduce prices and spread access to more."

As an aside, Noronha says about the PC industry: "It shouldn't work with so much planned-obsolence built into it. It hurts the buyer badly! It will keep computers unaffordable to all but a tiny segment in countries like India, while millions reach the garbage heap."

AMD's Personal Internet Communicator

Given that Internet connectivity is one of the prime reasons for wanting to own a PC,



Might PIC-like devices replace the IBM PC in countries such as India?

AMD's Personal Internet Communicator (PIC), which was launched in October, deserves special mention.

"The PIC is designed to be an easy-to-use, affordable consumer device that provides managed internet connectivity and basic computing and Internet capabilities such as a browser, e-mail, office tools, and the ability to view images, multimedia files and standard format documents," AMD's Sanjeev Keskar says.

The PIC, bundled with Internet services, will be sold to VSNL's broadband users at between Rs 300 to Rs 1,000 per month, depending on the service. VSNL aims to have two million PIC users in India over the next two years, according to Shashi Kalathil, head of the broadband business of VSNL.

The Affordable Computing Initiative

Pradhan says that the "affordable computing solutions lab," which got inaugurated in IIT-Bombay in April, is a first step towards the goal of an affordable PC.

Sixty computers of various configurations have been set up at the lab. These can be used by anyone who wants to test their software functionality and hardware requirements. Pradhan's next goal is to build links and similar centres with other IITs.

If his plans materialise, there will be around 30 such labs across India. "We would like the IITs to give a third-party, honest opinion." This plan, said Pradhan, could cost "\$1 or 2 million" (Rs 4.5

“People need to get away from the ‘GHz concept.’ Indeed, Intel dropped the 4 GHz platform

Ravi Pradhan,
Country Manager-India,
Via Technologies

to 9 crore) and take up to two years to implement.

Pradhan is confident that India, where the market is as price-sensitive as it is, would do well to avoid the herd-mentality of getting the fastest and latest processors for tasks that do not require them, such as office applications.

"People say lowering the cost of computers (to Rs 15,000) is achievable in the next two years. Actually that's not true. It's here today," he says.

Each computer—with an 800 MHz processor, 128 megabytes of RAM, a CD-ROM drive, a floppy drive, a 20 GB hard disk, an internal modem, keyboard, mouse and monitor—costs Rs 15,000 plus taxes.

What Microsoft And Intel Are Doing

Rishi Srivastav, Business Group Lead, Windows Client, Microsoft India, has this to say about reaching out to those on the other side of the Divide: "PC penetration in India is less than 2 percent. We are working closely with Government with the mission of enabling digital inclusion and IT opportunity. For instance, with Windows XP Starter edition, we are working with various state governments on the People's PC program aimed at bridging the digital divide among people in Indian states through various campaigns, which would encourage larger penetration of PC in the home segment."

About the \$100 PC, Srivastav says, "Microsoft is committed to reach out to governments and geographies with the mission of enabling digital inclusion and IT opportunity. As evidenced by our recent launch of Windows XP Starter Edition and other digital inclusion initiatives such as the Local Language Program, Partners in Learning and Unlimited Potential, we will continue to explore solutions with government and technology partners to enable digital inclusion and create local social and economic opportunity."

Microsoft and Intel have for long been attracted by the prospect of the 300 million new users who will buy PCs in the next five years—most of them in countries not on the developed-countries list, such as China and India.

Intel has been quietly trying out a small, low-cost motherboard with an embedded Celeron CPU. The platform has been code-named "Shelton." Although there have been no official announcements, Shelton has already found its way into products in China.

In The Years To Come

We asked Noronha of bytesforall.org what he thinks the scene will be like a couple of years from now. Will people be buying computers more appropriate to their usage patterns? Will wastage reduce? Will PCs really empower the masses? What will the landscape be like, in general?

Noronha is pessimistic. "More PCs, more power, more PCs in junkyards, more people without access to them, more talk about lower prices, and yet IT going increasingly out of the reach of the common man—especially in the poorer parts of the globe—and the grossly inefficient use of a powerful tool. Sad, but we see little evidence that things are changing for the better. It's mostly a business-as-usual attitude." ☒

ram_mohan@thinkdigit.com

1/4 Pg Ad

... The O2 Xda II

Deepak Dhingra

It's finally here! The successor to the immensely popular Xda is now available officially in India. So, when we managed to convince the national distributor to send it to us for a review and let us spend

a few days with it, there was a fair bit of excitement all around. The gadget freaks amongst us waited with bated breath for it to arrive. And when it finally did, I pulled rank to make sure I got to review it myself!

I was not disappointed.

deepak_dhingra@thinkdigit.com

Day 1

I opened the big white and blue box the way a 10-year old opens his Christmas gift. I removed the small pieces of treasure with reverence—the carry case, the cradle, and the power adaptor, to uncover the Kohinoor—the PDA itself. Couldn't wait to switch it on, but you have to charge these things first! I connected the device to its charger. A press of the power button and the sleek screen came alive with 65,000 colours. Set up and ready, I waited for somebody to call me.

Day 2

No calls yet. That's funny. No one calling to ask me whether product reviews were on time, no one to spam me about new credit cards or bank loans? Someone message me! I decided to take matters into my own hands, and call up someone myself. Pulled out the stylus and launched the SIM Manager application. It takes a few seconds to read the numbers on the SIM. Called the wife in Delhi. Her voice was enough to set my heart aflutter. Was it love, or was it the voice clarity on the Xda II?

Day 5

The damn SIM manager doesn't let you pick a number to send an SMS to. This is not good. I copied all my SIM contacts to the device memory, and selected the number to send the SMS to. Chose Transcriber to write the message, and discovered that the handwriting recognition is quite decent if you write slowly and clearly without scribbling.

Day 5

Bored with playing Jawbreaker and Solitaire, the two games that come with Windows Mobile 2003 for Pocket PC, I decided to install more games and apps on 'my' mobile companion. Installed Microsoft ActiveSync 3.7 on my computer, placed the Xda II on its cradle and connected the USB cable. It was detected immediately. Installing new applications is now just a simple matter of downloading and running the setups.

Day 10

It's a Sunday, and I am at a shopping mall in a Mumbai suburb. The Xda II is hanging in its leather carry case clipped to my belt. Find a lot of people staring at me when I am talking on the phone; maybe they're wondering why someone would talk to a PDA. There are flip sides to not having an external antenna. I used the camera on the Xda II to take some snaps in the mall. Not too good quality, but decent enough to MMS across to friends.

Day 15

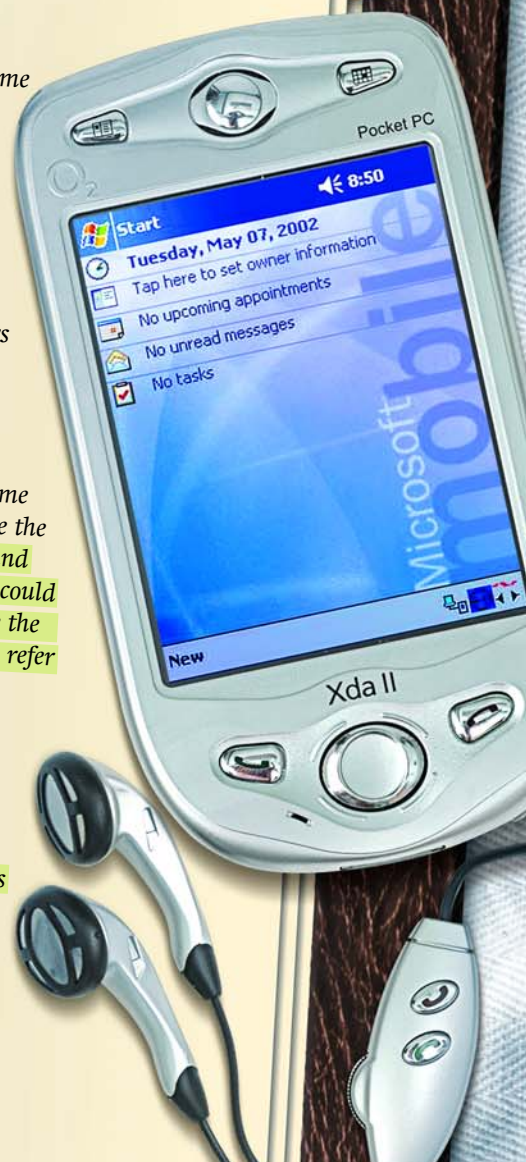
The alarm rings to wake me up at 7 am. Another beep an hour later to remind me of the design meet at 11. Man, 15 days, and my life already feels so organised! Feeling on top of the world, I play a few MP3s using Windows Media Player while I dress for work.

Day 20

Talking on the phone at home this evening, I needed to use the speakerphone. Fiddled around with the phone options but could not, for the life of me, locate the option to activate it. Had to refer to the manual.

Day 29

The phone is ringing again. It's my sis, and her picture flashes on the screen. It's the cool Photo ID feature that lets you associate images with your contacts. I remember that the Xda II is due to be returned soon. Well, at least I completed the e-Book I had been reading on it.





Photograph: Arun Gandhi, Imaging Vijay Padayra

The Made-in-India Browser

In a tiny Madhya Pradesh village, a physically challenged Jagdeep Dangi has created a Hindi language browser

Ahmed Shaikh and Robert Sovereign-Smith

All major ISPs, some NGOs, and the government, both state and central, talk of bringing the Internet to the masses. Here in *Digit*, we have showcased the efforts of all of them. We have shown you how people in the remotest of villages are getting tech-savvy, and how most of them use the Internet.

Why is the Internet so important? Why is it that even farmers from tiny villages have felt its touch? There are two primary reasons for it: information at your fingertips, and communication. It might be a great idea to wire up every square kilometre of our country and plug it into the Internet, but whether any good will come of it is a matter of debate.

What good is information to us if it's in Dutch, or German, or Swahili? English is just as foreign a language to the Indian masses as Swahili is to us. If you are reading this, you are a part of a tiny minority in India.

If there were any doubts as to the tech prowess of our villages, Jagdeep Dangi has silenced them. He hails from a tiny village called

Gram Bhunwara, near Ganj Basoda—a small town in Vidisha district of Madhya Pradesh. Against all odds, Dangi educated himself, and spent three years coding and nurturing his Hindi Internet browser.

"Why a browser?" we asked him. "The majority of PC users want to get on the Internet. The Internet is accessed through a Web browser, and so is vital to the masses," he says.

He adds, "Today, everything of importance is on the Internet—exam results, news, e-mail, etc. This browser will also be useful to many governments' rural IT education programs."

How He Did It

Like the nameless millions, Dangi hit upon a very real roadblock to his engineering career—English. While we take the language for granted (look around you to get an idea of how pervasive English is: if you wish to learn anything, you better know English), Dangi faced immense hurdles while trying to communicate in English while earning his degree.

The experience, far from scarring, made him determined to ensure that no one else needed to go through the language maze.



Jagdeep Dangi firmly believes in the need for a browser in the language of the masses

When we asked him how he went about the formidable task of building a Web browser, he replied, "I wanted to bridge languages, and so read many text books and magazines, and used the Internet to learn programming languages. Then I just worked day and night on my PC until I could convert my ideas into code."

A humble and concise description for three years spent on voracious and dedicated reading and learning, of toiling day and night, of clattering away at his keyboard. Then again, Dangi is humility personified, and speaking to him we could almost hear the movie narrator's voice boom, "...all-round good guy." Complete with a healthy family.

There's mom and dad and five sons—Dangi at 26 is the youngest, the baby of the lot. The fact that he's pampered is evident. He happily admits, "I am the favourite of the five children. My parents and brothers have always supported me and my work." His father and his three eldest brothers are farmers; the fourth brother is an advocate.

We asked him if anyone helped him with the coding—friends, professors, etc. "No," he replied simply. Then we wondered how much of a hurdle English posed to him, and how he managed to cope. He replied, "I studied in a Hindi-medium school till Class 12. English became a problem when I started my computer engineering degree. My English was very poor, but thankfully my strengths are logic and mathematics, and I managed to succeed using the subjects that required them. I do still face problems trying to express myself in English."

Jagdeep is currently unemployed, after a marathon-run of coding. He is awaiting a patent for his browser, and wants to market it to earn some money to support his future projects. "My browser offers all the functionalities of

Today, everything of importance is on the Internet... This browser will also be useful to many governments' rural IT education programs.

Jagdeep Dangi

Write In

Assembled something just as geeky? Tell us about it. Write to editor@thinkdigit.com

Microsoft's Internet Explorer, with all menus and commands in the Devanagari script," says Dangi. Perhaps the most exciting feature is the browser's translation tool—with a mouse-click, you can translate any word displayed in the browser, or within any Windows application, into Hindi—with even the short pronunciation keys that we are used to seeing at Dictionary.com. What's more, the software even throws a list of synonyms: where did he source the database? True to his style, Dangi spent meticulous hours scouring textbooks, dictionaries, and newspapers to build the software database, word by word, meaning by meaning.

Other Feats

The browser is his most renowned exploit, but is in no way his only creation. "I have also created other software, such as my Saral Hindi Editor, English-Hindi-English Digital Dictionary, and the Global Word Translator. Currently I am working on a full-page translation program. I have succeeded logically in the code, but need to desperately improve grammatically. If I could get help from an English Guru, I could complete it soon." Any volunteers?

What about Linux? And his dream of a Hindi operating system? "I would love to, but I just do not have the requisite facilities. I only want to market my products to make enough money to work on more applications, including my idea of a Hindi OS."

The Man

So what does Dangi do when he isn't coding? "Books are my best friends, and my guru is my God. My favourite books are the *Geeta-Gyaan* and *Premchand Ki Kahaniyan*, My favourite movie is *Koi Mil Gaya*, and I love old songs by Mukesh."

Most importantly, Dangi's spirit is unbreakable. He does not use his disabilities as a crutch, as most others would try and do. He lost the use of his legs when he was young. To make matters worse, an adverse reaction to medicines injected by doctors in Bhopal while treating his legs, caused him to go blind in one eye. The allergic reaction may have given Jagdeep a close shave with death, but it only reinforced his parents' belief that he was "a gift from God".

Physically and visually challenged, hailing from the heart of rural India, Jagdeep Dangi's achievements are an inspiration. When we asked about what he wants to do, he said, "I want to work for the government, in the area of software research and development. But I don't have enough money or political contacts to get a job like that!" We hope someone who does is reading this! ☒

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Buzzword
of the MONTH

DomainKeys

One of the prominent anti-spam solutions is DomainKeys, developed by Yahoo!. A hash of an e-mail is encrypted along with the mail server's private key, encoded, appended to the message as a

mail header field, and transmitted along with the mail. A system can request the mail server's public key from a DNS server, decrypt the hash and compare it against the text of the e-mail. The local mail client can decide what to do with the e-mail based on the outcome of this comparison.



ZERO 1 AWARDS 2004



The pace at which the digital revolution is taking place, it will not be long before smart houses are a reality... with the *Digit Zero-One* 2004 awards, we salute the companies—and their products—that help make this revolution come about.

The Digit Test Centre

Another wonderful year has passed by, leaving behind sweet memories of the technologies that emerged across a broad spectrum. While some flickered for moments before going out, others stayed put, and yet others evolved into different incarnations altogether.

This year has seen some dramatic shifts in the way technology is perceived, and the way it will be perceived in the near future. The industry giants are gunning for their ultimate goal—the introduction of the PC into our living rooms. So whether it is the new 915 chipset from Intel, or Microsoft's Media Center OS, the final fantasy is pervasive computing that should *Enable* and *Entertain* you right from the word Go.

Every facet of computing has undergone radical changes in the year that has passed. On the desktop end, Intel took the lead with the introduction of their new desktop platforms—the i915 and the i925 supporting the PCI-Express standard, a technology that will determine the future of motherboards and graphic cards, and in turn the fate of desktop computing. While Intel was successful, arch rival AMD stole some of the limelight with the introduction of truly awesome 64-bit processors that have made the enthusiast community sit up and take notice.

Mobile technology got a shot in the arm with the release of Intel's new Dothan processor. This power-optimised processor per-

forms as well as do high end Pentium 4 processors, but consumes much less power, resulting in low heat dissipation—which in turn means lesser cooling requirements.

Mobile computing is hot, and is manifesting itself in varied forms across all age groups. MP3 players such as the Apple iPod are all the rage amongst young people, and smartphones such as the Sony Ericsson P910 are digital heaven for mobile executives. These smart devices, combined with the proper telecommunication packages, shrink your world to the size of a table-top globe.

Industry bigwigs such as Intel, HP, nVidia, etc. are embracing open source, and are committed to providing drivers for their product lines. This might mean a mighty impact on the adoption of Linux in the SoHo and enterprise segments. Linux distributions are concentrating more on making their products user friendly, and to a certain extent, have succeeded. With KDE 3.3 and Gnome 2.6, the building blocks of the Linux GUI have improved to a level where they can match up to the Windows GUI.

From an Indian perspective, things are shaping up really well. As of today, you can assemble a reasonably good PC for around Rs 20,000. Such affordability is sure to boost PC penetration, and will soon put another million Indians into cyberspace.

Take a look, in the following pages, at the *crème de la crème* of products that have stood out in their respective categories in the year 2004.

Cell Phones

Smartphones

Sony-Ericsson K700i

Specs: 65K colour screen, 41 MB built-in, tri-band, VGA Camera, Bluetooth and MP3 audio

Our Verdict: The K700i comes in a beautifully crafted body accentuated by the anodised silver finish. The translucent keypad, though cramped, gels perfectly with the body. The K700i from Sony-Ericsson is unarguably the most feature-rich phone in its category; name the feature and it's got it.

With features cramped into its small

body, the K700i wins over its closest competitors on the features it offers. The K700i comes with a brilliant 65K colour screen. The menu interface is sleek, and the browsing action is crisp without significant lag or jerks. The inbuilt camera is good for casual shots, and returns above-par picture quality. The MP3 player, though lacking in fidelity, comes in handy when on the move. Bluetooth makes transferring files and syncing your data a piece of cake.

Runner-up: **Nokia 6600**



Digital Cameras

Under 30,000 rupees

Kodak Dx-6490

Specs: 4 Megapixels, 10X optical zoom, 38-380 focal length, 1/1700–16 shutter speed and 16 MB memory

Our Verdict: The Kodak DX-6490 sports a pseudo-SLR look. The potential highlight of this camera is the 10X optical zoom engine that can zero in on to distant objects. The camera also has a small EVF (Electronic View Finder) which, when used, boosts the battery life to certain extent. The quality of the output is crisp,

vibrant and life-like. For the price it is offered at, the DX-6490 is a great buy.

It features in this list for its picture quality, features offered and for its excellent ergonomics.

Runner-up: **Sony Cybershot P100**



DVD Writers

Dual Layer DVD Writer

Pioneer DVR-108

Spec: 16X DVD+R, 16X DVD-R, 4X DVD+RW, 4X DVD-RW, 2.4X DVD+R DL, 32X CD-R and 24X CD-RW

Our Verdict: The Pioneer DVR-108 was the best Dual layer DVD writer that we have seen this year. The drive is featured packed and out plays most others except for the one from Asus. The DVR-108 supports over burning and hence can write DVD's above supported speed. On the performance

front it burns a Dual layer DVD under 27 minutes faster than most writers. Reasonably priced the Pioneer DVR-108 is the best DVD writer that money can buy.

Runner up
Asus DRW-1604P



Flashback To December 2000

ClickiT DCE-400

Specs: 1,024 x 768, 4 MB CF cord, USB, 4 AA batteries
Evolution: In the year 2000, digital photography was just taking its roots in India, and the ClickiT DCE-400 is a perfect example. The ClickiT DCE-400 was priced at Rs 20,000, and all it could do was take images at 1024 x 768 or 640 x 480, and probably could take it at 1.5 megapixels. In four years, digital photography has come a long way, and cameras much better than the ClickiT DCE-400 cost no more than Rs 10,000. Today, for Rs 20,000, you can expect a camera with a 4-megapixel CCD, 3x optical zoom, 4X

digital zoom and other advanced features related to white-balance, etc.

Pioneer DVD-1045Z

Specs: CD read 40x, DVD read 10x
Evolution: In the year 2000, DVD-ROM drives were the happening things: fast-forward to 2004, and we see DVD writers as the next big wave. Today, the Pioneer DVR-108 not only allows reading of DVD disks: one can also burn 4.3 GB of data onto a single disk. With dual-layer DVD drives making it to the market, you can write double that amount onto a single DVD.



Illustrations Shyam Shreeram



External Hard drives

Portable Hard drives

Western Digital Media Centre 250 GB

Specs: 16X DVD+R, 16X DVD-R, 4X DVD+RW, 4X DVD-RW, 2.4X DVD+R DL, 32X CD-R and 24X CD-RW

Our Verdict: This is the best-performing Dual-Layer DVD writer your money can buy. It supports over-speed burning, and in our tests, posted some of the fastest write speeds.

Runner-up: **Maxtor One Touch 250GB**



Compact Hard drives

Freecom FDH-2 PRO 80 GB

Specs: 1.8 inch platter, 175 gms, 2MB buffer and USB 2.0 interface

Our Verdict: With the lowest price per MB, one-touch button for backup, excellent looks and stable performance, it took our Best Buy Gold award in this category of hard drives.

Runner-up:

Transcend StoreJet TS06SJ25



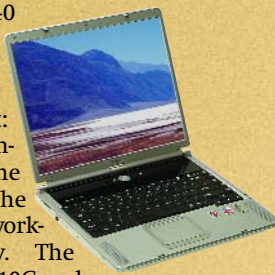
Laptops

Workhorse MSI MegaBook M510C

Specs: Pentium M 1.5 GHz, 256 MB, 15" screen, 40 GB hard drive, combo drive

Our Verdict: Blazing performance saw the M510C take the crown in the workhorse category. The Megabook M510C also offers a good configuration for the price.

Runner-up: **Wipro CP**

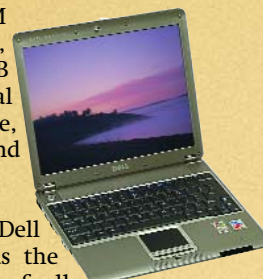


Runner-up: **Compaq X1237AP** and **Toshiba Satellite M30**

Ultra-portable Dell Latitude X300

Specs: Pentium M 1.2 GHz, 384 MB, 12" screen, 30 GB hard disk, external USB combo drive, docking station and an extra battery

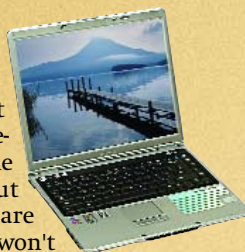
Our Verdict: The Dell Latitude X300 has the slimmest profile of all, and is compact enough to be carried around easily. It comes bundled with all the necessary bells and whistles, and has an assortment of accessories to choose from.



Lifestyle LG LM-50

Specs: Pentium M 1.5 GHz, 256 MB, 15" screen, 60 GB hard drive, combo drive

Our Verdict: The LM-50 will appeal with its good looks. An excellent performer in its category, it posted some good scores in our tests. Features are limited, but one won't find any essential features missing.

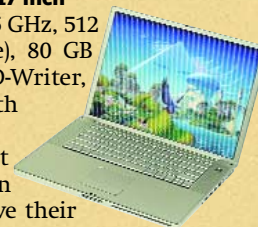


Runner-up: **Fujitsu Lifebook S2020**

Apple G4 PowerBook 17 inch

Specs: Power PC G4 1.5 GHz, 512 MB, 17" screen (Wide), 80 GB hard disk, DVD-Writer, FireWire 800, Bluetooth

Our Verdict: The best designed notebooks in the business, they have their own charm. We praise it for its sheer beauty, not to forget the performance.



Flashback To December 2000

Iomega 2 GB Jaz

Specs: SCSI Drive

Evolution: Four years ago, the 2 GB Jaz drive was the in thing. Today an 80 GB ultra-compact hard drive is it. Comparing sizes: you can make out the obvious difference—the ultra-compact drive is much smaller than the Jaz drive. The 2 GB Jaz was priced at Rs 21,000 then, so is the Freecom FDH-2 PRO 80 GB. Effectively, the price per MB has dropped 40 times.

Zenith 21A

Specs: 1 GHz Pentium 3 processor, 128 MB RAM, 10 GB hard disk, S3-based graphics and CD-ROM

Evolution: Laptop hardware has come a long way. The old Pentium III chips have metamorphosed. Today you see optimised fast Pentium M processors, extremely good graphics and four hours of juice to keep your work in progress when on the move. The Zenith 21A then was priced 1 lakh; today you can buy a powerhouse laptop for that price.



Monitors

17-inch CRT monitors

BenQ V773

Specs: 0.27 mm dot pitch, 16-inch viewable area, maximum resolution of 1280 x 1024 @ 60 Hz, 110 MHz bandwidth.

Our Verdict: Priced affordably, the BenQ V773 is a good buy. The maximum resolution of 1280 x 1024 @ 60Hz, viewable area of 16 inches and the dot pitch of 0.27 is reasonable at best. Geometrical distortions are negligible, and brightness and contrast is perfect—with no need to boost the gamma when playing dark games.

Runner-up:
Philips 107ES



19-inch CRT monitors

Philips 109P4

Specs: 0.25 mm dot pitch, Aperture Grille, 1920 x 1440 @ 60 Hz maximum resolution, 261 MHz video bandwidth.

Our Verdict: The Philips 109P4 is an excellent 19-inch monitor that you can invest in without hesitation. The 109P4 uses an Aperture Grille tube that guarantees a crisp and bright display. Excellent colour saturation, good contrast and high brightness make the Philips 109P4 suitable for most 3D applications and graphics requirements. In the geometry test, the 109P4 performed extremely well, and so we recommend it for designers, who require precision.

Runner-up:
Philips 109ES



Monitors (LCD)

15-inch LCD Monitors

CMV-CT522A

Specs: 500:1 contrast ratio, 250 cd/m² luminance, 16 ms response time and inbuilt speakers

Our Verdict: Excellent colour reproduction, reasonable brightness, superb contrast ratio and a good set of features make the CMV-CT522A a perfect 15-inch LCD monitor to invest in.

Runner-up:
CMV-CT522A



17-inch LCD monitors

Samsung SyncMaster 173P

Specs: 700:1 contrast ratio, 270 cd/m² luminance, 25 ms response time and swivel base

Our Verdict: Samsung's SyncMaster 173P comes out as the best-designed LCD monitor. The 700:1 contrast ratio gives it an edge over other LCDs. However, the 25 ms response time makes it unsuitable for gaming. Performance on all other aspects is top-notch.

Runner-up:
CMV-CT722A



Flashback To December 2000

ViewSonic PS775

Specs: 0.22 mm dot pitch, 16-inch viewable area, 1600 x 1200 @ 76Hz and 150 MHz bandwidth.

Evolution: ViewSonic's PS775 was way ahead of the competition in its time. Acceptance of 17-inch monitors has increased, and this mass adoption has lowered prices. However, price cuts simply mean curtailing of high-end specifications. Hence, as of today, one can buy three 17-inch monitors for the price at which the ViewSonic PS775 was offered then. Also, new technologies such as full-flat tubes have percolated into mass

market products.

LCD Monitors

Evolution: Four years ago, LCD panels were simply too expensive for the masses. The manufacturing costs of LCD panels were very high. With rapid development of better fabrication technologies, manufacturing costs were brought down. As of today, you can get a 14-inch LCD panel for as less as Rs 13,000, which is terrific considering the fact that the same panel was priced at Rs 40,000 odd four years ago.





Motherboards

Intel motherboards

MSI 875P Neo FISR

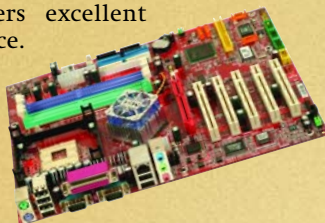
Specs: i875 chipset, supports DDR 400 MHz, AGP 8X, 2 SATA ports, 7.1 Channel sound, 8 USB ports, Gigabit Ethernet and FireWire ports.

Our verdict: The 875P Neo FISR from MSI is still the best board your money can buy, when it comes to the older socket 478 Pentium 4 processors running at 800 MHz FSB.

The 875P Neo board comes with MSI's Core cell chip that allows on-the-fly over-clocking, power saving and real-time diagnosis of critical system parameters such as temperature and fan speed. The board is packed to the gills with features, and delivers excellent performance.

Runner-up:

**Intel
D875PBZ**



AMD motherboards

Asus A7N8X-E Deluxe

Specs: nVidia Nforce2 chipset, twin Gigabit Ethernet, 802.11b Wi-Fi card, SoundStorm Audio, SATA ports, 6 USB ports and FireWire port.

Our verdict: The Asus A7N8X is, till date, the best motherboard you can buy for AMD's Socket A processors. The motherboard is based around nVidia's nForce2 chipset.

On the features front, the board comes with two Gigabit adapters and one 802.11b Wi-Fi card for wireless connectivity. The SoundStorm audio processing unit is capable of decoding Dolby sound. The performance of this board is trail-blazing, the overlocking capabilities are excellent, and it remains fairly stable on overlocking.

Runner-up:

Asus K7V600



Multifunctional Devices

WorkGroup MFDs

Samsung SCX-4216F

Specs: 600 x 600 dpi, 16 PPM, 250 sheets, 4800 x 4800 dpi scanner, 160 pages fax memory and super G3 compatible

Our Verdict: The laser SCX-4216F MFD from Samsung offers an excellent balance of performance and features. A good printer unit, a reasonably good flat-bed scanner and faxing capabilities make it an ideal choice for an office.

Runner-up:

HP LJ3380



Heavy Duty MFDs

Samsung SCX-5315F

Specs: 15 PPM, 1,200 dpi, USB/Parallel interface, 600 x 600 dpi scanning, 550 sheets capacity, 320 pages fax memory, and 80 location speed dial

Our Verdict: Samsung's SCX-5315F is a huge and sturdy machine. The printing unit is based on a copier engine and provides good economy. The scanner unit, though slow, is quite up to the mark. Copying is fast, and additional features such as clone, duplicate, and paper save give the SCX-5315F the edge.

**Runner-up: Xerox
M15i**



Flashback To December 2000

Asus A7V

Specs: VIA KT133 chipset, supports 1 GHz AMD processor, 1.5 GB PC133 SDRAM.

Evolution: As of today, the Asus A7N8X-E is a powerhouse, and will run rings around the Asus A7V. The Asus A7V was then king, but it cannot stand up to the latest boards. The A7N8X supports an AMD processor up to 2.4 GHz and memories running at 400 MHz. While the lowly Asus A7V was priced at Rs 12,000, the new, technology-bloated A7N8X is priced at Rs 8,000 only.

Multi-Funtional Devices (All-in-ones, as they were called then)

Evolution: When MFDs were introduced in the market, they weren't successful, due to reliability issues. Also, many of the units didn't perform as good as their stand-alone counterparts did. Manufacturers were pushed to the drawing boards again, and they came out with really good machines that combined three or four devices into a single unit. As of today, they have evolved to such an extent that they produce results on par or better than standlaone devices.



Printers

Soho Printers

Canon Pixma iP4000

Specs: 5 colour Ink tanks, 4800 x 1200 dpi, PictBridge-compliant, duplex printing and CD-R printing

Our Verdict: The latest crop of printers from Canon will live up to your expectations, with the right balance of performance and features. The Pixma iP4000 from Canon is the fastest inkjet printer we have tested so far. It took less than 9 seconds to print out our test page, where other printers take more than 14 seconds to do the

same job. Printouts from the Canon iP 4000 are quite good, and are at par with those from competing models. Photograph printouts can be described as good, if not excellent. The new design is aesthetically more pleasing and compact.

Runner-up:

HP Business inkjet 1100dtn



Servers

Entry level servers Acer Altos G520

Specs: Xeon 2.8GHz, E7320 chipset, 8 GB maximum memory support, 512 MB RAM, 10,000 rpm SCSI 80 GB HDD and Ultra 320 SCSI Adapter

Our Verdict: The Acer Altos G520 with the Xeon processor and Intel E7230 chipset is upwardly scalable and offers excellent headroom in terms of adding an additional processor. The motherboard supports around 8GB of memory—good from the

upgradeability point of view. PCI-Express offers enough bandwidth for devices such as Gigabit Ethernet, which are quite restricted on today's PCI bus.

Overall, the Altos G520 is an excellent server machine as it offers the right kind of balance in terms of power and upgradeability.

Runner-up:

HP ProLiant ML-110



Speakers

5.1 speaker systems

Creative Inspire 57

Specs: 35 HZ to 20 KHz frequency response, satellite 7 W, centre 21 W, subwoofer 30 W, support for Dolby digital, DTS, Dolby ProLogic and CMSS.

Our Verdict: The Inspire 5700D from Creative has a comprehensive feature set, the most important being the presence of Digital/Analog inputs and a full-featured remote.

Performance is inspiring, with clear treble and deep bass.

Runner-up:

Creative MegaWorks 550



Flashback To December 2000

Epson Stylus Colour 880

Specs: USB/Parallel interface, 2400 x 1200 dpi, 100 pages input paper tray

Evolution: Printing quality has improved to such a point that inkjet printers are now used for photograph printing. Features such as duplex printing, PictBridge, etc. have been added to the standard list. Printing speeds have improved drastically. The Epson Stylus Colour 880 was priced in 2000 at Rs 21,800, which is thrice the amount you will spend today for a much better product.

Creative Desktop Theatre DTT2500D

Specs: Satellites 7 W, 21 W centre, 20 W subwoofer, support for Dolby Digital

Evolution: The Desktop Theatre DTT2500 is very similar to its present-day incarnation—the Inspire 5700D. The biggest difference is that compliance to various audio standards has increased. This results in true convergence of conventional audio with the PC, and so, DVDs can be played with great results on a PC. Another factor is price: the DTT2500 was then priced at Rs 33,000. The present-day Inspire 5700D costs Rs 24,000.





TV Tuners

Internal TV Tuner Cards

Compro VideoMate TV Gold Plus

Specs: MPEG 1/2 Capture supported, 720 x 576 maximum resolution supported and Nicam Stereo

Our Verdict: Compro's Videomate TV Gold Plus is an excellent TV tuner card that is characterised by good quality signal reception. The card can tune to most channels perfectly without any human intervention. The software bun-

dled is excellent, and provides an easy interface for most people.

Runner-up:

Mercury TV Tuner Card



Wireless Devices

802.11g Access Points

Buffalo WBR2-G54

Specs: 4 LAN ports, one external antenna port, WEP and WPA encryption, firewall and wireless bridging offered

Our Verdict: This 802.11g access point from Buffalo fared well in all the tests we put it through. It has a good data transfer rate and offers a reasonably good feature

set for setting up a personal access point.

Runner-up:

D-link DWL-2000AP+



Ring Out The Old, Ring In The New

These products were the highlight of 2004 from a technology point of view. However, these weren't the only products that made year 2004 momentous—there could have been many more of them to complete the list.

Technology is moving so fast it's becoming increasingly tough to keep pace. Even as we compiled this list of the best tested products of 2004, new technologies are evolving, and some of them such as SLi from nVidia, new 64-bit processors from AMD, and desktop motherboards from Aopen for the Pentium M processor will be in the market about the same time the magazine hit the stands, or in early-2005.

So, before we drop the curtains on the Zero-One Awards 2004, a look at imminent technologies that could change the computing landscape.

SLi is the next revolution in the graphics arena. Way back in the late '90s, 3DFX did the same thing with their Voodoo series, and now, after nVidia has brought over 3DFX, they are getting their act together with powerful cards.

SLi will allow you to plug in two graphics cards on the same motherboard. According to the various Web sites that had benchmarked SLi-based

solutions, you can expect a 60 to 70 per cent boost in frame rate at high resolutions. Expect SLi to hit India any time around January 2005.

Both Intel and AMD have decided to launch dual core processors by mid-2005. AMD might make it earlier than will Intel. But the point is not who makes it first—rather, the advantages of having two physical processing cores on a single chip.

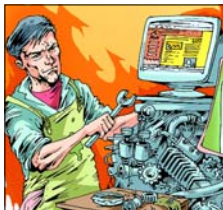
The possibilities are endless. These processor breeds can do wonders if all goes as expected.

AOpen and several other manufacturers recently launched desktop boards for the Pentium M processor. The Pentium M series is well-known for the performance it offers, and for low power consumption. Due to the low power consumption, the chips require less cooling, and that, in turn, results in less noise from the PC box.

The Pentium M line of processor is so good that there are rumours of Intel using them for their upcoming dual-core processor. Because of their inherent advantages, we might see them being used in media centre PCs and small form factor PCs.

So—keep an eye out for a whole lot of new technologies in 2005! Rest assured, Digit would feature each of them in its exhaustive tests. ☐





96 About sites and search



107 Agent 001 resurfaces



109 All your favourite stuff

Digital Tools

Technology For Personal And SoHo Productivity

Jumpstart

A Showroom on the Web

Find out how a smart idea and tech know-how can help create a successful business

Meera Vankipuram

Who says all businesses require swank offices and plush showrooms? Not when technology lets you do away with those fancy (and prohibitively expensive!) trimmings.

Antidesk (www.antidesk.com), a brand owned by Smartware,

a Pune-based B2B supplier of ergonomic computer trolleys, is a business that believes in replacing lavish retail outlets with an efficient workforce—armed with mobile phones and powered by the Internet.

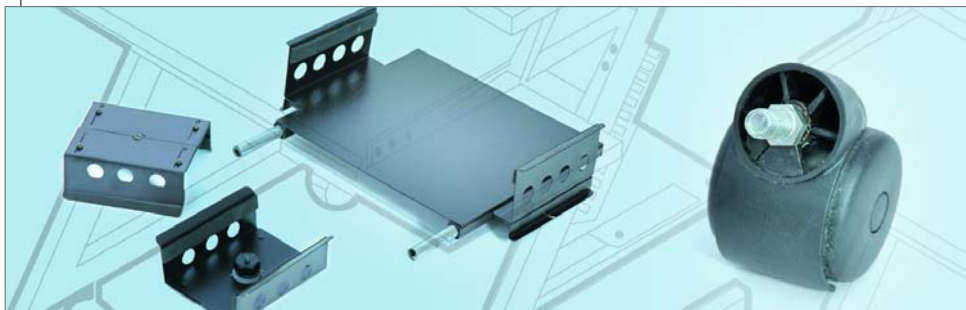
Antidesk makes the dual claim of being the first company in India to “truly develop the concept of Ready-To-Assemble (RTA) computer furniture,” and a user base of nearly 30,000 customers spread across 17 states in India. The brand has recently gone global after receiving orders from companies in the USA.

Pankaj Kolhatkar is the



Pankaj Kolhatkar
Founder, Antidesk

Photograph: Meera Vankipuram, Jayan Narayanan



Antidesk's Ready-To-Assemble furniture is completely steel-based with a powder-coated finish

founder of Antidesk. He has a degree in mechanical engineering, and as he puts it, "Innovation and technology are the two keywords that run our business."

Ready, Set, Go

Antidesk's USP is the do-it-yourself feature of its trolleys, office desks, tables and ergonomic computer furniture. Packed in attractive and easily transportable boxes, their furniture can be assembled with ease. Antidesk furniture is completely steel-based with a powder-coated finish.

With absolutely no retail outlets—nor any plans to set some up—Antidesk woos prospective customers through print ads and the World Wide Web. Antidesk's Web site uses the remarkable reach of the Internet to market their products around the world. Their online presence is a good study on how to put up an attractive Web front: first, the Web site is listed on major search engines and prominent Web-rings, potentially reaching a very wide audience. (To learn how to get maximum visibility for your Web site, turn to page 96) Moreover, Antidesk.com is not just another B2B website. Its tongue-in-cheek content ("Ten outrageous excuses for not buying an Antidesk" and "Super Moron Contest") grabs the eye.

Customers can view product catalogues online and make enquiries using an online form. According to Kolhatkar, "The entire process from enquiry to order fulfilment takes place electronically." The furniture is also distributed through IT resellers, who bundle it along with PCs as a value-add to customers. Antidesk has channel partners even in remote towns, and supply even small quantities of equipment.

Davis Wilson, of CK Service Master, in Thiruvananthapuram, says about his association with

Antidesk: "I was looking for computer tables for my own office. The wet weather in Kerala was causing my earlier MDF (particle board) furniture to deteriorate rapidly. They were also not able to bear the weight of my 17-inch monitor."

After scouring the Internet for suitable computer furniture, Wilson located Antidesk's Web site. "I was so happy with their products that I decided to take up a dealership myself. Today I distribute their products in four districts—Kanyakumari, Thiruvananthapuram, Quilon and Pathanamthitta. There is a great demand for these products in the home segment," he says.

Mobile Workforce

To transport the products, Antidesk has tied up with cargo services across the country and door-delivers supplies to their dealers. "In towns where Antidesk does not have dealers, we have our Antidesk-Direct scheme to deliver our computer trolleys directly to the end user, almost anywhere in India," says Kolhatkar.

Nitesh Singhal of Infotech Distributors in Guwahati says, "Though we distribute only one product (Indicart), there is a great demand for such furniture from our customers. We have not met Pankaj or his team—almost all communication has happened over the phone and e-mail." Infotech is the main distributor for the North-East region.

? The "Anti-desk" Formula

Why "Anti" desk? "It challenges the conventional notion of a desk," claims the team behind the company that prides itself in the quality of materials used, product designs, packaging, and constant innovation. Says Kolhatkar, "The online model is a cost-effective solution. Instead of setting up offices and employing marketing executives in every city, our Web site helps us connect with distributors across the country, and abroad, with ease."

Innovation and technology are the two keywords that run our business

Pankaj Kolhatkar

Founder, Antidesk

Antidesk has only one office in Pune, and doesn't have a large sales team either. Pankaj confirms, "Our ads in specific print publications generate queries. Many dealers find us through the Internet."

The Birth Of An Idea

Before making a foray into the furniture market, Kolhatkar and team discovered that these products were mostly manufactured by a small, unorganised sector. With a view to develop products with superior materials and technology, Antidesk hit upon the RTA brainwave. The company seeks to provide furniture that satisfies three major criteria—aesthetics, ergonomics and space efficiency.

In addition, technology has given them a unique vehicle to market their products. "I don't think this business would have been possible without the Internet. When we started out, in 2001, we had five people in our team. We didn't set up a showroom back then and decided to keep it that way. We are not into retailing," says Kolhatkar.

Antidesk has created a niche segment for their ergonomic furniture, which costs between Rs. 2,500 and Rs. 4,500.

The Antidesk team currently comprises Kolhatkar, who designs the products, sets up manufacturing processes and handles market development; Anand Vanzape handles the creative aspects—package design, advertising and branding; and Kolhatkar's wife, Manjiri, who co-ordinates the company's marketing and financial transactions. Ten highly skilled craftsmen and other support staff complete the small but extremely efficient Antidesk family.

Sandeep Sethi of VAST Computers in Amritsar has been associated with Antidesk for three years now. A dealer of computer peripherals, he stumbled upon Antidesk's Web site while looking for ergonomic furniture to bundle along with his peripherals. "Now, Anti-desk's products are helping me offer a better deal to my customers," he says.

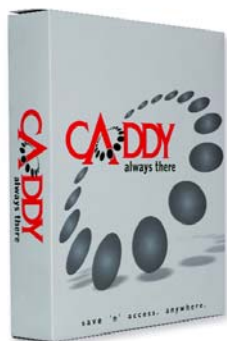
Perhaps other players in the SMB segment and even individual entrepreneurs in India can take a cue from Antidesk's novel marketing strategy—making the Internet your new best friend. ☐

meera_vankipuram@thinkdigit.com

Caddy Online backup

Caddy is an online backup service, offering 500 MB of storage space at Rs 3,000 per year. Its ArbusCourier feature e-mails links of backed-up files to multiple recipients, thus you save inbox space. The ArbusParking feature displays backed-up files deleted from your local drive. You can also access it using GPRS phones and PDAs.

Caddy does not offer incremental backups. Add to this, the connectivity charges every time it is used and the associated costs pile up.



Company **Caddy Data Services Pvt Ltd**

Price **Rs 3,000** an year for 500 MB of data storage

Phone **011-51669682**

E-mail **ashnayar@caddy4u.com**

Web site **www.caddy4u.com**



ACi Impression M11

Impress It Does

The ACi Impression M11 is an Intel Centrino platform with a 2.0 GHz CPU, 512 MB DDR SDRAM, an 80 GB hard drive and an ATi 9700 graphics chipset. Its hardware configuration is good enough to rival a desktop PC. Tested for gaming performance, it returned a fluid 61.6 fps in *Call of Duty* at a resolution of 800 x 600. Its CPU-Dhrystone score under SiSoft Sandra 2004 was 5133. This means that the laptop can be easily used for applications such as image-editing or DVD movie playback. This model offers a clean look and has a well laid-out keyboard with a good tactile feel. Other features include a combo drive and an SD/MMC card reader. Considering its configuration, it's reasonably priced at Rs 99,999 and supported by a three-year warranty.



Company **Allied Computer International (Asia) Pvt Ltd**

Price **Rs 99,999**

Phone **022-56407000**

E-mail **support@aci-asia.com**

Web site **www.aci-asia.com**



New & Notable

Epson Stylus R210

The Stylus R210 is Epson's entry-level photo printer. Moulded in translucent black and grey plastic, aesthetically it is clean and neat, akin to other Epson products.

The top-loading mechanism works flawlessly—no multiple paper pickups. The R210 has a competitive speed; however its print quality is nowhere in the neighbourhood of that of HP

and Canon. As far as photo-printing is concerned, there is no vibrancy and photos come out dark.

The package includes the printer, four ink tanks and the necessary software. At its price, there are far

better inkjets from competitors than the Epson Stylus R210, in terms of quality.



Company **Epson India Ltd**

Price **Rs 9,895**

Phone **080-30515000**

E-mail **vasu@eid.epson.co.in**

Web site **www.epson.com**



Samsung SCX-4100

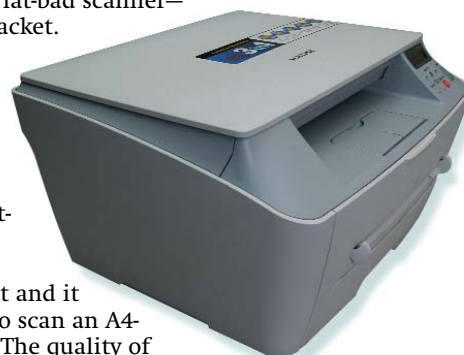
Not Much To Print About

Samsung's SCX-4100 raises the bar for entry-level laser multi-functional devices. The printer unit is based around the ML series from Samsung and it includes a flat-bed scanner—a rarity within this price bracket.

The Samsung SCX-4100 offers decent printing speeds and printed 12 pages in a minute. We found the print quality lacking though, especially when compared to the print-outs from the Samsung ML-1710.

Scanning speed is decent and it takes around two minutes to scan an A4-size photograph at 300 dpi. The quality of scanning is good, however finer details were not reproduced as expected.

Reasonably priced at Rs 15,999, the quality of printing was the only let down.



Company **Samsung Electronics India Information & Telecommunication Ltd**

Price **Rs 15,999**

Phone **011-51511234**

E-mail **marketing@samsungindia.com**

Web site **www.samsungindia.com**



What The Ratings Mean?

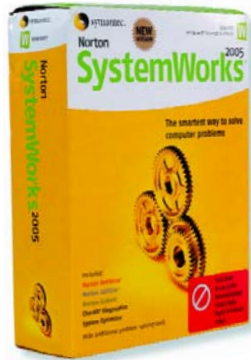
1 Poor: Has serious drawbacks and needs improvement before it can be used for its target application. **2 Mediocre:** Does not live up to expectations, needs improvement in many areas. **3 Average:** Reasonably competent but nothing spectacular about the product. **4 Good:** A good buy, better than most products in its category. **5 Excellent:** A brilliant combination of price, performance and features - far beyond expectations.

Norton SystemWorks 2005

Works As Usual

SystemWorks 2005, the latest release of the PC maintenance suite from Norton, has Worm Protection and a search bar for Norton GoBack v4.0.

The AntiVirus warned us as we accessed a file infected with W32.Sasser.Worm, but it could not clean it. Out of the box, it lacks the latest signatures of viruses, etc. The virus database in our case was almost three months old.



GoBack v4.0 did retrieve files and folders permanently deleted from a drive. We also tried 'Wipe Info' to delete a Word document, but GoBack retrieved the deleted file. You cannot format a GoBack-protected drive. This is good security, but you cannot opt out of this feature; you can do that only once during installation.

SystemWorks also includes Checkit Diagnostics, which has hardware tests for memory, graphics card, etc. These are mediocre and only provide functionality information. The new System Optimizer utility lets you tweak Windows XP settings.

This is a useful suite if you plan to use GoBack and Checkit, or keep your hard drive free of cluttered data. Updating from an earlier version is however, not recommended.

Company **Tech Pacific India Ltd**
Price **Rs 3,618**
Phone **022-55960238**
Web site **www.symantec.com**

Rating

PalmOne Treo 600

A superlative phone

The candy-bar form factor of the Treo 600 is surprisingly easy to hold, given that it houses an 11-bit, 2.2-inch LCD screen and a QWERTY thumbboard. The screen is 160 x 160, and not as sharp or clear as those of Palm PDAs. The processor is not as fast, and the memory not nearly sufficient for high-end PDA applications. This boils down to the fact that the Treo 600 is not a PDA. It is an excellent phone, however. The thumbboard is surprisingly easy to use and extremely handy. The QWERTY pad is heavenly to jot down notes or send off e-mails on the go.

A comprehensive program to manage contacts also lets you e-mail and SMS. An extremely useful task-management tool ties up with Microsoft Outlook. You can truly have all your data at your fingertips.

For a cell phone, one-handed operation is vital and the Treo 600 delivers, surpassing any PDA, cell phone or Pocket PC phone we have tested.

The battery lasts for around 4 to 5 days with moderate usage. The camera takes pictures that are good enough for MMSes and e-mails.

The Treo 600 is an excellent phone, right from voice quality to usability. Yes, we highly recommend it.



Company **Esource Global**
Price **Rs 37,000** Phone **91-22-26732929 55021620**
E-mail **Sales@esourceglobal.com** Web site **www.esourceglobal.com**

Rating

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What The Ratings Mean

1 Poor: Has serious drawbacks and needs improvement before it can be used for its target application. **2 Mediocre:** Does not live up to expectations, needs improvement in many areas. **3 Average:** Reasonably competent but nothing spectacular about the product. **4 Good:** A good buy, better than most products in its category. **5 Excellent:** A brilliant combination of price, performance and features - far beyond expectations.

Optical Desktop with Fingerprint reader

This Microsoft offering comprises a fingerprint-recognition keyboard and an ambidextrous mouse.

The keyboard has a cluttered layout of buttons and a fingerprint scanner. The scanning software integrates well with Windows XP and you can use your finger to log into Windows, or say, your Web mail site. The scanner is convenient and more secure than standard password-protection. Also, programmable buttons allow for one-touch launching of programs.

The wireless mouse is quite similar to the older generation except for an ambidextrous design and a smaller size. Horizontal scrolling offered is a boon for MS Excel users. It requires two AA batteries to work at full-strength but you can also use only one battery to reduce its running cost.



Company **Microsoft Corporation India Pvt Ltd**
Price **Rs 6,776**
Phone **011-26294600**
E-mail **connect@microsoft.com**
Web site **www.microsoft.com**

Rating

Travel PAC World Travel Adapter

World Travel Adapter is a combination of various power plugs, and acts much like a universal plug. It has an innovative Swiss-knife like design with a compact shape and retractable switches that hide inside the adaptor. A handy utility for the frequent traveller, it conforms to various standard sockets with two poles for Australia, Europe, UK, and USA. An in-built fuse protects your precious equipment from ill-mannered power sources. It also comes with a lifetime warranty. However, all this comes at a price (Rs 1,150). Another model from the same company, the World-Connect Adapter is cheaper, with a simpler design and offers surge-protection.



Company **Camac Holdings**
Price **Rs 1,150**
Phone **033-22207961**
E-mail **camac11@vsnl.net**
Web site **www.travelpac.com.sg**

Rating

Mozilla Firefox

Out of the ashes of the Browser Wars arose Firefox—the Browser Reloaded. We take a historical look at the browser that is making history

After the mess that Netscape left behind, after the Browser Wars were over, out of all the dust and rubble emerged Mozilla Firefox, touted as the best browser today.

If you're ready to make the switch to Firefox, it would be nice to have an introduction into what's happened over the past decade to make Firefox what it is today.

The Rise and Fall of Netscape

With a good mix of features and a free license for non-commercial purposes, the Netscape browser soon became the de facto standard during the Internet revolution of the mid-1990s.

Microsoft saw Netscape's success as a threat to the monopoly status of the Windows OS. It began a campaign to establish control over the browser market. The resulting battle between Netscape and Microsoft became known as the Browser Wars. IE 5.0, in 1998, with many bug fixes and stability improvements, saw Navigator's market share plummet below IE's for the first time.

In March 1998, realizing that the browser market was lost, Netscape split off most of the Communicator code and put it under an Open Source license. The project was dubbed Mozilla. However, the Mozilla engineers decided to scrap the Communicator code and start from scratch.

Netscape's new owners, AOL, released Netscape 6 on November 14, 2000, based on pre-release Mozilla code. The product was a huge disappointment: it was bulky, slow, and unstable. Netscape 6.1 and 6.2, released in 2001, addressed the stability problems, but were still large and slow.

In 2002, AOL released Netscape 7. It was based on a more stable and notably faster Mozilla 1.0 core and bundled with extras. The market responded to what was essentially a repackaged version of Mozilla by ignoring it.

In July 2003, AOL announced that it was laying off its remaining development staff working on the Netscape version of Mozilla. Combined with AOL's antitrust case court settlement with Microsoft to use IE in future versions of the AOL software, this marked the effective end of development on Netscape Navigator, the open source projects notwithstanding.



Coming back to Mozilla: the engineers, if you recall, had decided to scrap the Communicator code and start from scratch. The Mozilla Organization (Mozilla.org) eventually succeeded in producing a full-featured Internet suite that surpassed Communicator in both features and stability. Mozilla.org was newly-created back then; its intent, among others, was to develop an application from the mess that Netscape had left behind.

Enter Mozilla.org

Under the AOL banner, Mozilla.org continued development of the browser and management of the Mozilla source until July 2003, when this task passed to the Mozilla Foundation. The Foundation is a non-profit organisation composed primarily of developers and staff from Mozilla.org.

By June 2002, the Mozilla project had produced a serviceable, standards-based Web browser that worked on

multiple OSes. The Mozilla 1.0 release in June 2002 was praised for introducing new features that IE lacked. Additionally, the Mozilla browser became a de facto reference implementation for various World Wide Web Consortium (W3C) standards.

In July 2003, AOL announced that it would close down its browser division, which was, in essence, Netscape's Mozilla. Far from being the end, this was the beginning of the Mozilla Foundation, formed by former Netscape/Mozilla veterans to take responsibility of the development of Mozilla.

And thus, Mozilla Firefox was born: it is the browser module of the Mozilla suite. Originally known as Phoenix and later Firebird, it is a free Web browser developed by the Mozilla Foundation and hundreds of volunteers. Firefox has received a great deal of acclaim from the news media. Firefox has become the main focus of Mozilla development, along with the Mozilla Thunderbird e-mail client.

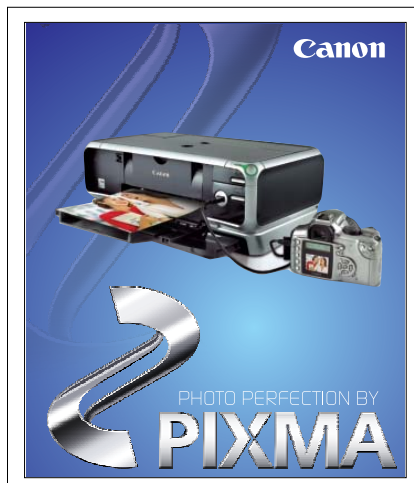
Firefox vs IE

Firefox has attracted attention as an alternative to Microsoft's Internet Explorer, since IE has come under fire by the media for insecurity, lack of features, and ease of spyware and malware installation.

Amongst the salient non-IE features of Firefox are tabbed browsing; a download manager; themes - which are essentially skins; and extensions - which are essentially plugins. The Mozilla Foundation takes pride in Firefox's compliance with W3C Web standards. Firefox supports most basic Web standards such as the latest revisions of HTML, and quite extensive support for CSS and JavaScript. Also supported by Firefox are "Live Bookmarks," powered by RSS or Atom feeds. Live Bookmarks allows users to check news sources via their bookmarks.

Standards-compliant. A host of features that IE doesn't have. Secure browsing. Far fewer crashes. Live Bookmarks. A small download. Built from the ground up by engineers who knew the old Netscape code very well. What's not to like about Firefox?

Find FireFox 1.0 on this month's Digit DVD!



TECH NIGHTMARES

Windows XP

Here are a few things you probably hate about XP—and what to do about them

1. XP searches are way too slow

Windows XP runs on the NTFS file system, which is designed for fast indexing and searching. By default, every folder you create is indexed by XP's Indexing Service for fast searching. You would expect that XP knows where your files are, and would serve them up in a jiffy when you do a search. But hey, what do you find? Searching seems to take just as long as in Windows 98. There are numerous options in the Search menu—such as the date the file was modified, and so on. Even then, when you search for, say, image files over 1 MB in size—XP looks for it in all drives, and even in the Windows folder, when it should know that there are no such files in the Windows folder.

Solution: Download and install the Google Desktop Search tool. You can find it at <http://desktop.google.com>. It brings up search results much faster, and does its indexing silently, in the background. The only hitch is that results are not always completely up-to-date; for example, say you name a file "digit.txt" in the morning, and rename it to "digit2.txt" in the afternoon. Now, a search for "digit.txt" would show up the old, non-existent file, and clicking on it will bring up an error that says that the file no longer exists.

If, for some reason, you don't like the Google Desktop, there are other programs available that do the same job, such as The Sleuthhound!, available at www.isleuthhound.com. One advantage of The Sleuthhound! is that there is support for intranets, which the Google Desktop Search currently does not have.

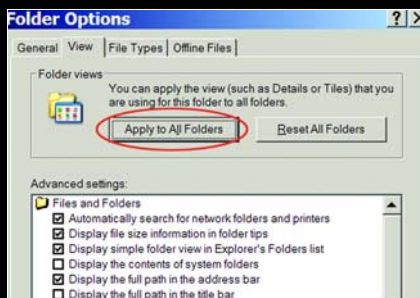
2. My Folders All Look Different!

Folders in XP seem to show up in a random sort of way, some with icons, some with thumbnails, and so on. This can become confusing, especially if you have recently migrated from Windows 98—where everything was displayed as icons by default.

Solution: To view all your folders the same way, just open a folder, and click on the "Views" button to the extreme right. Here, select what you want to be displayed—thumbnails, or details, or

whatever. Now, go to Tools > Folder options. In the "View" tab, click on the "Apply to all folders" button, and in the dialog box that comes up, click "OK."

You can also group items in a folder according to your preferences—right-



Make all your folders look the same and avoid the confusion and chaos

click in a folder, select "Arrange icons by," and click "Show in groups." This can be used in conjunction with the standard sorting methods—by name, or by date, and so on. For example, if you arrange icons by name and then choose "Show in groups," you'll see files grouped according to letters.

Furthermore, if the thumbnail view is irritating (the thumbnails are just too large), you can resize them. Download the TweakUI utility for XP, available at www.microsoft.com/windowsxp/downloads/powertoys/xppowertoys.msp. In TweakUI, expand the "Explorer" branch, and select "Thumbnails." Here, change "Size" to 32.

3. The cluttered Start Menu

If you have a lot of programs installed, clicking on "All Programs" in the Start Menu will bring up a huge list.

Solution: You can drag and drop the applications you use most often into the space right above "All Programs." First, go to Control Panel > Taskbar and Start Menu. Here, in the "Start Menu" tab, click "Customize." Set the "Number of programs on Start menu" to 0. Click "OK" twice. Now go to "All Programs," and pull the programs you want into the empty space above "All Programs." From now on, you won't need to click "All Programs" very often.

4. The Irritating Autorun Feature

In XP, when you pop in an Autorun-enabled CD or DVD into your drive, a dialog box comes up asking you what to



Get rid of this irritating thing that pops up whenever you insert a CD or DVD

do: open using a certain program, and so on. What's worse is that there are several types of CDs that XP recognises—and even if you say "Take no action" and tick the box that says to always do the same thing, it may still pop up the next time.

Solution: To avoid the pop-up from coming up, right-click the drive icon for your CD or DVD drive, and select Properties. Choose the AutoPlay tab, and choose the desired action for each type of CD. For example, you can choose "Music CD," and then click "Select an action to perform," then select "Take no action." Do a "Take no action" for every type of disk.

5. The Low Disk Space Warning

When one of your drives runs low on disk space, XP constantly reminds you about it. After two or three times it can get really irritating.

Solution: Run regedit, open HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer. Create a DWORD and call it "NoLow DiskSpaceChecks," if it's not already there. Double-click on "NoLow DiskSpaceChecks," enter the value "1," and press OK. If the DWORD was already there, change its value to "1." ■
ram_mohan@thinkdigit.com

Wikipedia.org

Your one-stop source for information about, well, almost anything!

Ram Mohan Rao

The Register, an online IT news Web site reported on 7 September, "For most Web surfers, Wikipedia is simply an occasionally useful online resource that needs to be taken with a huge sackful of salt. For others, it's a poor excuse for a real encyclopaedia. But for its proponents, it's nothing short of revolutionary."

A poor excuse for an encyclopaedia or something that will revolutionise the way we look at information? Either way, there's no denying that Wikipedia is useful and fun. From definitions to full-length articles, from informative snippets to views on genres of music, Wikipedia has it all. And you can add to Wikipedia—just as to any Wiki. (For more on Wiki, read the article "Everyone's Invited" in Digit's February 2004 issue).

Since there are people out there who will read what you add, be responsible while editing a Wikipedia page. Our suggestion is to only write about what you know really well.

Wikipedia can be confusing when you first visit it. Once you get used to it, however, you will see an order to the confusion. Basically, you need to remember that:

- ▢ Every page, including the main page itself, can be changed by anyone—including you!
- ▢ You will always find a huge number of linked words on a page. Most of these link to other Wikipedia articles.
- ▢ The Help section—which can be reached from every page—is comprehensive, and will tell you about almost anything you need to know.

The Main Page

The Main Page gives you a flavour for Wikipedia as a whole. You will see the Navigation section on the left, which includes links to the Community portal; recent changes to Wikipedia; "Random page"—which takes you to a random article page, of course; and the Help page. Beneath the Navigation section is the search tool; "Go" takes you to an article related to what you searched

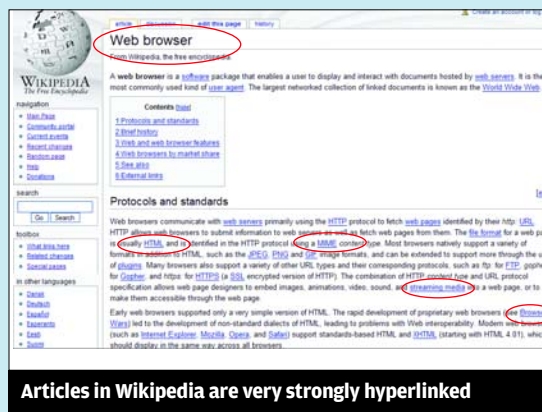


Wikipedia's main page. There is always a "featured article"

for, and "search" takes you on a search for all pages that mention your search term. And beneath that is the toolbar, which includes the immensely useful "What links here." By clicking on "What links here," you can see all the pages that link to the article you're currently viewing.

The Tabs

The tabs on the top of any page help you navigate within Wikipedia. "Discussion" takes you to a page that contains everything people have said about the page in question—and you can add to the discussion, of course. "Edit this page" takes you to a place that seems like magic at first—you will find that you can actually edit the page you're viewing, and your changes show up instantly. "History" is a list of changes that were made to the page. "Move" allows you to move the current page to a different location, that is, under a different classification. And the "Watch" tab adds



Articles in Wikipedia are very strongly hyperlinked

the current page to your "Watchlist," the list of pages changes to which you are monitoring (yes, you can do that as well).

Why Log In?

You don't have to log in in order to be able to do most things on Wikipedia. But if you do, there are a few advantages. First, the editing that you do while at Wikipedia will be logged under your username instead of just under your IP address; you can view all your contributions at any time by clicking an icon; you can have a "user page" where you talk a little bit about yourself; and so on.

Get involved!

Wikipedia is all about the free dissemination of knowledge. Arti-



Have fun editing pages—but do it responsibly!

cles are very strongly networked to each other, which makes it a breeze to research a topic: just choose a starting point, and you never know where you might end up—with all those hyperlinks all over the place.

True, Wikipedia does have a somewhat disorganised look and feel, but that's the price to pay for so much free knowledge with no real centralised command. You can get involved simply by navigating to the subjects you know a lot about—and either adding articles or editing some.

Remember, you are never lost at Wikipedia—help is always at hand. Do some basic browsing and experimenting in the "Sandbox"—which you'll find under "Help"—and you'll be all set to go! ☐

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Audio Editing

We all love music! It's merely tastes and the genres we listen to that distinguish us. Unfortunately, not all of us are talented enough to make music, but with the right software, anyone can edit and tweak their favourite songs. Whether it's mixing favourite tracks, or creating non-stop compilations, or even editing one's own little creations to make it sound more professional, there is software out there that will ease the task.

The first mistake most of us make is pessimism—as soon as we open an editing software, we see Sine waves and audio professional jargon, and are easily intimidated. However, *Digit* is here to show you that things are not as hard as they seem.

The two most popular Audio Editing software in use today are Sony Sound Forge (previously known as Sonic Foundry's Sound Forge) and Adobe Audition. Here we will give you tips and tricks on how to put both these software to good use.

Normalising A Track

When you open a track to edit, the first thing you should check for is 'clipping'. Some badly recorded tracks may have certain overtly loud sections, which will distort at loud volumes. These sections are said to 'clip'. These are easy to spot when viewing the track as a wave form.

The wave form view has a left and right channel wave for stereo tracks, and each track has an X axis, also called the infinity line. The Y axis limit, both towards the negative and positive, is 0 db (zero decibels) for both left and right channels. If a wave peak crosses this 0 db barrier, it is said to clip. In order to prevent it from clipping, you can normalise a track.

Normalising an audio clip converts the track in such a way that the highest



SECRETS THAT KEEP YOU AHEAD IN THE RACE

GENERAL TIPS		30 MINUTES EXPERT	
Audio editing	83	Search Your Desktop	85
Fading In And Out	84	Know Your Music	88
Editing A Wave Form	86		
Mixing	86		
Flange Effects	87		
Inserting silence	89		
Mono and stereo	89		
Synching With Video	90		

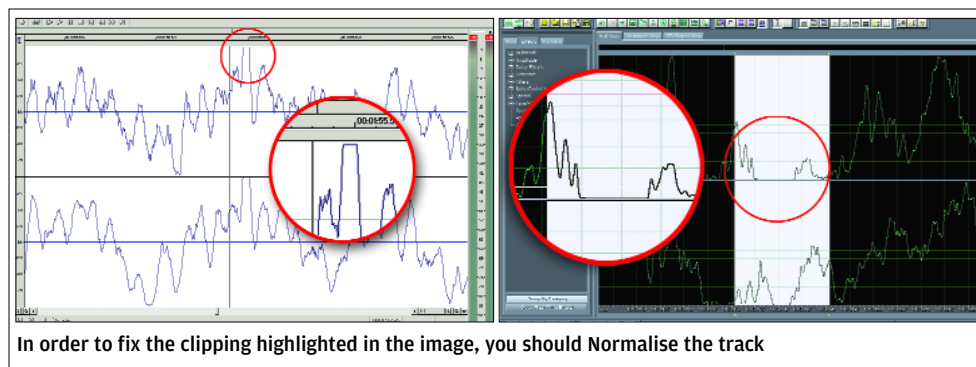
select the entire track by using [Ctrl] + [A]. Now go to "Process > Normalize...". Make sure that the Peak level radio button is checked and the slider is set to 0.00 db. Click OK to normalise.

Audition

Select a part of a track, or the whole track. Go to "Effects > Amplitude > Normalize...", make sure that 'Decibels Format' is checked and that 'Normalize to' is set to 0. Click OK to normalise.

Selecting Part Of A Track

When selecting a part of a track, you need to know where your selection should begin. For example, if you are looking to select an event, such as when the vocalist starts singing, or when the drum beat kicks in, you need to find the exact



peak (the loudest sound in the audio file) hits exactly 0 db. Now you will have distortion free audio.

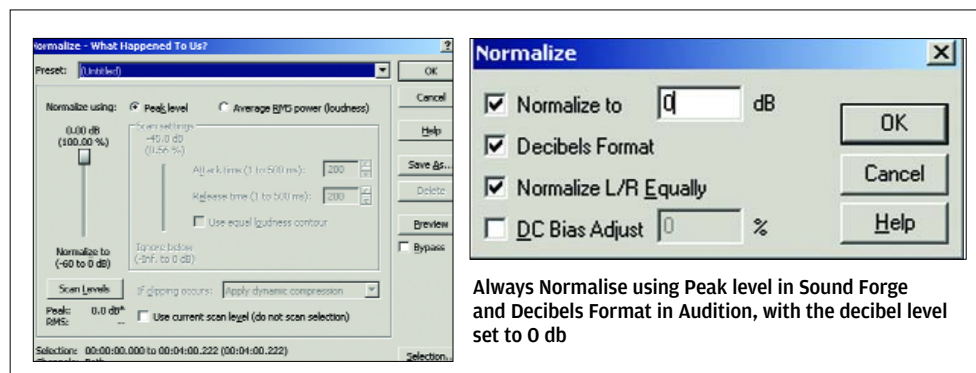
Normalising can also be used on a track that is too soft—where the wave form never comes close to touching the 0 db line.

It can also be used to normalise just a section of an audio track.

Sound Forge

To normalise a track or a selection in Sound Forge, select the part of the track you want to normalise, or

spot. If you are even a little off, you will end up with a selection that does not follow the songs' tempo (beats per minute or bpm). If you select, say, six beats of an eight-beat song, you will not be able to loop your selection, or mix it with the same song—the



beats will sound off.

In order to properly select an event, you need to listen to the song tempo and the beat count, while playing it and watching the wave form with a viewable zoom. This will give you an approximation of where your event lies.

Once you get a fix on the general area you want to select, zoom in and find a spot where the wave forms of both the left and right channels meet the infinity line.

You can make out the difference between events just by looking closely at the wave form. Just before an event, you should see the wave subsiding, and just as the event begins the wave will rise.

The point in the middle, where the wave meets the infinity line is the exact beginning of the event. You can always loop and listen to your selection later to make sure you got the exact beat count and the entire event.

Sound Forge

You can place markers while listening to the song by pressing [M]. Once you have marked your selection roughly, you can zoom in and look for the exact beginning and end of your event.

Press [Shift] + [Z] to get the marker to the nearest point where the wave meets the infinity line.

Now place a marker at the end of the event and double-click between the two markers to select the event. Click on the loop button, located at the top left of the screen, under the edit menu option, and press play.

Listen to your event a few times to make sure that you have got the entire event as per the beat count of the song. Now you can cut or copy, your selection and paste or mix it into the same file, or a different audio file.

Audition

Audition uses Cue markers. Press [F8] to insert a cue marker when playing a song. Later you can zoom in to correct these markers. Use the standard keyboard



shortcuts to cut, copy and paste your selections.

Merging Tracks

 You can merge two tracks, or create a loop by merging a selection over and over. In both software, this is done by copying a selection or track normally. Now find the end of the track you wish to merge with, and then paste the selection or track. Again, the most important thing here is to understand the beat count and make sure to zoom in enough to the wave form to find the exact end and beginning of the selections or tracks.

Fading In And Out

 While editing a song, you may want one to fade out while the other fades in. In order to do this, you will first

need to make sure that the first track fades out and the other fades in before mixing the two. You can either choose to do the fade in and out manually, or just select the parts of the tracks you want to fade and let the software do it automatically.

Sound Forge

First select the portion of the track that you want the fade in or out to begin from. Now go to "Process > Fade > In" to make the selection fade in, or "Process > Fade > Out" to fade out. You can also choose 'Graphic' if you want to adjust the fade manually.

Audition

Audition has the standard automatic fade in and out feature. All you have to do is select the part of the track you want to fade in or out,

Bonus Tip

Preview

Remember, with both software, every effect you add can be previewed by clicking on the preview button on any of the pop up boxes. If you don't like what you hear, click Stop, change your settings and then Preview again!

and then go to "Favorites > Fade In" or "Favorites > Fade Out", depending on your requirements.

Looping a track

 When creating your own mixes, very often you will need to loop a track or a beat.

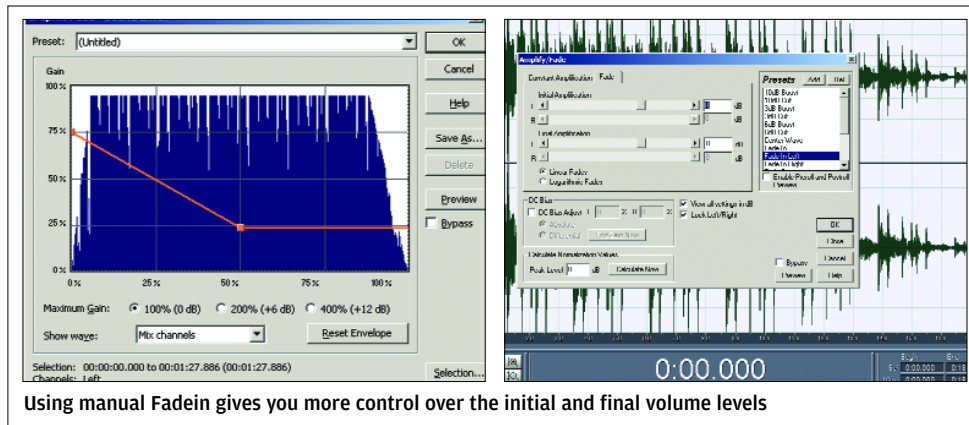
Sound Forge

When you select a track, or a part of a track, that you want to loop, check it by listening to it. You can make just the selection play in a loop by clicking on the Loop button located at the top left of your screen.

Only once you are sure that the selection will loop properly, and there are no audible breaks or missing beats, press [L]. This will pop up a dialog box that will ask you to fill in a few details about the loop you want to create. You can also just copy and paste your selection as many times as you want it to loop.

Audition

In Audition, you can just press [Ctrl] + [P] to open the Wave Properties dialogue box, and then click on the



Using manual Fadein gives you more control over the initial and final volume levels

Ease your search through gigabytes of data with Copernic Desktop Search

If you hate spending time looking for that crucial file amidst the scrambled data on your hard disk, meet Copernic Desktop Search (CDS) (www.copernic.com). This tool helps you search through your personal files, pictures, music and videos and find the file in just few clicks.

[illegible]

WMA, WAV, etc. Hence, when searching for an MP3 file, click 'music' in the 'Search' field and specify its name. To play the file found, select it and click the 'Play' icon in the left hand corner listed in the Details section.

[illegible]

default folders monitored by CDS. To add a drive, say, D:, or a folder to this list, click Add in the 'Add a Folder' window and make an appropriate selection. Keep clicking OK to exit.

 By default, CDS does search within e-mails and attachments in Microsoft Outlook or

[illegible]

The screenshot shows the NetBeans IDE with the 'Main Window' and 'Source' tabs. The 'Main Window' displays a Java Swing window titled 'Main Window' with a 'Greeting' label and a 'Greet' button. The 'Source' tab shows the Java code for the 'Main Window' class, which includes a 'Greet' method that prints a greeting message to the console.

'Perform daily indexing tasks at' to suit your need. Note that by default, the folders in the indexing list are scanned after a period of 4 days. Tweak the 'Scan file folder for changes every' field to change the scanning frequency.

[illegible]DECEMBER 2004 **DIGIT** 85

Loop tab to see your looping options. You can also use the old trustworthy way of copy-paste to get a track to loop as long as you want it to.

Editing A Wave Form

 If you know your music theory inside out, you can directly edit a wave form. This means that you will actually change the wave form manually, by using your mouse. Do not do this unless you know what you are doing, or are just playing around with a track you don't really need anyway.

Changing a wave form is especially useful to professionals when a particular wave peak clips—there is no peak to the wave, instead it looks like a plateau. In such cases, you can adjust the wave form to a more suitable peak, rather than a plateau.

Sound Forge

In Sound Forge, you need to use the pencil tool to modify a wave. This tool button is



shaped like a pencil, and placed right below the Help menu. Click on it to enable the pencil cursor, then zoom in to your wave to see the frame points. Now you can use your pencil tool to just drag the points higher or

lower, redrawing your wave as you go along.

Audition

In Audition, there is no specific tool required to redraw a wave. All you need to do is zoom in to see the frame points and then drag them using the mouse. This will let you restructure your wave any way you see fit.

Mixing

 Perhaps the most important aspect of audio editing is mixing. Whether you are creating your own tracks, or using readymade ones, chances are, sooner or later you are going to need to mix them in order to get the sounds you require.

Bonus Tip

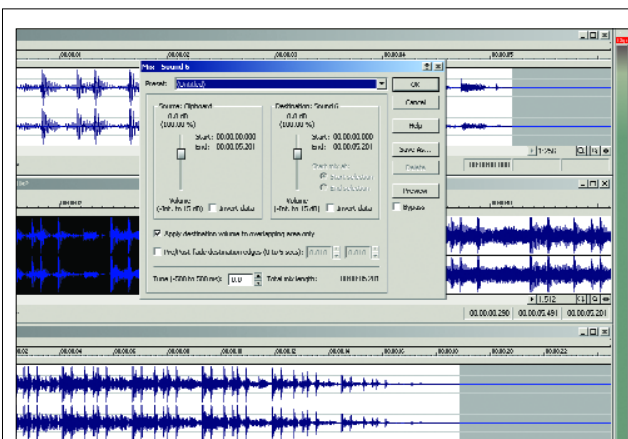
Overdoing it

You don't need to add a million effects to make a track or loop sound great. In the end, this is all about good music, and you will often come across tracks that need no improvement whatsoever. Don't change things for the sake of change!

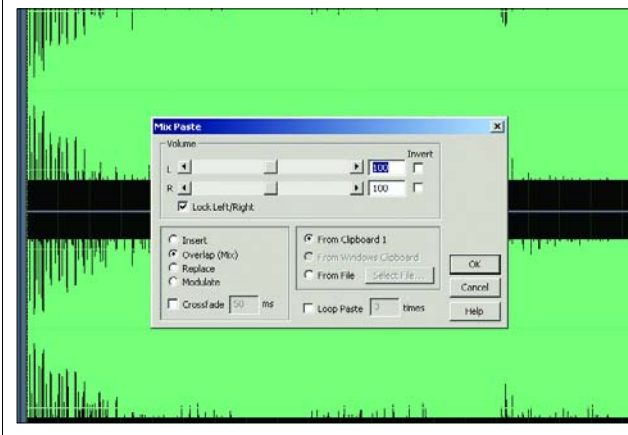
Sound Forge

In Sound Forge, you need to decide which two selections or tracks you wish to mix, and carefully check their beats and speeds. Even if you are mixing one part of a song with another part of the same song, beware, tempos vary. Just because it's the same song doesn't mean you can just copy paste one beat and place it over another—unless it's a fixed electronica beat, as used in some trance and disco tracks.

To mix two tracks, open a new file, and then copy a track and paste it in the new file. Now, copy the second track or selection from the exact spot you want the mixing to occur. Go to the new file and select the exact spot in the first file from where you want mixing to occur. Once your cursor is at the correct spot, right-click and select "Mix...". A box will pop up and ask you to specify a few settings, such as the volume



When mixing, be particular about cursor placement, and don't forget to set the volumes appropriately



Expert Opinion



Gilroy Valladares
Operations Manager
Sound Dot Com

To help us demystify most of the basics, we got Gilroy Valladares to share some of the tricks he uses to edit audio. Gilroy is operations manager at

Sound Dot Com, a professional Live Sound and Touring company that provides audio expertise for events all over the world.

Their portfolio includes the Sahara Sangeet Awards held recently at the Royal Albert Hall, London, the Gladrags Megamodel show, the CEAT Cricket Awards, War of the DJs, as well as providing expertise for live performances by bands such as Deep Purple and UB40.

Gilroy can be contacted at soundcom@vsnl.com.

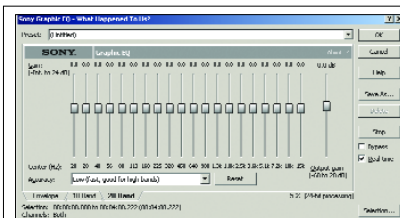
Bet You Didn't Know

Adobe Audition has a nice feature that removes the vocals of a stereo track. Considering that it only has two channels of sound, and one track, it does a pretty good job. We tried it on an audio file, and though it made the bass drum beats sound a little tinny, it did remove the vocals. This is a nice feature that can be used to create amateur karaoke songs. To do this, go to "Favorites > Vocal Remove". It even left the background vocals in place, which will definitely make your karaoke session seem more professional.

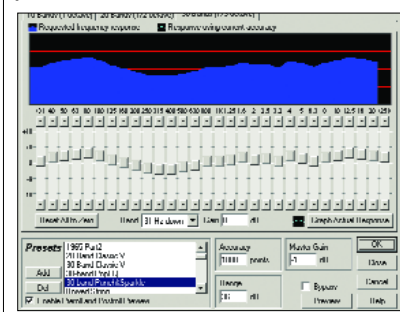
of the selection you are adding and the volume of the track you are adding it to. Click OK and your tracks will be mixed. The undo option ([Ctrl] + [Z]) is very handy here!

Audition

In Audition, the procedure is exactly the same as above. After you have copied the first track to the new file, and copied the second track, select the exact position of the cursor and then right-click and click on "Mix Paste...". Here again a box pops up, with a volume control for only the selection you are pasting. Modifying the destination file's volume isn't really required anyway. If you do not want to mix the files, you can also choose to Insert



You can use the Graphic Equalizer to tweak the bass mids and treble according to your preference



30 LOGITECH Quick Cam Messengers and other prizes worth lakhs



Turn to Page 182

the copied selection at the current cursor position, or even Modulate the files with Cross Fading.

The most useful bit here is the loop option. If you want your selection to be mixed and looped say, 10 times, you can just choose Overlap (Mix) and select the Loop check box and enter the value 10. This will loop your copied selection 10 times and then mix it into the current file.

Equalising a Track

One of the most important tools used to make your audio sound better is the equaliser. In order to

get the exact tones you want, you need to equalise each track before you mix them or add effects to them. You can even use the equaliser to create different sounding Left and Right

channels.

Most importantly, use the Preview button to listen to how your settings will sound, and also remember to use the Bypass check box to check the difference between the original and equalised track.

Sound Forge

In Sound Forge, you can open the equaliser by going to "Process > EQ > Graphic". The equaliser pops up, and you can choose from the three types of equaliser displays—Envelope, 10 Band and 20 Band. Set the equaliser to the desired level, and don't forget to preview your changes.

Audition

After you select a track or part of a track, go to "Effects > Filter > Graphic Equalizer..." to open the graphic equaliser. The Audition equaliser has options for 10, 20 or 30 band equaliser. It also has preset

equaliser settings which can be selected from the bottom left of the pop up box. Set the equalisers and then use the preview and bypass options to hear the difference.

The Echo Effect

One of the most common effects used is the echo effect. When done with care, this can add just the right touch to your track or loop.

Sound Forge

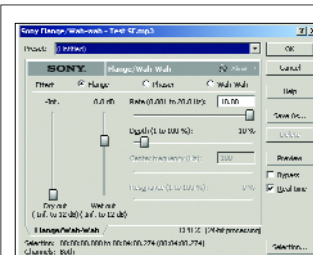
To add an echo effect, you should first select a track or a part of a track. Now, go to "Effects > Delay/Echo", and choose "Multi Tap..." or "Simple...", depending on the type of Echo or Delay you want. If you choose Multi Tap, a box pops up, where you can select the Multi Tap Delay, the Number of taps, the Modulation rate, depth and Feedback, and also the Delay time. If you are not well versed with using echo and delay, just trust your ears and change the settings accordingly.

Audition

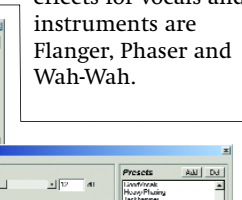
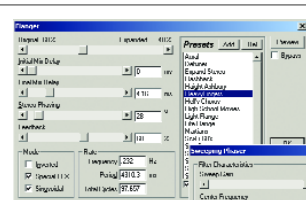
In audition, you can add an echo effect by going to "Effects > Delay Effects > Echo...". A box pops up with the different options for echo. You can set the Decay, Delay and Initial Echo Volume for the left and right channels individually. There is also a list of presets on the right that you can choose from. Make sure to try out the "Old Time Radio", "Robotic" and "Taj Mahal" presets.

Flange Effects

When working with a single-track recording, such as only-vocals, etc, you can consider adding effects. The three most widely used effects for vocals and instruments are Flanger, Phaser and Wah-Wah.



You can use the Flange, Phaser or Wah-Wah effect to add psychedelic effects





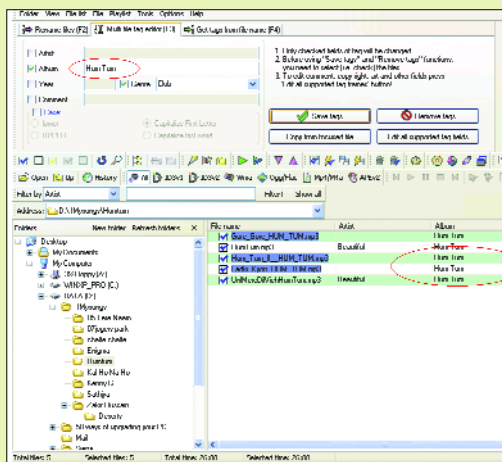
Know Your Music Inside Out

Organise your music collection with Tag&Rename

Nikhil Dhamapurkar

Today, most of us have hundreds or even thousands of music files, and as our collection gets bigger, it becomes increasingly difficult to organise. Save time by organising your music files with the Tag&Rename (T&R) management utility!

Tag&Rename is designed for MP3, WMA, OGG, MP4 and flac music files. With T&R, you can quickly and easily rename all files in your music collection using the embedded tag data within files, write in new tag information or edit existing tag information, create tags based on



Tag multiple tracks, from the same artist or album, simultaneously

STEP 2 Multiple File tagging

With T&R, you can tag multiple file simultaneously, so if the artist, album or genre information is common to several files, that information can be changed all at the same time. All you need to do is select the folder in the T&R folder tree. The tracks in that folder will be shown in the right window. Select the songs you want to tag.

Select the "Multi file tag editor" tab, then tick the "Album" checkbox. Type in the name of the album; select the save tags

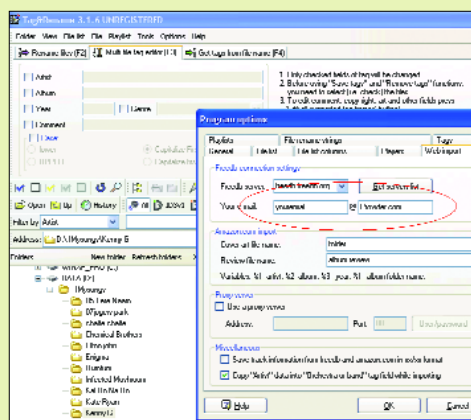
Rename files according to the tag sequence you specify—artist-album, or album-artist, etc.

filenames, get song information from the freedb server.

STEP 1 Naming songs

With T&R, you can rename your favourite songs in a particular sequence—for instance, artist name followed by filename. To do this, select your songs folder in the folder tree. Songs in this folder will be shown in the adjoining window.

Now, select the files you want to rename, get to the "Rename files" tab, and in the space provided for "File name mask", enter "%1 - %7" and click "Test." A "Rename files test" window pops up. Here you can see how your music file will look after renaming. Now, click "Rename," and your songs will be renamed.

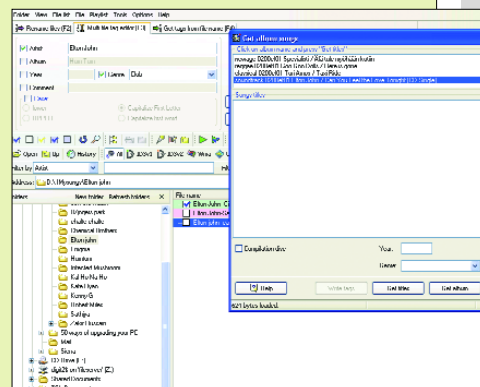


Configure FreeDB to update your ID3 tags automatically

button this will change the name of the album of all the songs. Similarly, artist, genre and other information can be entered.

STEP 3 Configure FreeDB

There may be songs in your collection for which you do not have all information, such as the artist, album, and genre. You can search for this over the Net through T&R. You will first have to configure the freedb service. To do so, go to Options > Select program options in the program options window that pops up. Select "Web import." Specify your e-mail ID in the "Your e-mail:" field. You need to provide an e-mail ID. If you do not want to enter your real e-mail address,



If you get multiple matches for ID3 tags for your songs, you will need to choose the one you are satisfied with

just enter any e-mail address and the freedb service will still work. Press "OK."

STEP 4 Get song information using FreeDB

You can get song information from freedb servers on the Internet. To get information about your songs, select the songs in the right window and click the "Get album titles from FreeDB" icon.

The results will be shown in the "Get album songs" window. Select the correct album and press "Get titles." Your songs will be tagged automatically.

Bonus Tip

Specific Uses

Don't edit video files in either Adobe Audition or Sony Sound Forge. Audio editing software are not made for video editing, and to do so professionally, you should use specialised software such as Adobe Premiere Pro.

Sound Forge

Go to "Effects > Flange/Wah-wah...". A box pops up which will have three radio buttons, one each for Flange, Phaser and Wah-Wah. Select the effect you want, set the rate, depth, resonance and frequency of the effect and then preview your sound. Use the Real-time preview monitor to make changes.

Audition

Audition offers a Flange effect, and a Sweeping Phaser effect. These are accessible from the "Effects > Delay Effects" menu. Audition does not offer a Wah-Wah effect. Use the preview and bypass functions to check and re-check your settings.

Inserting Silence



When compiling a CD, or preparing a track for

mixing, you may need to insert a predefined period of silence. This will let audio CD players distinguish between tracks or give you the correct spacing that is required when mixing two tracks.

Sound Forge

To insert silence in Sound Forge, go to "Process > Insert Silence...". Add in the length of the silence you want to add, choose to add it at either the position the cursor is, or at the beginning or end of the

track, and click OK.

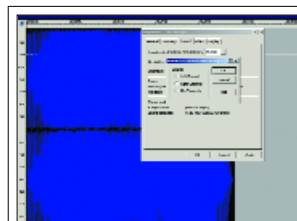
Audition

In Audition, go to "Generate > Silence", and enter the number of seconds, and press OK.

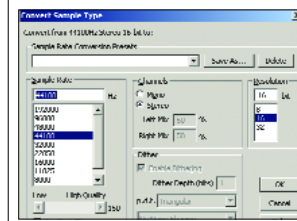
Converting Between Mono And Stereo



Sometimes, you may need to convert a track that was recorded in mono to stereo. Rarely would you need to convert stereo to mono, though this is also possible. Both software have



Convert your tracks between mono and stereo easily, in order to better control your dual channel output



an easy way of converting between mono and stereo to give you control over your dual channel output.

Sound Forge

In Sound Forge, just right-click anywhere and select Properties. Click on the Format tab to see file options. Here you can change the Sample rate, Bit-depth, and the Channels (Mono and Stereo). Just select Mono or Stereo, depending on which way you are converting, and click OK. When converting from mono to stereo, a box will pop up, asking you whether you want to convert to mono using only the left track, the right track, or to mix both tracks (standard). This can also be used to separate left and right tracks, to save them as separate mono files. Now use 'Save As...' to save the file with a new filename-for example, track1.mp3 can be saved as mono-left_only-track1.mp3.

Audition

To convert between mono and stereo, go to "Edit > Convert Sample Type...", or press [F11]. Here you can choose the Sample Rate, Channels (stereo or mono), and the Resolution (bit rate). Make the appropriate selections and then either save as a new file or just press OK to overwrite the existing file. When converting between mono

Jargon Buster

Flanger: A Flanger basically applies a variable delay in real time to sound, creating a swirling, windy effect. Blow out air from your mouth, and shape your lips the way you say "O". Continue to blow air and change the shape of your lips to the way you say "E". The change in the pitch of the sounds is similar to what the Flanger does.

Phaser: The Phaser effect is very similar to the Flanger effect, but instead of using just delay, it overlays an out of phase copy of a sound onto the same sound. This causes it to make a "swooshing" windy sound.

Wah-wah: If you make a constant sound with your

mouth, and then alternatively cover and uncover your mouth with your hand, you will get the effect of a Wah-wah. This effect, also known as the cry-baby effect, is reproduced electronically by increasing and decreasing the harmonics of a sound.

Harmonics: Multiples of a given wave's frequency. For example, a 100 Hz sound will have 200 Hz, 400 Hz, 600 Hz, etc., as even harmonics, and 300 Hz, 500 Hz, 700 Hz, etc. as odd harmonics.

Pitch: The basic frequency of a sound. Higher and Lower pitches are associated with treble and bass respectively.

Pitch-shifter: An effect that

increases or decreases the pitch of a sound in harmonic steps.

Tempo: Measured in beats per minute, it symbolises the speed of a song.

Crossover: A crossover is a frequency filter that filters high, low and mid range frequencies and sends them to the tweeters, woofers and mid speakers respectively.

Tweeters: Generally a small cone that outputs sound of the highest frequencies.

Woofers: Dynamic cone speakers that output bass (low frequency) sounds.

Subwoofer: This is a device that plays sounds of 120 Hz and less. It produces bass with 'punch', especially at high volumes.

Bet You Didn't Know

DirectX Effects

Sony Sound Forge registers its effects with DirectX. Adobe Audition can import these plugins if you have both Audition and Sound Forge installed. In Audition, go to "Effects > Enable DirectX Effects". This will import all effects registered with DirectX. Now you can apply all of Sound Forge's effects in Adobe Audition itself!

and stereo, it is advisable to keep a copy of the original recording, so always use the 'Save As...' option.

Recording

The easiest way to record your tracks is to connect the instrument or external device to the Line-in or Microphone port of your computer. This way you can record directly into the software, instead of using a second software, and then importing into your editing software. Recording directly will prevent any loss in quality, and speed up the editing process.

Sound Forge

In Sound Forge, just click on the record button to get the recording pop up box. Here you can select the source (Sound card) and record from the Line-in.

Audition

In Audition, you can monitor the recording level, and select which input you want to record from. Press [F10] to see the input levels for the

currently selected source, and then go to "Options > Windows Recording Mixer...". The default Windows Recording Control box will pop up, where you can select the input device and its volume level. To record, just click on the red Record button on the bottom left.

Synching With Video

As an added feature, you can synchronise an audio track with a video file. This will let you create better presentations or videos, as each visual event can be synched with an audio event. In order to do so, you need to be able to view the audio and video frames simultaneously while you edit. Both software allow you to do this.

Sound Forge

Go to "File > New", and create a blank file. Insert a silence that is equal to the length of the video file—a little more in fact, so long as you remember to remove the additional blank space at the end later. Now right-click and select Properties, and click on the Video tab. Click on attach, and select the video file you want to attach.

On the top bar you will see the video displayed in frames. In order to accurately edit the video frame by frame, you will need to zoom in to the wave form you are editing or creating. Now you can begin creating and editing your audio track to fit your video. When you save your video, however, make sure you have disk space. Because Sound Forge is not a

Bonus Tip

Multi-track View

Adobe Audition's multi-track view is ideal for editing and mixing tracks in a sort of preview stage. Once you are satisfied with your mix, you can output a single file.

video editing tool, it expands compressed video files, and does not recompress them when it saves. Our test 10 MB .MOV file was saved as a 640 MB file after editing!

Audition

In Audition, you can use the Multi-track view to edit a video file's audio track. Audition is much more powerful in these terms than Sound Forge. Using the Multi-track view you can just add effects and sounds to different tracks to create a much better soundtrack. You can also enhance existing soundtracks easily.

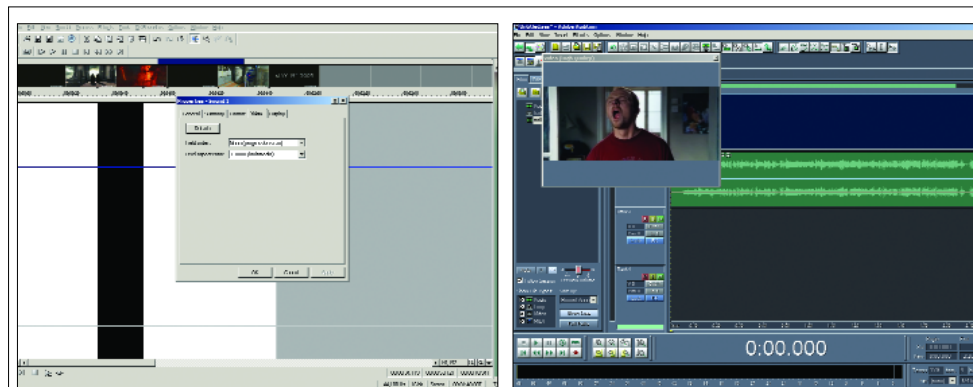
To open a video file, just switch to the Multi-track view and right click in Track 1. Go to "Insert > Video". Select the video file from the dialog box and click OK. Audition will import both the audio and the video from the file as two separate tracks. Now you can edit the audio freely, and watch the video in real time playing along with your edited audio.

If you don't see a video preview box when playing the file to test it, go to "Window > Video". You can only save the edited audio back to AVI video files. ☐

Bonus Tip

Noise Reduction

There is often a hiss in the background of tracks recorded by microphones that are not shielded. This can sound terrible at high volumes, especially when you use a crossover. Using Adobe Audition, you can remove this hiss easily. Just go to "Effects > Noise reduction > Noise reduction...". Select the level of Noise reduction you want, preview the sound, and when you are satisfied, click OK.



Attach a video file to an audio file to edit your audio according to the video—frame by frame

A different OUTLOOK

We take you beyond the Send/Receive button. Make Microsoft Outlook work for you

Ahmed Shaikh

E-mail clients are available by the dozen. Half of them are free to use. What makes Microsoft Outlook a favoured choice? Outlook is more than an e-mail client: it is a personal information manager; it is a tool for collaboration; it is a task master. Deeply tied to the other Microsoft Office modules such as Word, Excel and even Messenger, Outlook delivers a comprehensive and single package for working smart. Let's take a look at how Outlook can do more than Send/Receive. Note that all the following is only valid for Microsoft Outlook 2000 and above.

Sum Of The Parts

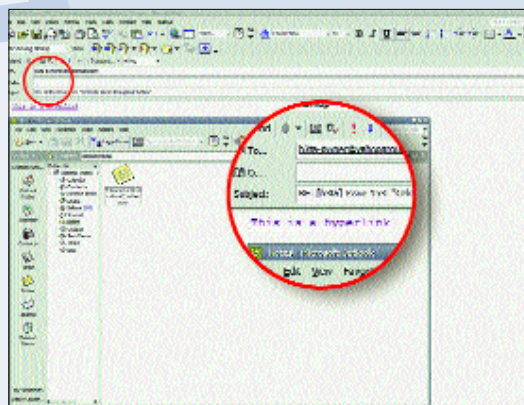
Outlook consists of six interconnected modules. It oversees your e-mail; tracks your meetings and appointments via a calendar; has a database of your contacts; maintains a list of all your assigned, pending and completed tasks; automates a journal that tracks your e-mails and other documents; and, finally, lets you take ad-hoc "sticky" notes. These modules form the heart of Outlook. More importantly, these are interdependent and interconnected. For

To link to this module	Use this code
Inbox	outlook:inbox
Contacts	outlook:contacts
Calendar	outlook:calendar
Notes	outlook:notes
A mailbox folder	outlook:foldername\subfolder
A specific message in your mail folder	outlook:inbox/~subject of message
A specific contact in your Contacts folder	outlook:contacts/~name of contact

example, dragging the content of an e-mail from the inbox to the Notes shortcut on the Outlook Bar will create a new note with the dragged text.

This brings us to an interesting way of cross-referencing each of these modules within an e-mail. An HTML mail may contain hyperlinks; you can tell Outlook to jump between modules by using the codes alongside as hyperlinks inside a mail.

This is especially useful if you



Upon clicking this hyperlink, Outlook will take the reader of the e-mail to the Notes folder

share contacts or the calendar with co-workers and friends: as an example, you can link to a shared e-mail as a means of reference. To hyperlink a text, make sure you are creating an HTML mail first, then right-click on the text to be hyperlinked and use the codes alongside within the "Address" field.

Dial D For Delegate

You can assign a task to your co-worker. An assigned task is e-mailed to the person(s) you have delegated it to. To assign a task, right-click on a task and select "Assign Task," type an e-mail id in the "To" field, or click the

"To" button and choose a name from your contacts list. To track the progress of the task, tick the box marked "Keep an updated copy of this task on my Task List." Any changes the recipient makes to the task as it progresses will appear in your Task List.

If you'd like to be notified when a project is complete, tick the box marked "Send me a status report when this task is complete." You can also add any comments you'd like to in the window at the bottom of the dialog box.

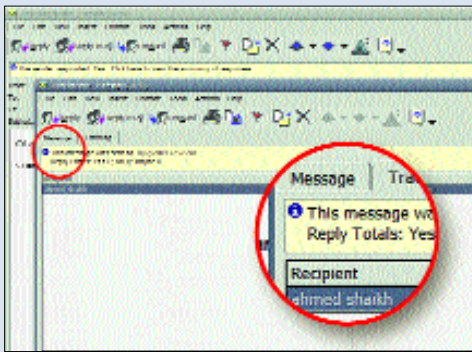
Mail En Masse

It is a good idea to file a contact under a category. For example, everyone from the online team of your organisation can go under, well, "Online Team." This way it becomes easier to send a mass mail to everyone within the online team: in the Contacts module, select **View > Current View > By Category** from the menu bar. Now select a category ("Online Team," in our example) and drag it to the Inbox icon on the Outlook Bar. Outlook will generate an empty e-mail message and fill the "To" field with the e-mail addresses of all the contacts in that category.

Vote For Outlook

When you are not sure about how to take a task further, do what the pros do: vote on it!

When creating a new e-mail, click the Options button. Select the "Use voting buttons" checkbox, and select the voting button names you want to use in the box. These buttons will appear at the top of the mail you will send. To create custom buttons, type in any text you want, making sure to separate



You can create votes within Outlook. The software will tally and track responses automatically

options by semicolons. The "Save sent message to" checkbox allows you to specify the folder where you want the sent message saved—"Sent Items" by default. In the "Have replies sent to" box, select the recipient or the folder where you want replies sent to. Outlook will automatically total the votes for you and tell you who voted for which option and the time they did so.

Meeting Time, Internet Time

If you have Directory service running on your organisation server, Outlook can create meeting requests that are not tied to a particular location. A NetMeeting can take place anytime, anywhere.

Microsoft Outlook also includes the ability to have the reminder for the meeting automatically start NetMeeting. You can also launch a particular document as soon as the meeting commences, such that every virtual attendee knows the agenda.

The document can be anything that supports collaboration within Microsoft Office—Microsoft Word, for example. Press [Ctrl] + [Shift] + [Q] to create a new online meeting request, and click on the "This is an online meeting using" checkbox.



A NetMeeting can happen irrespective of physical boundaries

Follow Up With That Contact

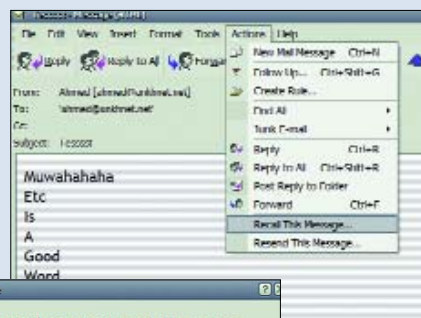
You would like to follow-up on an important e-mail, but the dozen spam messages surrounding it are begging to be deleted first.

What do you do to ensure that you do not forget the important task of getting back to your contact? Create a follow-up: right-click on a message in your Inbox, and click on "Follow Up."

In the dialog box that appears, specify a date and time for Outlook to remind you about this flagged contact. Delete that spam in peace!

Recall That Message

Did you mail something you would rather not have? Outlook allows you to recall or replace a



A sent message can be recalled or replaced within set conditions

message. It is important to know that you can only recall or replace messages you sent to recipients who are logged on and using Outlook and who have not read the message or moved the message out of their Inbox.

Open the message you want to recall or replace—these are found under "Sent Items." On the Tools or Actions menu (depending on your version of Outlook), click "Recall This Message."

To recall the message, click "Delete unread copies of this message." To replace the message with a different one, click "Delete unread copies and replace with a new message," click OK, and then type in a new message.

To receive a notification about the success of the recall or replacement for each recipient, select the "Tell me if recall succeeds or fails for each recipient" checkbox. To replace a message, you must send a new

one, failing which the original message is just recalled.

Drag And Drop

Outlook lets you automatically create new items and add shortcuts and links to items by drag-and-drop action.

For example: drag a Contact to the Calendar folder to create an appointment with that person, or drag an e-mail message to the Tasks folder to create a task based on that message.

For additional options, drag and drop an item with the right mouse button depressed. You'll find you can create attachments, and add the contents as text.

Track Your Contact's Activities

Within Outlook, every contact has an associated activity tab. This tab tracks all your interactions with the contact as per e-mail messages, appointments, assigned tasks, documents, and phone call journal entries. This view on your history with the contact is a one-stop for gauging dynamics between a contact and activities. For this reason alone, it is a good idea to add your colleagues and friends as contacts within the Outlook Bar—right-click on their e-mail id to do this. The Activities tab on the Contact item allows you to view, group, sort, and filter the set of associated items.

Sort It Out

You can sort e-mail and tasks by clicking on the column heading. When you click on a column heading, an arrow shows you that the listing is sorted by that column and in which direction: if the arrow points up, the list is sorted in ascending order; if it points down the list is in descending order.

Moreover, you can sort based on more than one column. To do this, click the first column that you want to sort the list on. Click a second time if you want to reverse the sort order. Then hold down the [Shift] key and click the column you want to use to break any ties that occur in the first sorted column. To reverse the order of the second sort column, continue to hold down [Shift] and click the second column again.

If you don't like the order in which the columns appear in the Tasks or Inbox folder, you can

easily move the columns around: just position the mouse pointer over a column heading, then drag it to the right or left until red arrows show where the column heading will be dropped when you release the button.

A Serial Task (“see you next Wednesday”)

When you create or assign a task, it can have a recurrence property. A recurring task repeats itself after a set period. For example, if you create a project completion task to start on December 1 and ask Outlook to recur the task every one week—the project notification will pop up on the 1st, and will recur on the 8th, 15th, 22nd, etc. of December. This happens regardless of whether the task has been completed. This is a recurring task.

Take, now, a task that needs to recur, but only after a previous task has been completed. Sticking with our project example just discussed, let’s assume you wish to check the status of the completed project. This will require that the project is finished first. If you wish to do this once, the solution is simple, but to do this on a regular basis, you need to create a regenerating task. Regenerating tasks are

Name	Recurrence	Due Date	Status
Task 1	Recurring	10/1/2004	Not Started
Task 2	Recurring	10/8/2004	Not Started
Task 3	Recurring	10/15/2004	Not Started
Task 4	Recurring	10/22/2004	Not Started
Task 5	Recurring	10/29/2004	Not Started
Task 6	Recurring	11/5/2004	Not Started
Task 7	Recurring	11/12/2004	Not Started
Task 8	Recurring	11/19/2004	Not Started
Task 9	Recurring	11/26/2004	Not Started
Task 10	Recurring	12/3/2004	Not Started

Outlook allows you to sort by columns and rearrange columns as you see fit



handy for activities that recur often, but not in a regular pattern—such as checking the status of a project.

A Regenerating Task recurs only after the previous instance is marked complete. For example, if you create a task that regenerates every 10 days, then the second instance appears 10



A regenerating task recurs after another task has been completed first

days after the first instance is marked complete. Thus, if a project is marked complete on the 20th of December, the second instance appears on the 30th of December.

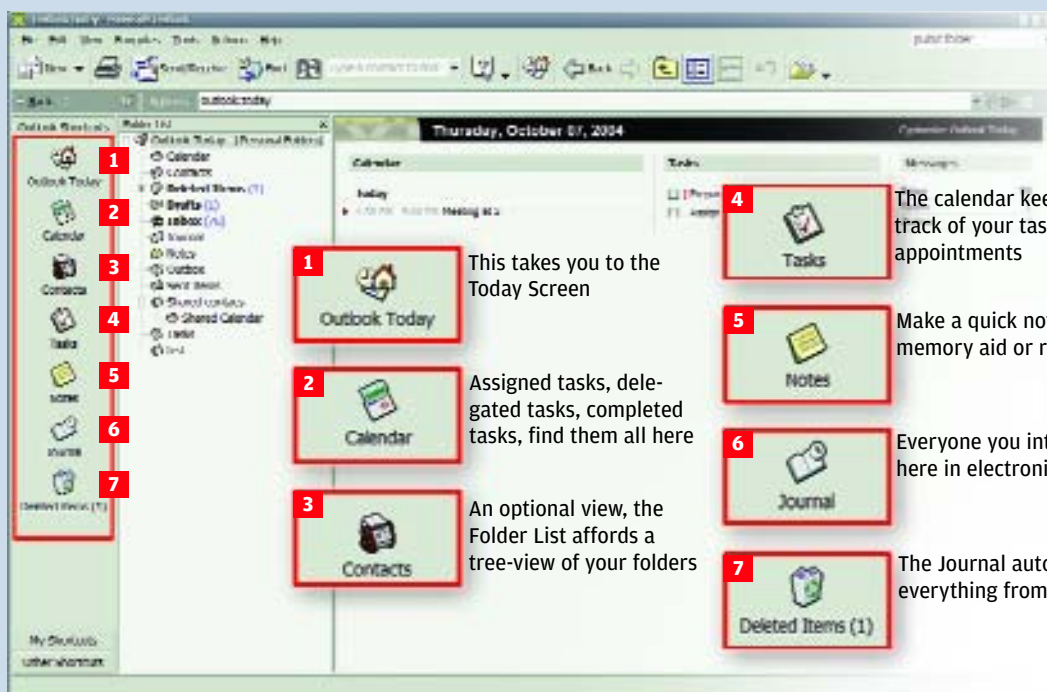
Collaborate, Share

With Microsoft Outlook and Exchange Server you can share resources. Using Exchange Public Folders, users can share tasks, contacts or calendars with others. In Outlook, click on File > New, then “Folder”; to create a group contact database, select Contacts in the “Folder contains” box, etc. After creating the new folder, right-click on it and select “Send Link to This Folder” to mail a shortcut to other members on your team so they can place their information in this now-shared folder. You can also carry the shared folder with you when you are working on a laptop and are not connected to your network.

Create Personal Distribution Lists

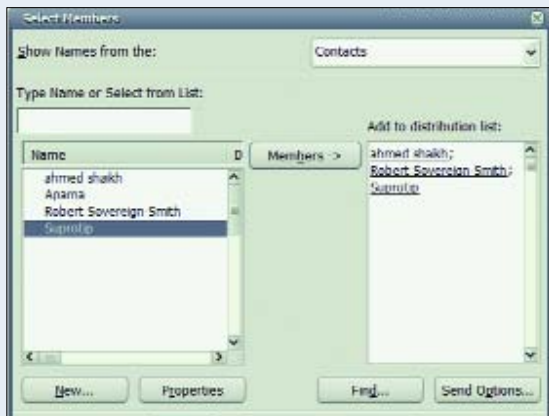
You can create a personal distribution list from within the Contacts folder. A Distribution List can contain contacts from your personal Contacts folder(s), from shared Contacts folders on an Exchange Server and from the

A look at Outlook



- 1 This takes you to the Today Screen
- 2 Assigned tasks, delegated tasks, completed tasks, find them all here
- 3 An optional view, the Folder List affords a tree-view of your folders

- 4 The calendar keeps a timeline track of your tasks and appointments
- 5 Make a quick note of that e-mail as a memory aid or reference
- 6 Everyone you interact with, resides here in electronic form
- 7 The Journal automatically tracks everything from e-mails to voice-calls



A personal distribution list can be synchronised between computers, e-mailed or printed

Exchange Server Global Address List. A Distribution List can also be easily forwarded to other users via e-mail, synchronised to other computers and printed.

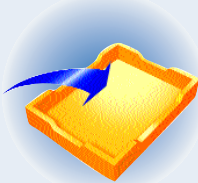
To create such a list, do the following:

- 1 Select **File**, then **New**, then "Distribution list," to show the distribution list item (The shortcut key is [Ctrl] + [Shift] + [L])
- 2 Add whom you want in the distribution list, name the distribution list, and save it
- 3 Open a new e-mail and type the distribution list name. You're ready to send

Adding New Contacts Easily

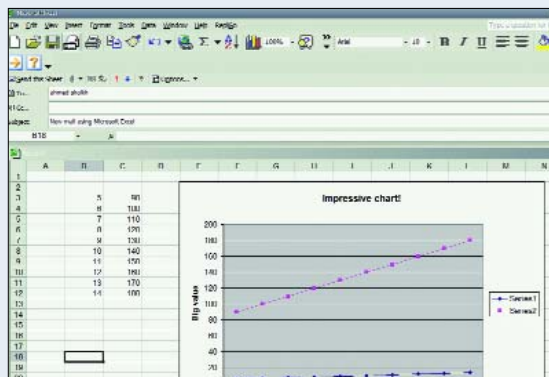
To add a friend or colleague to your Contacts folder:

- 1 Drag the message to your Contacts folder
 - 2 Save the new contact;
- OR
- 1 In the mail item, right-click on the sender's name in the "From" field
 - 2 Select **Add to Contacts**



Mail Via Excel

Outlook allows you to choose



As you can see here, you're not limited to creating a new e-mail using Word. This Excel table will be mailed as an HTML file

between MS Word, plain text or rich text for your e-mail writing. In addition to this, Outlook allows you to use any other Office component on a per-message basis to compose your e-mail message.

You can compose using, say, Microsoft Excel. The mail is then sent using HTML such that the recipient does not need MS Office installed to view the message.

To do this, click on **Actions > New Mail Message Using > Microsoft Office**.

Creating Rules For Shared Resources

To administer a shared folder—for generating auto-replies or to automatically reject a contribution based on preset criteria—the Folder Assistant steps in.

The Folder Assistant makes it easy to add rules to folders without any programming. Right-click on a shared folder and select **Properties**, click on the "Administration" tab and click on the "Folder Assistant" button.

Here you can specify rules as you see fit: limit size of messages, check for specific words in a message subject, an auto-reply upon submission, and check specific properties of documents copied into the folder, such as the author property of a Microsoft Word document.

Share Your Contacts

To forward a contact to another Outlook user, right-click on the contact and choose "Forward"; Outlook puts the contact item into an e-mail message. The recipient can now drag the contact from the mail message over the Contact icon on the Outlook bar.

Tracking It Via The Journal

Outlook's Journal keeps track of all your activities within Microsoft Office modules, letting you see when you last updated a certain Word or Excel file or sent an e-mail message, for example. The Journal also records all outbound calls made with Outlook's automatic dialling feature; it includes information on whom you called, when, and for how long. Turn on Journaling to enable this feature: click on the Journal icon within the Outlook Bar. ■

ahmed_shaikh@thinkdigit.com

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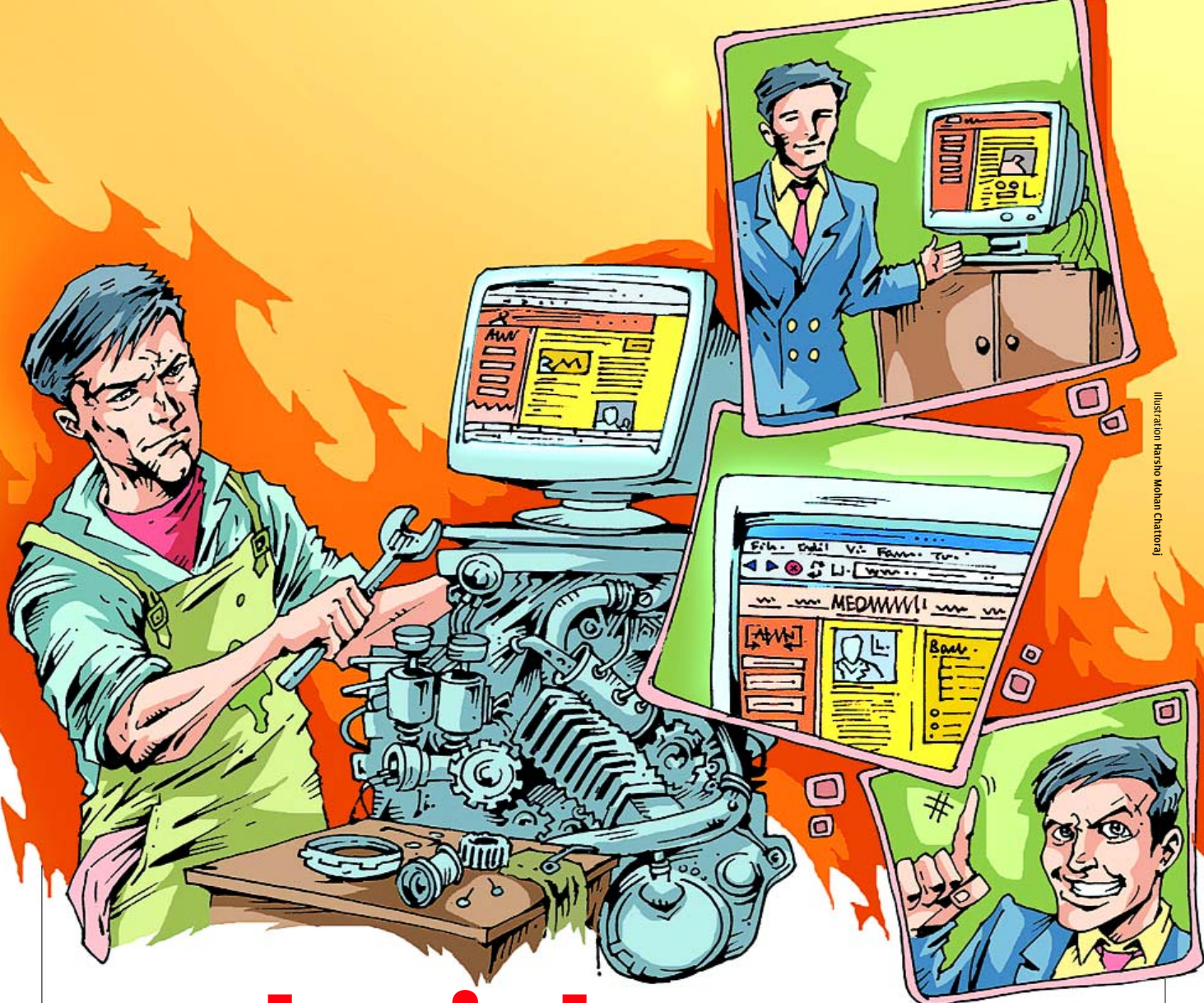


Illustration Harsho Mohan Chaturaj

Web Sights

It's not enough to just make a professional Web site... you need to get search engines to notice it

Robert Sovereign-Smith

At last estimate, there were over 40 million (that's four crore) registered domains. You need to keep in mind that this is just the number of TLDs (Top Level Domains) that have been registered, not the number of Web pages there are on the Internet. A simple experiment: search Google for the word "the", and you get over 6 billion results—and none from the "Deep Web," or what search engines don't scour.

These numbers can make you feel really, really small. And you thought of setting up a Web site, for personal or professional reasons, hoping to find some

business online, or just to let the world know you exist! So what's so special about you and your site? For one, you're armed with a copy of *Digit*!

As a follow up to the article in *Digit's* November 2004 issue, titled "www.mybusiness.com", on page 84—which dealt with how to buy a domain, set the DNS forwarding and cloaking options to make your site look professionally hosted—this article will focus more on how you can create a professional Web site, and then get search engines to sit up and take notice.

The Bundled Builder

Not everyone can afford Web site-building software such as Macromedia Dreamweaver, but a

lot of people have Microsoft Office. The beauty of MS Office is that it comes with Microsoft Frontpage—an easy-to-use Web site builder.

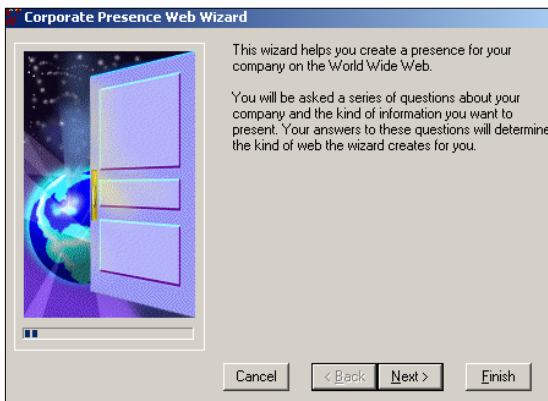
If you have Microsoft Office installed, you will find Frontpage by going to **Start > Programs > Microsoft Frontpage**. If you don't have Microsoft Office installed, you can purchase it from <http://www.microsoft.com/india/office/default.aspx>.

When Frontpage is installed, it will create a folder called "My Webs" in your "My Documents" folder, where all Web sites you create will be stored. Go to **File > New > Page or Web...**, and you will see a panel on the right that asks you what you want to build. Click on "Web Site Templates..."

to build a site from the templates that Frontpage offers, or choose “Page Templates...” to build a single page from the templates. If you are familiar with HTML or Frontpage, you can also choose the “Blank Page” option to build a page or site from scratch.

Your Organisation Online

Let's say you want to create your company's presence online. Click **File > New > Page or Web...**, and



Choose Corporate Presentation to build your company's Web site easily with the help of a wizard

choose the “Web Site Templates...” option. A box pops up, informing you of the currently available templates.

Choose “Corporate Presence Wizard”, which is the easiest way to build a company Web site. The Frontpage wizard will now ask you a series of questions.

You can choose what pages your Web site will contain—What's New, Products/Services, Table of Contents, etc. Then you get to choose topics that will appear on your home page, such as an Introduction, a Mission Statement, your Company Profile, etc.

Next, you choose whether you want pages to display Press Releases, Articles and Reviews, etc. Now when you click “Next,” you get to choose what is displayed on the top of each page, such as your company logo, the page title, a link bar, etc.

Next, you can set Frontpage to use its default “Under Construction” icon for unfinished pages, so that people don't hit dead links in case you forgot to create a page.

Now all that's left is to fill in your company details, choose a colour scheme and button images (called a “Web Theme” in Frontpage), and then click “Finish.”

A new folder will be created in “My Documents\My Webs” called “My Web”. This folder will contain the Web site you are currently designing. Depending on what pages you chose to include in your site when using the Wizard, you will find a few .html or .htm files in this folder. You need to edit these according to your needs.

The beauty of Frontpage is its sheer simplicity, and this is evident when you open an unedited page. You are instructed through everything from adding your Web site's logo, to adding contact information.

Frontpage advises, “Tell readers how to get in touch with you. Remember that people can connect to your web from anywhere in the world, so provide international versions of telephone and fax numbers. It's also customary to provide e-mail addresses for key contact points, such as sales and customer support.”

Every detail is explained similarly, and all you need to do is double-click on text or images to edit them. Just go through the pages one by one, adding images, text and various details that Frontpage puts dummy text or images for.

Keep It Simple

People often get carried away and try and pack too much into their Web sites. Your goal should be to inform people about your company, what you do, and how they can contact you. Anything more will be wasted, and will clutter your page.

As a rule of thumb, remember that people have short atten-

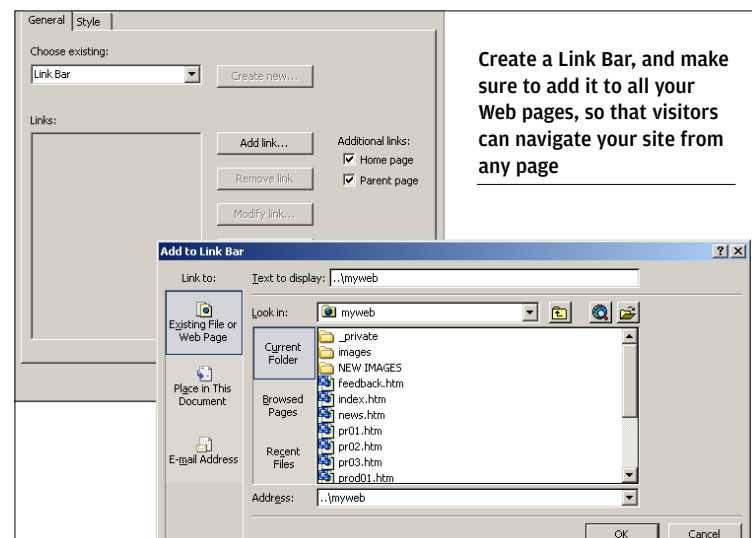
tion spans these days, and this becomes even shorter when they are surfing. Long paragraphs of text that describe your products and the various stages of ideation your company went through, etc., are a sure-fire way of losing a visitor's interest.

Get to the point. Make sure everything you're trying to highlight is visible straight up—if you're trying to sell a product, make sure its picture and a brief explanation show right in the centre of the window.

Keep the text simple, and use numbers in text—writing four thousand three hundred and seventy five instead of 4,375 is a big thumbs-down. Also, break the paragraphs up with sub-headlines, and use bulleted lists and a single column format to improve readability.

Make sure that all pages you create have the same link bar, so as to prevent visitors from getting lost. In Frontpage, you can choose to create a link bar by going to **Insert > Navigation**. A box will pop up. Choose “Link Bars” and click “Next.” Now choose the page theme, click “Next” and choose the orientation of the link bar—horizontal or vertical. Click “Finish,” and then add the pages you want to on the link bar. Remember, not every page on your Web site needs to be mentioned here—just the most important pages. You can always link to lower-level pages from within other pages.

Though you can insert backgrounds and background sounds, this will only increase the time it takes to load the pages. If you absolutely must have a textured



I hate Web sites that...

We asked people in Digit what they hated most about some Web sites. This is a list of definite no-no's when designing your Web site.

"...have Flash interfaces. When I see a flash site loading, quick as a flash, I click on the little X on the top right."
Ahmed Shaikh, Senior Writer

"...have ads that come in from a slow server, so the entire page gets held up just for an ad or two."
Ram Mohan Rao, Copy Editor

"...are badly designed, are difficult to navigate, or ones that sport loud, garish colours"
Meera Vankipuram, Writer

"...have a million pop ups, pop downs, pop unders, pop anything. Pop ups make me pop my cork!"
Garfield D'Souza, Copy Editor

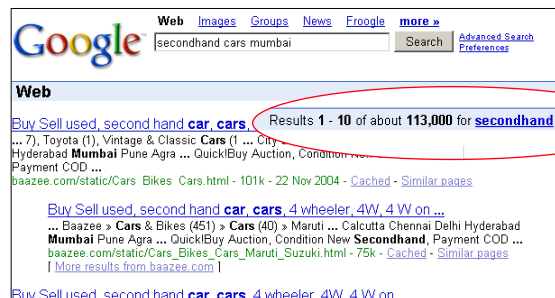
background, use the same background for all pages—this will ensure that the background image needs to be downloaded only once. Avoid animated images like the plague, because if you go too far, you might end up with a site like www.seizurer-obots.com, and no one wants to see that sort of thing.

Once you have created your Web site, you should check and re-check all links, spellings and images thoroughly. Nothing makes a site look more unprofessional than a link that leads nowhere, images that don't load, or spelling mistakes in the text.

Searching For Salvation

There are millions of Web sites out there which could be useful to us, but just haven't been discovered by search engines yet. The problem with most of these sites is that they are not designed with search engines in mind.

These sites fall into a category called the "Deep Web," and if you are setting up a business site,



If, for example, you are a second-hand car dealer in Mumbai, your Web site is competing with 1,13,000 other pages. So start optimising that site now!

this is one category you want to steer clear of.

The biggest mistake people make when checking their rankings on a search engine is searching for the domain name. For example, if you go to Google and search for "thinkdigit" or "thinkdigit.com", the first search result is www.thinkdigit.com. This is pretty much akin to walking into your home and asking your mother where you live!

By entering your domain name in the search field, you are giving the search engine no other option but to find you. We don't want a search engine to find us in a group of one; we want it to pick us out from billions of other pages.

As an exercise, enter, into Google, the product or service that your company provides. Let's say you manufacture and sell painted pottery. A search for "painted pottery" in Google throws up more than 12 lakh results.

Let's say your site manages to get listed somewhere in the middle of all these pages—a potential customer would have to search through 60,000 pages of results in order to find you.

Interestingly, you should also know that an estimated 90 per cent of Internet searches end on the first search result page—either the searcher finds what he is looking for, or he refines or changes his search.

Admittedly, our example search term, "painted pottery," seems a little too generic. Let's try "poetry painted on pottery in Patna"! Now this search term sounds like a tongue twister, and will probably throw up nothing, right? Wrong! As this article was being written, Google threw up 57 results, and the first 10 results are from 10 different sites—there could be more, but a searcher never goes past the first results page, remember?

Now imagine you are a second-hand car dealer in Mumbai! What chance do you have against the thousands of pages that search engines will throw at surfers when they search for "second-hand cars in Mumbai"?

What's In A Name?

The most basic way to optimise your site is to make proper use of HTML tags. In order to view a page's HTML source in

Frontpage, all you need to do is look for a little tab called "HTML" at the bottom left of the page that you are editing. In order for your site to ascend in the search rankings, all your tags need to work together and contain the same keywords. Choose your keywords very, very carefully.

Think about your company, what products you offer, and what the most basic and generic description you can come up with is. What you sell and where you are located is a good bet. So, "second-hand cars Mumbai" for a Mumbai-based dealer who buys and sells used cars would be the ideal set of keywords.

The first tag you need to edit is the "Title" tag. This is the tag that search engine spiders read first: it is the description that will show up on the top left of a browser's window, and also the text that search engines will display when they come across your site. Needless to say, this is the most important tag of all!

Whether or not you get a visitor to click on your site depends almost entirely on this title for each page. Think of it as a really, really short description of your company. Most search engines will display only a part of a long title tag, so make sure to keep it below 65 characters.

As a hypothetical test, let's imagine that you are from Mumbai, and want to buy a second-hand car. You are Net savvy, and obviously hit the search engines immediately. You search for "Second-hand cars Mumbai". The search engine throws up the following results:

"Welcome to Yoursite.com.

"Yoursite.com. Unbelievably priced second-hand cars"

"Second-hand cars in Mumbai; 15 years; 10 lakh satisfied customers"

Hosting Options

If you have purchased hosting, it's a good idea to know whether your server supports Frontpage extensions. If it does not, you are likely to get a feedback and search section that does not work. If you are using the free options, such as Geocities.com or Freewebs.com, you cannot use Frontpage extensions. You can always add a Google search to your Web site later—you will need Google, Yahoo!, etc., to index your site first.



Inside HTML

When you want to add or modify tags in Frontpage, you need to know what to look for. Here we show you exactly how each tag looks when you view a page in HTML.

The Title tag: <title> Secondhand cars in Mumbai; 15 years; 10 lakh satisfied customers </title>

The Meta Description tag: <META content="Mumbai Secondhand car Mart, the largest secondhand car dealer in Mumbai. With over 10 lakh satisfied customers all over Mumbai, Mumbai Secondhand Car Mart has proven to be Mumbai's most reliable secondhand car dealers. If you have a secondhand car to sell within Mumbai, give us a call at +91 - 22 - 2XXXXXXX. If you want to buy a secondhand car, just walk into our Mumbai showroom." name=description>

The Meta Keywords tag: <META content="secondhand, cars, Mumbai" name=keywords>

The Alt Tag:

The problem with the first is that there's no information provided—people do not need to be welcomed to your site. They have a need; if you appear to satisfy that need, they will enter your site. Unless your site is ranked first in the search results—which will not happen with a title such as “Welcome to yoursite.com”—no one will click on your link.

The second title is definitely an improvement over the first, but is still a little vague. It sounds too much like an advertisement, and by instinct the e-human will ignore online advertisements.

The third is better, and even that can be improved upon. Let's dissect the sentence: “Second-hand cars in Mumbai” will give a potential visitor the most important information—what you sell and where you are located. “15 years; 10 lakh satisfied customers” builds the image of a company with a reputation, a company which has a lot of customers.

All search engines will show the page titles in bold, the first paragraph of your Web site's text in normal text, and the URL of the site. Make sure you spend enough time ideating the titles of each of your pages.

Meta Tag Maestros

Now you get a chance to use Meta Tags. These are HTML tags that search engines read when indexing your site. In order to really rise up the search ranking ladder, you will need to fix upon the keywords you chose for your site.

The first tag you should add or change is the Meta Description tag. This tag describes your site, and should be as informative as possible. The keywords we are optimising our site for, in the above example, are “second-hand,” “cars,” and “Mumbai.” Your Meta Description tag should read like an introduction to your company, and also repeat your chosen keywords as much as possible.

A good Meta Description for the above example would be: “[Your company name], the largest second-hand car dealer in Mumbai. With over 10 lakh satisfied customers all over Mumbai, [your company] has proven to be Mumbai's most reliable second-hand car dealers. If you have a second-hand car to sell within Mumbai, give us a call at [phone number]. If you want to buy a second-hand car, just walk into our Mumbai showroom.” Though you can include the keywords as often as possible, you should ensure that the description makes sense and reads like one.

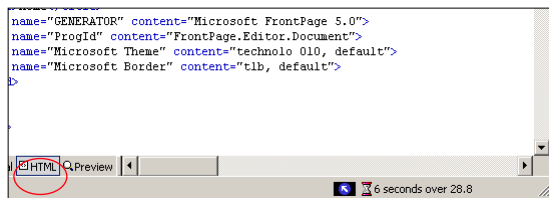
1/2 Ad

Next, you look at the Meta Keywords tag. At one time, all search engines would rank sites based on this tag alone. However, people have learned to exploit, or rather, abuse this tag to gain rankings. Today, this tag has little or no effect on your rankings, and most search engines ignore this tag. You should, however, enter your keywords into this tag anyway: a little optimism never hurt anyone!

The last tag, the Alt Tag, is the tag you add to your images. This pops up text as a tooltip when your mouse hovers over an image in a browser.

Try and insert your keywords into most of your Alt Tags, but make sure they make sense. Also, try not to go overboard with really long Alt Tags because some people still use non-graphical browsers to navigate, and will see your Alt Tags as text instead of as images—this will ruin the way your page looks when viewed in a non-graphical browser.

Before you scorn this minority, remember that all major search engine spiders—the very bots that rank our site—crawl the Net non-graphically.



Look for the HTML button on the bottom left of the page you are editing to see your Meta tags, and to change them

A Thousand Words

The second-most important search engine optimisation is the actual body text of your site. Make sure that the keywords you are optimising your site for are repeated as often as possible within the body text of your site. Don't just go about adding "second-hand", "cars" and "Mumbai" everywhere! Instead, write intelligently and work your keywords into the text so that it reads well, and most importantly, makes sense.

...A Little Help From My Friends

By far, the most important criterion for your site's ranking with any search engine is one you do not control. The majority of search engines give the highest



Get Proactive

After you are done creating and optimising your site, don't just sit around and wait for search engines to discover you. Instead, make them take notice by submitting your URL to them. Here are the major search engines around the world that people use. Once they have you on their database, pretty soon everyone else will too.

☐ All The Web / Yahoo!

<http://submit.search.yahoo.com/free/request>

☐ Google

<http://www.google.com/addurl.html>

☐ Inktomi

<http://submitit.bcentral.com/msnsubmit.htm>

☐ MSN

<http://submitit.bcentral.com/msnsubmit.htm>

☐ The Open Directory Project (DMOZ) / Ask Jeeves / Lycos

<http://dmoz.org/add.html>

importance to how many other sites link to your site. This seems to be the only fair way of ranking a Web site today—if it were left to just the tags and body text, we would find nothing but useless sites with every search we did.

The logic is simple. If you are as good as you say you are, others will acknowledge it, and inform people about your products and services. It is a good idea to start off by getting a friend or non-rival company to add a link to your site from theirs, as soon as your site is up. Of course, you should also repay the favour, and make sure to add links to their sites in return.

If the sites that link to you have already been indexed by search engines, the spiders or bots will soon be back to find changes in them. When the spiders return, they will find a link to your site, and will automatically pay your site a visit. You should make sure that the link from the other site contains your site's keywords. Sometimes, it may seem strange to have a link exchange with, say, a textile company. It would really look odd if your auto dealership linked to a textile site, and vice versa. You can overcome this by adding ghost links or hidden links to the other Web site.

In order to make a hidden link, just create a small picture that is the same colour as your background colour. Now, place this image at the very bottom of your page, and link it to whichever site you want. This link will not be visible, but search engine spiders will find it nonetheless. The reason you should always place it at the

bottom of your page is so that search engines do not show its Alt Tag when displaying your site in the results.

Justifying The Means

The more effort you put into optimising your Web site, the higher your rank will be. Link exchanges are always a good thing, though you should be wary of which sites you link to—even with hidden links. You do not want your reputable auto-dealership linking to a pornography Web site, for example. Your customers would not like to even accidentally click on a hidden link and be taken to a porn site when shopping online with the family for a new car.

In just a few days, you should be able to have a well-designed and well-optimised site up and running. Typically, it can take anywhere from a week to 3 months for your site to be found by search engines—depending mainly on which sites link to you. You should also submit your site to the top search engines manually—see box "Get Proactive" above.

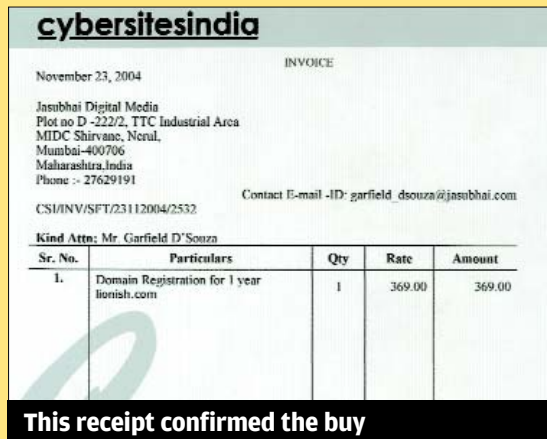
Once you are done, all that's left is to make sure your site is updated regularly, has no dead links and always has relevant content. Whether or not you actually make it to the top depends solely on the dedication you put into constantly optimising your site, and getting popular Web sites to link to you. All you need is the will, Microsoft Frontpage, and, of course, *Digit*, to do so. If you manage to reach rank number one on major search engines, send us a mail at editor@thinkdigit.com and share your experience. ☐

robert_smith@thinkdigit.com

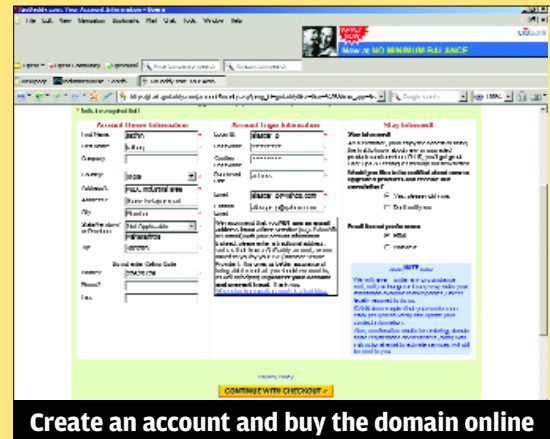
Buying Domain Names

We got Garfield from the editorial domain and Aliasgar from the test centre domain to well, buy a domain name. While the editorial individual opted to go the good ol' way, Aliasgar logged online even before we could say go!

Garfield D'Souza (garfield_dsouza@thinkdigit.com) , **Aliasgar Pardawala** (aliasgar_pardawala@thinkdigit.com)



This receipt confirmed the buy



Create an account and buy the domain online

1

Garfield decided on buying lionish.com and called up Cybersitesindia-the domain registration and hosting firm. The lady executive informed us that it would cost Rs 369 for a year. She then sent him an e-mail detailing the registration information she needed, to which he replied instantly. Time taken **Half a day**

Pecotools.com was the name chosen. Logging onto godaddy.com—the domain name registration Web site—a quick search said that it was available.

Time taken **5 minutes**

2

To speed up the process, he arranged to send the amount in cash by the company's courier. Unfortunately, the courier agent had finished his round for the day, which meant waiting for next morning.

Time taken **Half a day**

Ali then clicked on Custom Registration, selected the period of registration (1 year) and let the domain remain public. Here, the Internet connection died. It was not until an hour later that he went on the Step 3.

Time taken **1 hour 15 minutes**

3

By mid-afternoon, the courier guy had everything done. A neat envelope containing the receipt and warm wishes by Cybersitesindia lay on his desk.

Time taken **1 day**

He then created a Godaddy account, entered the necessary contact and billing details.

Time taken **10 minutes**

4

The transaction done, he received a Confirmation receipt screen, the details of which were also sent via e-mail.

Time taken **3 minutes**

Total Time Spent: **2 days**
Total cost: **Rs 369**



Total Time Spent: **1 hour 33 minutes**
Total cost: **\$8.70 (Rs)**



**AND
THE
WINNER
IS...**

Yes, the Tech way wins hands down. It's fast: even with the Internet connection dying halfway through, it just took about an hour and a half to buy the domain. However, buying offline sure is just as simple. If you

have a lot of time to spare, love sauntering around the office and just 'thought' of buying a domain, the Old Way is the laid-back way to go.

Q&A

Your Questions, Our Answers

Beeps While Booting

Q I have the following configuration: a P-4 2.4 GHz, an ASUS motherboard, 256 MB DDR RAM, a Seagate 40 GB HDD, and an ASUS CD-Writer. The PC emits a long beep the moment I press the power button on the cabinet. Later, when I switch it on again, the BIOS screen displays a mismatch of a certain frequency. What am I supposed to do?

Shokeen Sulabh

A A long beep indicates a malfunctioning memory module. To confirm whether this is indeed the problem, plug the module in another empty memory slot and boot the machine. If the problem persists then you will have to get the module replaced.

If it persists, remove the video card and reseal it. However, if you use onboard video, get the system serviced by tech support personnel.

Scanned Files Too Large

Q My employees scan documents into the JPG format via a flatbed HP Scanner. The size of each such .JPG file is around 400 to 700 KB. Hence, they are unable to attach 10 to 25 scanned documents at a time. How do you reduce their size?

Amar Chandra Gupta

A Scan the document at a lower resolution. For a Word document, a resolution of 100 dpi is sufficient enough. Scan images not meant for printing at 75 to 100 dpi. You can also select black or grayscale mode while scanning, instead of colour mode for a text file or a Word document.

Fatal Exceptions

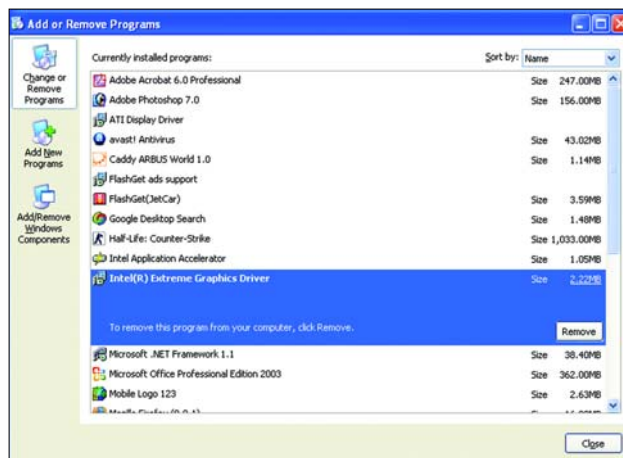
Q I have a Pentium III 1.3 GHz with 128 MB RAM, running Windows 98SE and Norton Anti Virus Professional Edition 2003. At times, as I power the system on, the PC displays the following error message on a blue screen:

'A Fatal Exception OE has occurred at 0028:C003633B in VXD/FSMGR [01] + 00002977. The current application will be terminated. Press any key to continue or press [Ctrl]+[Alt]+[Del] to restart computer.' On pressing any key, it either boots up or shuts down. What do I do?

Sanjay Raval

A A fatal exception occurs due to incompatible software, faulty RAM modules or corrupt files. To solve this, uninstall the software or driver, which you installed before the error message appeared. Also, visit Microsoft Knowledge Base (<http://support.microsoft.com/kb/315854/EN-US/>) for further information to resolve the error.

You can also use a troubleshooting utility called PC MightyMax(http://www.pcmightymax.net/demo/google57/PC_DocSet up.EXE) to pinpoint the problem causing the fatal exception.



You can remove recently loaded software from here

Burning Problems

Q I tried to burn the same data simultaneously onto two CD-Writers configured in master-and-slave mode. The system detected both the writers, but Nero did not. How do I rectify this?

Susanta Bag

A In the main window of Nero, click on Recorder in the menu bar. Next, click on 'Choose Recorder'. Here, you should see three recorders, one of which is the Image recorder. If the second recorder is crossed out in red or is not there at all, then you are using an OEM version, which only supports the writer it was bundled with. Purchase the retail version.

If you see both the writers without any signs, then go to File > New > ISO Compilation. Here, check the 'Use Multiple Recorders' option in the Burn tab and burn your compilation.

Overburning? No Luck

Q I tried overburning a Moser Baer CD using my Samsung CD-Writer 52x32x52x. I checked for this feature using the 'Choose Recorder' option in Nero 5.0. I then test-burned a CD using Nero's Tool Kit, which showed that it can be burned up to 100 minutes. I then increased the value of the red and yellow markers, and enabled overburning via the 'Expert' feature. I then began burning 750 MB of data in the DAO mode. However, an error message appeared indicating that there was not enough space to burn.

Shiv Kant

RAMming Into A Fraud?

Q I recently assembled a PC that comprises an Athlon 2600+ CPU, an Asus A7N8X-VM/400 motherboard and 512 MB of DDR 400 MHz RAM by Hynix. My system is configured to use the onboard graphics card.

Well, I powered the PC on and entered the BIOS. Here, the RAM module is stated to run at 333 MHz, which makes me wonder whether my vendor tricked me into buying faulty stuff. He tells me that it is 400 MHz and is indicated to be 333 MHz, owing to sharing. Yes, there are markings on the Hynix RAM module that indicate its



frequency to be 400 MHz. If so, why is the BIOS screen quoting only 333 MHz?

Lakshmi Narayanan K.

A The Asus A7N8X-VM/400 supports a DDR 400 module only if you install and use a separate video card. That is why the BIOS displays the RAM module to be running at 333 MHz. This is a limitation of the motherboard and has got nothing to do with the clock speeds of the memory chip.

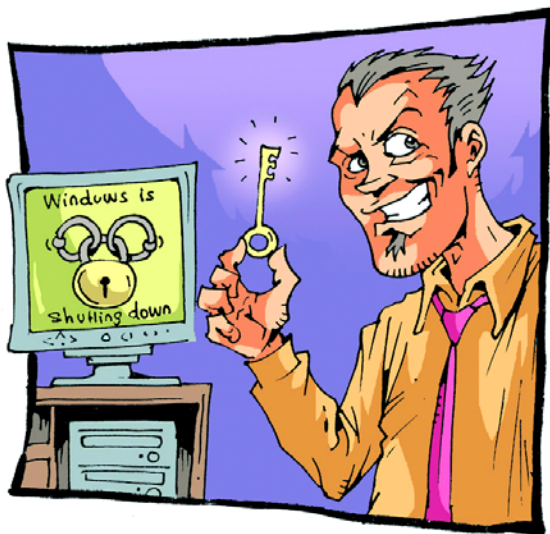
A The 'Choose Recorder' dialog box will only specify whether the drive supports overburning or not. To enable overburning, start Nero Burning ROM and go to File > Preferences. In this window, click on the 'Expert Features' tab and check the 'Enable overburn Disc-at-once burning' option. Click OK and then try overburning a disc.

Shuts Down And Is Infected

Q I have dual-booted my PC with Windows XP and Windows 98. The system does not turn off when working with Windows XP. The 'Shut down' command works fine in Windows 98 though. I repaired it using the repair console on the installation CD but to no avail. Help me fix this problem.

Also, when I connect to the Internet in Windows XP, I receive a message that says 'The system is going to shutdown due to a problem in remote control procedure'. Where do I get the security patch to fix this virus problem?

Sashi Prakash



Illustrations: Harsho Mohan Chatterjee

A Windows XP Service Pack 1 has a patch that addresses improper XP shutdowns. Visit <http://support.microsoft.com/?kbid=307274> for further information.

The virus you are referring to is the Sasser virus, which causes computers running

Windows XP or 2000 to restart every time they connect to the Internet. Download its patch from <http://securityresponse.symantec.com/avcenter/venc/data/w32.sasser.removal.tool.html>. Run this tool after booting into Safe Mode (Hit [Del] or [F8] as you power the system on). That done, download the WindowsXP-KB824146-x86-ENU.exe file from <http://www.microsoft.com/downloads/details.aspx?FamilyId=5F055AE-A1BA-4D4A-B424-95D32CFC8CBA&displaylang=en>.

Run this file and your issue will be resolved. If the problem persists, you will need to install Windows XP Service Pack 1.

Nero's Options

Q Nero gives me two options 'Quick-erase rewritable disc' and 'Full-erase rewritable disc' to erase a CD-RW. What is the difference between the two? Which one is more efficient?

Do I need to format the hard disk frequently? If not, how often do I need to do so?

How do I disable the Autorun feature of my CD-Writer in Windows XP Professional?

Devashish

A 'Quick erase rewritable disc' deletes the files from the CD so they can be recovered by recovery software, while 'Full-erase rewritable disc' formats the CD. As long as you don't keep your confidential data on your CD-RW a quick-erase is fine.

Opt for a format only as the last resort. Usually, you format a hard disk only after you have tried all the necessary PC troubleshooting steps required. If your system is running slow, defragment the hard drive and check it for errors. Use applications such as System Mechanic or Norton Cleansweep to clear any accumulated garbage files.

As for your last query, go to My Computer, right-click your CD-Writer drive, select Properties, go to the AutoPlay tab, choose 'Select an action to perform:' and for every content type, choose 'Take no action'. This will disable the Autorun feature.

TV-out Not Working

Q My Pentium 4 2.4 GHz system has onboard graphics as well as an nVidia chipset AGP



Set Up A R.A.I.D.

Sanket Naik

RAID (Redundant Array of Inexpensive Disk) is the best form of fault tolerance that enables swift data recovery after disasters such as hard drive crashes. You can also use RAID to boost system performance. There are five RAID architectures—RAID-1 to RAID-5—each offering different features and performance trade-offs. ‘Mirroring’ and ‘striping’ are two ways of implementing RAID. Mirroring offers data-redundancy while striping offers performance boost.

WAYS TO SETUP RAID

Implement RAID on your server via hardware or software. Software-based RAID is OS-dependent. A few OSes such as Windows 2000 Server support software RAID. No such dependencies plague hardware RAID and since this setup is isolated, it has its own dedicated controller and memory to work without much interference from the server’s CPU.

Hardware RAID Setup

Use a PCI RAID card to connect all the hard drives. Unlike software RAID, here the OS can reside on the RAID hard drives, since the RAID volume boots from the RAID card which occurs prior to the OS boot.

RAID cards are available from vendors such as LSI, Adaptec, etc. Depending on your RAID controller card, the interface for creating RAID volumes differs. However, the general idea is the same: first, boot into the adapter card’s BIOS by pressing the appropriate key and then create the required volumes on the drive. Next, save the settings, exit the BIOS, and load the OS on one of the volumes. For this workshop, we use the onboard RAID controller on the MSI 875PNEO motherboard.

Note: Provide the adapter card driver the moment you begin installing the OS on a RAID volume. Press [F6] when Windows 2000 starts up to install them. Insert the driver floppy when prompted to do so and follow the instructions thereof.

1 STEP Once the system boots, press [Ctrl]+[I]. (the key combination defers from card to card. Refer to the manual for the correct sequence) to boot into the RAID card BIOS.

2 STEP Select ‘Create RAID volume’ in the interface that comes up. Enter the name for the volume and press [Enter].



Access the RAID BIOS setup screen as soon as the system boots up

3 STEP Next, using the arrow keys, select the type of volume i.e. RAID 0 or RAID 1. Here, we select RAID 1 and press [Enter].

4 STEP Decide upon the amount of space you want to allocate to the volume, let’s say 20 GB, press [Enter] and confirm it with a ‘Y’.

5 STEP Create another volume (by repeating steps 2 to 4) if there is space left to do so. Once the volumes are created, exit the BIOS and restart the system.

6 STEP Now install the OS and the required drivers. After installation is complete, you will need to install the RAID management software that comes bundled with most cards.

Software RAID Setup

Use Windows 2000 Server editions to implement software RAID on your server. Linux distributions, such as SuSe, etc, also offer software RAID. Here, though we stick to the Windows platform.

1 STEP Once the hard drives are installed, initialize the new drives to dynamic drives. To convert your disk to a dynamic drive, right-click ‘My Computer’ and select ‘Manage’.

Note: System drives cannot be converted to dynamic disk.

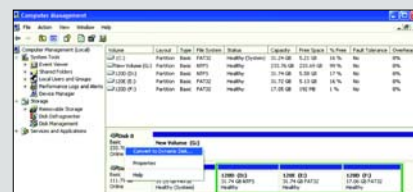
2 STEP In the ‘Computer Management’ console that opens, click on ‘Disk management’. The installed drives appear in the window pane to the right. Right-click on the new hard drives (not on the volumes) and click the option ‘Convert to dynamic disk’.

Glossary

Mirroring (RAID-1) In mirroring, the same data is written simultaneously to both the hard drives. During a hard drive crash, a copy of your data is always present on either of the drives, which can be later retrieved. Hence, mirroring provides data redundancy.

Striping (RAID-0) In striping, alternate chunks of data are written to the two hard drives, i.e. chunk 1 goes to drive A, chunk 2 goes to drive B and so on. Since each drive has its own controller, the overall writing and reading process is faster than what can be achieved using a single controller. Hence, use striping for higher data throughput, eg, file-servers, etc.

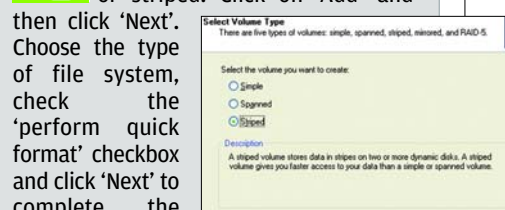
RAID-5 The RAID-5 configuration is an amalgamation of RAID-1 and RAID-0. RAID-5 requires 4 hard drives, one pair for striping and the other to mirror the data. Recent advancements have made it possible to have RAID-5 configuration on two drives.



Select the hard drive and convert them to dynamic disks

3 STEP Once the disks are converted to dynamic disks, select the empty volumes on the drives and then on ‘New volume’. In the New volume wizard, click ‘Next’. Depending on your preference, choose ‘Striped’ or ‘Mirrored’ volumes and click ‘Next’.

4 STEP In the next window, select the drive volumes to be mirrored or striped. Click on ‘Add’ and



then click ‘Next’. Choose the type of file system, check the ‘perform quick format’ checkbox and click ‘Next’ to complete the process. Upon completion, the RAID volume shows up with a different colour in the ‘Disk management’ console.

sanket_naik@thinkdigit.com

card, which offers monitor and TV output. The TV-out stopped working a few days back. The TV screen is blank, but we do get sound. I have Windows 98SE installed. I reinstalled the drivers for the AGP card but that did nothing. All the settings also seem proper. What could the problem be?

Bijay

A First, check the cables: If it is an S-video-to-RCA cable, connect it to your TV and AGP card, remove the monitor connection from the AGP card and power on your PC. If the TV comes alive, then the cable is fine. If you use a RF converter along with this cable, check its frequency; a mismatched frequency could be the problem.

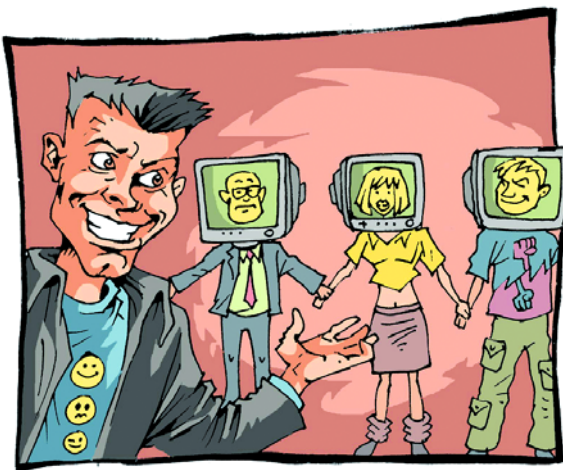
If the display still does not work, then right-click anywhere on your desktop and select Properties. Next, switch to the Settings tab and click on Advanced. Select the tab which has the name of your card, say, GeForce2 440 MX or so, go to the Troubleshooting tab and check the box labelled 'My connected TV does not appear in the list', click OK and then restart your PC. This should resolve your issue.

LAN With Mouse Problems

Q I have a P III 733MHz CPU, a Mercury 810eFST motherboard, running Windows XP and Windows 98 as well.

Recently, I purchased a 5-button Iball black cat optical mouse. At times, the mouse pointer automatically changes its position. The rubber mousepad is blue in colour and coated with plastic. Its sensors do seem fine. Please help.

My college has around 25 computers, running Windows 2000, networked via the LAN. Is there some software that will enable me to chat with my



friends when we are logged on to these systems? If so, where do I download it from?

Mariah Furtado

A The mouse maybe acting up due to a loose USB or PS2 connection. Check whether the connector is firmly inserted in the slot. If the pointer still moves erratically, then the mouse may have a mechanical fault.

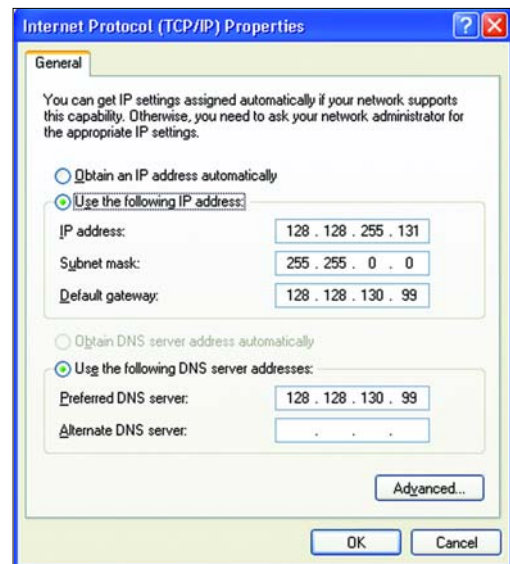
 sos@jasubhai.com

E-mail us your computing problems, and we may answer them here! Since we get more mails per day than we can handle, it may take some time for your query to be answered. Rest assured, we are listening!

Download and use Jabber (www.jabber.org)—an open-source IM client—to chat with your friends over the LAN. Run Jabber as the server on one of the machines and the rest can then join the chat session. Other simpler clients are LANMessage Pro (0.28 MB), Network Chat 1.30 (9.32 MB), Network Assistant 3.2 (1.29 MB), etc. Download them from www.softpedia.com.

PC Access Via The Internet

Q I have a P III 800 MHz and a Mercury LAN card running Windows 98SE. I cannot add my friend's computer in 'Network Neighbourhood'. We both use Iquara's broadband Internet connection. Is there any way I can add him via the Internet?



This is where you can obtain the IP address from

Also, the system never gets past the "Windows is shutting down" message when I shut it via the OS. It's been a long time since it said that "It's now safe to turn off your computer"! Help needed. Desperately!

Tejas Subramaniam

A Ping the IP address of your friend's computer. Click on Start > Run, type 'command' and click OK. At the command prompt, type ping 'XX.XX.XX.XX', (where XX.XX.XX.XX is your friend's IP address) and press [Enter].

If you receive a reply from his address, then you can access his computer. All he needs to do is share his folder or drive and you can do the same. If you cannot access your friend's computer in this manner, then use an FTP server such as BulletProof Server (www.bpfserver.com). If access is still not possible, then probably you are on a separate network and you will need to contact your ISP.

As for the improper shutdown in Windows 98, you will need to download and install its shutdown patch from http://www.microsoft.com/windows98/downloads/contents/WURecommended/S_WUFeatured/Win98SE/Default.asp. ☒

all the other drives defragment properly. I even tried to defragment in Safe Mode, and ran Scandisk, but couldn't find any bad sectors. What do I do?

Ganesh Magal

users\Desktop). On pressing Cancel, I get another error message, "Fatal error during installation". The Auto-protect feature doesn't work, and I can't scan for viruses manually.

Digital Tools | Ask Agent 001

Jeep Kumar Dixit

A You can solve this problem by clicking on the desktop, and in the window that opens, click on Options > Yes.

Here under 'Show all files' and 'Show hidden files and folders' and click 'Find Now' in the 'Name' box. Check the drive. Click 'Find Now' if it's found, and if not, you should click 'Find Now' again.

Calling queries

Q I use a dial-up connection to the Internet. How do I know when someone is using my phone while I'm online? Can I set it up so that my connection to disconnect automatically when I receive a phone call?

Nataraj Das

A There's nothing you can do in Windows to get your PC to prompt you about incoming calls. However, you might be able to accomplish this if you tweak your modem. You need to have call waiting enabled—get in touch with your telephone service provider for this. If you set ATm2 in the modem settings box, the modem speakers will ring and you'll get a hint that indicates an incoming call.

you will have to uninstall the software and reinstall it. To uninstall, click Start > All Programs > Microsoft Office > Microsoft Office Word 2003 and click 'Uninstall'. To reinstall, click Start > All Programs > Microsoft Office > Microsoft Office Word 2003 and click 'Install'. After the installation is complete, click Start > All Programs > Microsoft Office > Microsoft Office Word 2003 > Remove and then click 'Remove'. If this doesn't add the software, you may need to edit a registry key. To edit a registry key, click Start > Run and type 'regedit' and press Enter. In the registry editor, click 'HKEY_CURRENT_USER\Software\Microsoft\Office\10.0\Word\AutoSave' and press 'F5' to refresh the registry key. To delete the product ID keys, click 'HKEY_CURRENT_USER\Software\Microsoft\Office\10.0\Word\AutoSave' and click each ID and look for 'ProductID' in the right pane. On finding the 'ProductID' key, delete it and exit the registry editor. You can now reinstall Norton.

the product ID keys. To delete the product ID keys, click each ID and look for 'ProductID' in the right pane. On finding the 'ProductID' key, delete it and exit the registry editor. You can now reinstall Norton.

A message from Nero

Q I have a Pentium 4 1.7 GHz on an 845 motherboard, a 40 GB Seagate Barracuda hard drive, a 1 GB RAM, and an LG 48X/16X/48X CD-RW, with Windows XP and Windows XP as my operating system. Recently, when I ran Nero 5.5.8.7, my PC hung and gave a message: "Nero 5.5.8.7 has stopped working. Please close the program and restart your computer."

A blackout sparks off Agent 001's search for the ideal UPS

UPS And Downs

Living on the outskirts of Mumbai, life's been smooth except for the sudden blackouts, which are an everyday nuisance. To make matters worse, a repeater transformer is located nearby making voltage spikes quite common.

I had relied solely on my spike-buster strip, until one fateful day. The useless thing gave way, blowing up my new Asus A7N8X motherboard and the Transcend memory modules as well.

Of course, both were covered under a warranty period and promptly replaced. But I had no intention of putting them back on; not with a useless spike-strip around. Obviously, I needed a UPS. Post a round of arguments with the Test Centre dudes, I had a clear idea of the type of UPS to look for - a 500 VA with a minimum of three power outlets and a backup time of at least 10 minutes.

Rather than go all the way to (yes, you guessed it) Lamington Road, I thought of trying my luck closer home in the shopping plazas at Vashi, Navi Mumbai. Here, the lowest price quoted was Rs. 2,000 for some local UPS brand, which went up to Rs. 3,200 for the good ones - but no one seemed happy selling these. Their general lack of interest put me off. No luck here, Lamington Road I had to go.

The dude in the first shop offered two choices - an Intex and a Powersafe priced at Rs 1,600 and Rs 2,200 respectively. Umm, *inme AVR hai kya?* Blank stares answered my question. Evidently, they had not heard of Automatic Voltage Regulation—a feature that reduces the possibility of burnouts and brownouts.

I moved out then, and into a shop off the

queerly named *Chunam Lane*. It was less of a shop and more of a swanky store, whose shelves showed off good quality hardware. And the guy behind the desk knew his wares. He offered me APC's Back UPS ES and explained all their features (AVR included). I was interested. The price though was a scalding Rs 2,850—expensive as compared to UPS solutions by Intex. *Aisa kyon?* pat came the well-rehearsed reply, "*quality mangta hai to paisa dena padega, aap samajdar hein isliye mein ne appko quality maal dikhaya*" True (and he was quite right about me being smart, heh!), but I needed a balance of both, quality and *paisa*.

Hopping out, I skirted to the Q of Lamington Road. Q is a brand by himself. Well-known in the hardware circle to stock only the best products, he offered me options galore: UPSes from Wipro, TVSE and APC—all priced above Rs 2,500. Good products, I asked? He underlined the nature of the support provided by these companies for their products as the best reason to buy them, apart from the fact that the UPSes themselves are good at their job. If ever they go down, he said, help is just a call away. Well, this made sense to me and I asked him whether he had any personal favourites. "Yes", he spat out, "I do—APC and Wipro. The UPSes from these stables rock". He did have an extra good word to put in for APC though. Since APC has a good brand recall, Q said that he ended up selling them more than his other favourite.

That was all I needed to go with APC. A little bargain ensued and I got Q to come around to sell me the APC Back UPS ES at Rs 2,600. And yes, I also took down their service centre number.

UPS Buying Tips

- ❑ Calculate your total power requirement to decide on the UPS you need. 220 V, 1.4 A is an example of monitor ratings. Just multiply them to get the VA ratings. For PCs, multiply their power supply rating (say 300 watts for example) by 1.4. Add the above two values to get a rough estimate of the total VA capacity for your UPS.
- ❑ The PC's power supply rated at 300 W is the peak that it can deliver, however under normal load it is seldom reached, hence a 500VA UPS will suffice for normal users. Gamers who use higher capacity power supplies may opt for a capacity of 700 VA and above.
- ❑ UPS battery backup time should at least be 10 minutes, so that you save your work and properly shutdown the PC in the event of a blackout.
- ❑ Look out for features such as surge protection, modem protection, etc.

Recording TV Programs

Q I am interested in recording some of my favourite TV programs available via the TV cable connection at home.

V.K.Narayan

001 Install a TV-tuner card in your PC and it should help you record your favourite TV programs without any fuss. TV-tuner cards from vendors such as Pinnacle and Compro are quite expensive, generally in the range of Rs 2,450 and Rs 3,925 respectively. While the Pinnacle is just a TV-tuner card, Compro's Videomate TV gold is a graphic card cum TV-tuner card. Pixelview also has some good cards, which are reasonably priced at Rs 2,000. The bottom end of the TV-tuner card market is dominated by Mercury and Intex priced at Rs 1,350 and Rs 1,250 respectively. I recommend the Pinnacle PCTV solution for its good balance of features and performance.

Motherboard And CPU Decisions

Q I am interested in buying a new computer and would like to know your view on my choice. Should I opt for a 915G motherboard with a 2.8 GHz processor or settle for a 3 GHz CPU on an 865G motherboard?

Himanshu Gupta

001 From the two options that you have mentioned, I suggest you opt for the 915 chipset motherboard. The reason being the CPU socket: As of today, Intel has discontinued the production of the Socket 478 processor and is pushing ones meant for the Socket LGA 775. The 865G comes equipped with Socket 478. Hence, there is no sense in investing in a dying technology. Recently, I came across Intel kits comprising a 915 motherboard (that are equipped with Socket LGA 775) and a 2.8 CPU that retailed for Rs 14,000. The ones with a 3 GHz CPU cost Rs 15,500.

While purchasing memory, avoid cheap Hynix RAM imitations. These are rampant in the Indian market. Opt for memory modules by Kingston or Transcend. They may make you shell out around Rs 500 extra, but are well worth their price.

Price List	
APC	2,850
Campion	2,800
Intex	1,600
Microtech	1,850
Powercom	2,100
Powersafe	2,200
TVSE	3,000
Wipro	2,800

A Free AnitVirus

Q I want an Antivirus suite from my home PC, but I don't want to spend more than Rs 1,000 on it. I use my PC for day-to-day office work and entertainment as well. I have a Pentium III 1 GHz CPU, 256 MB RAM, 40 GB and Windows XP. The antivirus should have an inbuilt e-mail scanner, but I don't want it to hog system resources though.

Suresh Menon

001 Why buy an antivirus when you can get one for free! Avast antivirus is one such free, robust and reliable antivirus software. All you need to do is register at their Web site www.avast.com and they will e-mail you a serial key. Enter the serial key for registration and that's it. However this application is free for home users only; for commercial purposes, a small fee is applicable. I have been using it for over a year and (touch wood!) my PC has been infection-free.

Bluetooth Transfers

Q How do I transfer photos from my Nokia 7610 mobile phone to my PC via Bluetooth. What do I need to buy so as to use Bluetooth on my PC?

Ganesh More

001 You will need a Bluetooth adaptor for your PC. You have two options available, first a card that plugs into the PCI slot of a PC and has an external antenna for communication—cumbersome to use. The other option is the USB Bluetooth adaptors: these tiny devices plug into your USB port and work as an interface for Bluetooth communication with your laptop or cell phone. The advantage of using such an USB adaptor is that you can remove it when not needed and plug it into another PC or laptop without any hassles. These adaptors are rated on the range that they cover: a 10 m adaptor will cost you Rs 1,000, whereas adaptors with a 100 m range will set you back by Rs 1,800.

Running Out For A DVD-RW

Q I like collecting movies and over the years have collected a huge repository of DivX prints. My 250 GB hard drive, which I use to store these movies, has started running out of space. I do not intend to invest in a hard drive, but would like to buy a DVD-RW. Please help me select a proper drive.

Milind Sonawane

001 We have just concluded a DVD-RW test and have looked at most of the offerings from all major players in the market. In my opinion, you can settle for the Pioneer DVR-108 DVD-writer. Apart from being the best performing drive, it also allows over-speed burning and does not cost a bomb. ❑



digit PRODUCT GUIDE 2005

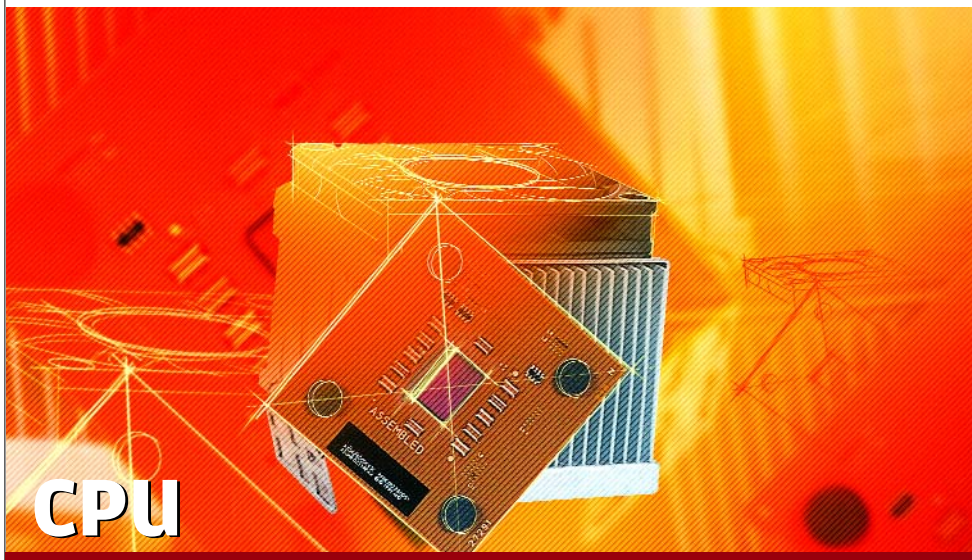
The complete lowdown on 21 categories to help you make that crucial buying decision

Index

CPU's (Processors).....	110
CRTMonitors (CRT)	112
Digital Cameras	114
Dot-matrix Printers	116
Home PCs	118
Inkkjet MFDs	120
Keyboards.....	122

Laptops	124
Motherboards	126
Mice	128
MP3 Players	130
PDA Cell Phones	132
OCR Software	136
PC TV Tuner Card	138

Projectors	140
RAM	142
Speakers	144
UPS Home	146
UPS Batteries	148
Web Cams	150
Wi-Fi Devices	152



Intel is expected to manufacture its Xeon, and AMD its Opteron, processors using the 90nm technology in late 2005. This is good news, since desktops these days need to work with the computing power of workstations.

However, there are areas of concern as newer processors with newer architectures are released. The upgrade path, for example, has become more difficult than it used to be. Newer CPUs will need mainboards that have chipsets specifically designed for them. A good example is the Intel 3.46 GHz CPU, which supports 800 MHz FSB. This will not work at 800 MHz FSB on older boards and clock down to 533 MHz. Hence, you may have to do a complete overhaul of your system.

AMD plans to manufacture its Opteron processors featuring x86-64 technology. It's all set to have dual-core processing as its prime feature, akin to Intel's Xeon "Tulsa" chip.

Of the two, AMD may have a manufacturing-cost benefit as its CPU cores are smaller.

This, however, does not necessarily mean that AMD offers better performance.

The Facts

☐ A CPU contains many ground pins in order to reduce noise and to prevent it from picking up stray voltages.

☐ According to Andy Moore, the founder of Intel, the number of capacitors on a chip would double every 18 months. Currently, this is not holding true—the latest Pentium 4 CPUs have just marginally more than those released last year.

☐ The 64-bit architecture, which was originally deployed for server applications, is now powering mid-range to high-end desktop systems.

☐ As the average temperature of the CPU rises by 10 degrees, its life-span is halved. This happens over a period of time due to a phenomenon called electromigration. Glitches and system crashes

Ready Reckoner	
 Low-end You Need	Decent performance in office-productivity applications
Look for	Any processor with a speed of 2.0 GHz
 Mid-end You Need	Good performance in graphics applications and multimedia
Look for	Any CPU within the range of 2.4 GHz to 2.8GHz
 High-end You Need	Media-editing, home entertainment, and gaming
Look for	A processor with a speed of 3.0 GHz to 3.4 GHz



are the immediate short term effects of overheating.

Do Remember

1. If you use your PC just for simple office work, it makes no sense in opting for the latest processor. Settle for an AMD sempron or Intel Celeron processor.
2. Graphic designers should look-out for processor with hefty cache memory, as it will make all the difference in your day to day work. Such people should go in for AMD's 64bit processors as the memory controller is also on die and hence reduces the memory sub-system latencies, thus improving overall speeds.
3. Pay special attention towards cooling the processor, as heating might reduce the life span of the processor.
4. The space near the processor in your cabinet should be devoid of cables for free air flow.
5. As of today all processors are available in box packaging with hologram seals, don't not settle for processor with box, as it might be used and devoid of any warranty.



Buying Tips

- ✓ A few 64-bit Linux OS offerings are already available for use, and it won't be long before Windows has a similar offering. Therefore, opt for a CPU with 64-bit support. Also, note that the Athlon64 processors are the fastest at handling 32-bit programs.
- ✓ The CPU speed should depend on the kind of tasks and application the PC is intended for. Do not waste hard-earned money on the fastest CPU to use it for applications that are never going to need that much power. Low-cost variants are available for such tasks.

These will do just fine.

- ✓ Since processors run at high speeds continuously, cooling becomes an important issue. Get a top class heatsink combined with the best cooling fan.
- ✓ Refurbished processors are still available in the market, especially the older generation CPUs that are still in demand in the market. If you ever set out to buy such processors, make sure it comes in an original box pack and has a proper holographic sticker on it.



CRT Monitors

CRt monitors have seen an increase in used sizes, but the technology has not progressed much. Some companies have recently managed to reduce the depth of a 32-inch CRT to just 38 cm, which otherwise would have been more than 60 cm. This was made possible by increasing the deflection angle of the electrons beam from 105 to 125 degrees. Research is underway for further a reduction in depth to as low as 20 cm. Initially, TV sets will employ these thin CRTs, and as mass production kicks in, the technology will filter down to desktop monitors at affordable prices.

Do Remember

- ❑ Make a note of the dot pitch (or the grille pitch in case of an Aperture Grille monitor) of the monitor before purchasing it. The smaller the dot pitch, the better the image clarity.
- ❑ A monitor will need to tilt and swivel. Make sure the base is flex-

ible enough for easy movement.

❑ Never hit an Aperture Grille monitor at the side. This might displace the wire mesh, which is the heart of the monitor.

❑ If you are a designer or a graphic artist then make sure the monitor bundles along a proper driver, which is required for setting the colour profile.

❑ Never keep objects such as power adapters, stabilisers etc emanating electromagnetic fields near the monitor as they can permanently damage the focusing system of the monitor, resulting in blurred images.

❑ If you keep your speakers near the monitor make sure they are magnetically shielded to avoid their interference.

4. Check the highest resolution the monitor can achieve at 75Hz, typically buy one that can go upto 1280 x 1024 for 17 inch and 1600 x 1200 for 19 inch.

Facts

❑ Aperture Grille monitors are preferred over Shadow Mask



Buying Tips

- ✓ Buy a monitor that offers a resolution of 1280 x 1024 at the least. Some 15-inch models in the market offer this resolution, but you should consider moving on to a 17-inch model.
- ✓ If you are not an audiophile, the stereo speakers attached to some monitors are a good option. They save desk space, and managing cables is less tedious.
- ✓ Some monitors come with anti-glare coating. This helps reduce strain on the eyes and lets you work for long hours.
- ✓ Manageable OSD controls are very important as they are frequently used. Ensure

that your monitor's OSD interface does not require too many button presses and is reasonably accessible.

✓ Choose a monitor with a detachable power cord over one with an integrated one. This will grant you greater flexibility, enabling you to service the cable without the monitor if it develops a fault.

✓ If you are an imaging professional, look out for Aperture Grille technology-based monitors over Shadow Mask monitors, as they offer better geometry, colour depth and brightness.

Ready Reckoner



You Need

A monitor to run movies, games and office applications

Look for

15-inch or 17-inch Shadow Mask monitor



You Need

A monitor for DVD movies and gaming at High Resolution

Look for

19-inch Aperture Grille or Shadow Mask monitor with fine grille pitch or dot pitch



You Need

Graphics and Imaging applications such as CAD and Photoshop

Look for

21-inch Aperture Grille monitor with separate RGB inputs



ViewSonic®
See the difference™

monitors in graphics and imaging applications

❑ A monitor needs a lot of power, and therefore is generally powered separately instead of via the Switched Mode Power Supply (SMPS). Remember that a monitor is a sensitive device, and therefore requires clean power for smooth and long-lasting functioning

❑ If you are a designer or a graphic artist then make sure the monitor bundles along a proper driver, which is required for setting the colour profile.

❑ Never keep objects such as power adapters, stabilisers, etc, emanating electromagnetic fields near the monitor as they can permanently damage the focusing system of the monitor, resulting in blurred images.

❑ If you keep your speakers near the monitor make sure they are magnetically shielded to avoid their interference.

❑ Check the highest resolution the monitor can achieve at 75 Hz, typically buy one that can go upto 1280 x 1024 for 17-inch and 1600 x 1200 for 19-inch.



Digital Cameras

The wide acceptance of digital cameras, and the ready availability of software to modify captured images, have prompted newer operating systems such as Windows XP to bundle inbuilt driver support, making the devices virtually plug-and-play.

There are a few features found only in high-end cameras, which will certainly be implemented in entry-level cameras soon. These include the TruePic technology from Olympus, which uses all the pixels even at lower resolutions. The software thus enlarges the image even when it is in raw format on the camera, so as to get a higher interpolated resolution. This reduces the artefacts associated with enlarging photos using software.

Future cameras will also have lenses specifically designed for digital cameras. This is necessary because as the Charge Coupled

Device (CCD) count goes up, the pixel density increases manifold. Even cameras with the best CCDs might not produce a great image if the lens does not let the CCD look through it precisely when zooming in or out.

Today, USB and FireWire are the interfaces of choice for most digital cameras. But devices from laptops to PDAs, and even cell phones, are embracing wireless connectivity to talk with the PC and other mobile devices; the digital camera will surely follow suit.

How A Digital Camera Works

1. Light passes through the lens and is directed to the CCD.
2. The image is focused on the CCD.
3. The ADC (analogue-to-digital converter) converts the image from the CCD into digital signals.
4. The ADC sends data to the DSP



Buying Tips

- ✓ **DIGITAL/OPTICAL ZOOM:** While buying a camera, pay special attention to the optical zoom, especially if you intend to use it outdoors more often. Do not be too impressed by digital zoom.
- ✓ **MEMORY:** Most cameras have 16 MB or less of internal memory. This can store some 30-35 images depending on the subject and resolution, but if you're going to be travelling, you will need external memory cards.
- ✓ **MANUAL SETTINGS:** Buy a camera that has manual exposure and shutter-speed settings. This will allow you to improve indoor shots, where lighting is usually poor.
- ✓ **BUNDLED CABLES:** Check for the necessary USB and video cables. Opt for a

camera that does not need a proprietary USB cable—these are generally expensive and difficult to procure.

- ✓ **AESTHETICS:** Buy a camera that offers good grip and has proper placement of buttons. Slim cameras look good, but they are poor as far as ergonomics and functionality goes.
- ✓ **RECHARGEABLE BATTERIES:** Digital cameras, especially those with an inbuilt LCD screen and optical zoom, require a lot of power. Buy cameras with rechargeable batteries.
- ✓ **ENVIRONMENT PROTECTION:** Some cameras offer splash-resistant packaging, which minimises risk of damage by water or moisture.

Ready Reckoner

	To be able to take photos to compile personal albums or publish to the Web
You Need	
Look for	Between 640 x 480 and 1,024 x 768 resolution and 2 MB memory; perhaps one that doubles up as a Web cam
	High quality images with plenty of configurability
You Need	
Look for	1,280 x 1,024 resolution with at least 2X optical zoom and 8 MB of storage
	Very high quality photographs and expandability
You Need	
Look for	2,048 x 1,536 or higher resolution with special lens options, and a minimum of 16 MB of memory

SONY

(Digital Signal Processor) which creates the image and compresses it.

5. The final image is stored either on the inbuilt flash memory or on a memory stick.

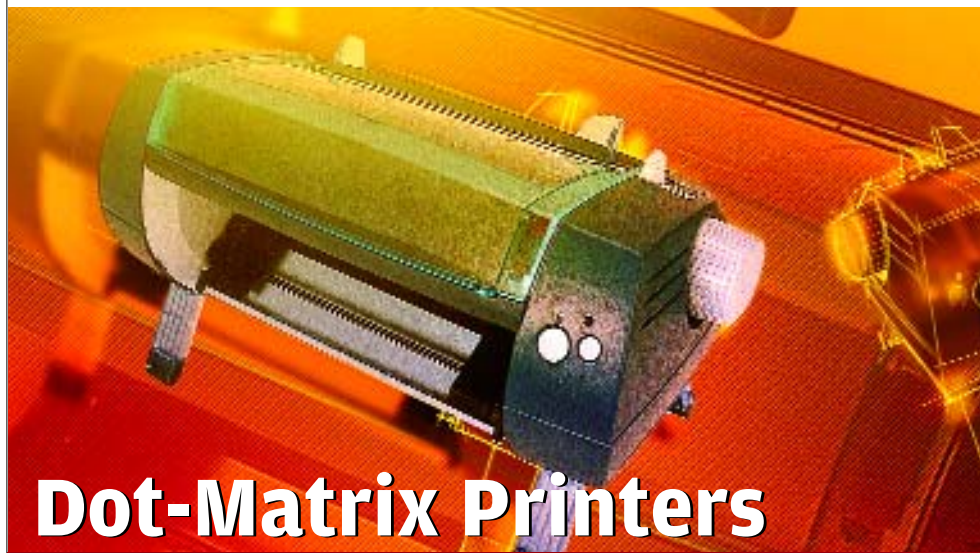
Do Remember

CMOS-based sensors are less expensive to manufacture than CCD-based sensors. But they cannot capture motion well. Many industry analysts believe that eventually, all entry-level digital cameras will be CMOS-based, and that only mid-range and high-end units will use CCDs.

Today you can buy photo printers that can print directly from a digital camera.

Facts

CCD technology was initially developed in the 1960s as a memory device. It was only in 1974 that Fairchild Electronics developed an imaging device using CCDs, with a format of 100 x 100 pixels. Now some high-end cameras have a 3-CCD setup to separately capture red, green and blue light for optimum results.



Dot-Matrix Printers

With the evolution of inkjet and laser printing technologies, experts had predicted the death of the dot matrix printer a long time ago. However, though these printers have moved out of the home environment, they have settled into their own niche and are far from being extinct.

The fact is that no other printing technology is more suitable for printing in bulk—especially in the area of billing.

Though inkjets and laserjets are much better when it comes to aspects such as print quality and speed, the low running costs and reliability of a dot matrix printer makes it a dependable choice for very large, average-quality print jobs.

What To Look At

1. **Front Panel:** You should see buttons to power on the unit, load paper, pause printing, select a font, etc.
2. **Head:** The printer head consists of either nine or 24 pins that hit the paper through the ribbon to create the image on the paper. 24-pin printers provide better quality than 9-pin printers.
3. **Ribbon:** The ribbon is a nylon strip impregnated with ink that gets transferred to the paper whenever the pins strike it. The replacement of a ribbon is simple as well as cheap.
4. **Roller:** The roller has sensors attached to it, which detect the paper. The roller pulls the paper into the printer.



Buying Tips

- ✓ **NUMBER OF PINS:** Here, pins refer to the metal pins on the printer head. Since every character or image is made up of dots, the more the number of pins, the better the print quality. There are two options to choose from—nine pins and 24 pins. Opt for a 24-pin print head as far as possible, since it will provide better print quality.
- ✓ **BUFFER:** A large buffer allows for quicker printouts.
- ✓ **PAPER FEED METHOD:** Friction Feed as well as Tractor Feed should be supported. In Friction Feed, the printer pulls in a sheet from a stack of paper as and when needed. The Tractor Feed mechanism has spokes that fit into the perforations on either side of the paper, and the paper consists of a continuous sheet that can be torn at fixed lengths. Opt for printers that have Top, Bottom and Rear feeding.
- ✓ **AUTOSHARE (ALSO CALLED AUTOSWITCH-**

ING): Some printers with both serial and parallel interfaces can be connected to two PCs simultaneously. The printer senses the PC that is sending data, and switches to the corresponding port. This feature, called AutoShare, is not standard on all printers.

- ✓ **LANGUAGE PRINTING CAPABILITIES:** Dot matrix printers are capable of printing in languages other than English. Look for a printer that has the facility to download other language fonts through a flash ROM.
- ✓ **PRINTING CARBON COPIES:** A lever to the side of the printer lets you decide the thickness of the paper. Combining this with a continuous sheet of type 1+1, 1+2, etc. enables you to print more than one copy simultaneously. Here, 1+1, 1+2, etc. indicate that one copy will be the original while there can be more than one carbon copy. Ready stationary to print carbon copies is available in the market.

Ready Reckoner



You Need

To print bills and invoices on A4-size paper

Look for

An 80-column printer



You Need

To print reports, work-sheets, and balance sheets on A3-size paper

Look for

A 136-column printer

EPSON

5. **Slots:** Slots on the paper provide traction.

Do Remember

❗ Never use low quality ink for a refill. This will lower the life of the print head significantly, and the process itself is messy.

❗ Make a rough calculation of the ribbon's replacement over the life of the entire unit before buying a dot matrix printer. Prints in draft mode are economical.

❗ In case you intend using colour ribbons, make sure you buy one that is of good quality. Though a little expensive, they do give you value for money in the long run.

Facts

❗ Change the ribbon as soon as you start to get faded printouts. A new ribbon not only gives good printouts, but also lubricates wires or pins for smooth functioning and increases the life of the printer. Dried-up ink causes undue wear and tear on the individual pins.

Home PCs

Home PCs keep seeing drastic changes. With every New Year we see more and more powerful PCs. In a few years, more powerful workstations might be available for regular users at a good price.

The upgradation path becomes more and more difficult though, as newer processors will require newer motherboards and different hardware to run.

The segment may shift from single-processor powered PCs to multi-core processors, and perhaps two graphic cards working simultaneously. Input devices will get cordless, with various options such as RF and Bluetooth.

The Home PC will soon work as a media centre, capable of playing radio (FM and Internet) as well as DVDs and VCDs without booting up the system.

Facts

❑ Cool systems perform better

that a system which is hot. Also, there is a risk of damage to the hardware when the system becomes hot; therefore, the cabinet must have good ventilation and an extra fan if possible.

❑ The cheapest way to increase the system performance is by increasing the system memory to around 512 MB. This will help in multitasking and with memory-intensive programs such as image-editing software and games.

❑ Also, use external add-ons in place of the on-board chipsets. An add-on video card can greatly enhance the system's performance in graphics-related activities.

❑ A faster hard disk improves the performance during video encoding and transfer of data; go for a 7,200 rpm or 10,000 rpm hard disk if you work with video editing and capturing software.

❑ Look for PC's that provide you with more connectivity options such as USB2.0 and Firewire. This



Buying Tips

✓ Make a list of the components you want to buy, such as the sound card, graphics card, hard disk, RAM, and last but not least, the processor. Assess your requirement thoroughly before making a choice.

✓ For a music enthusiast, a PC with a good sound card and speakers is important; similarly, for persons involved in video recording, storage performance and space is critical; for a gamer it's the graphics accelerator, RAM, and processor that matters the most.

✓ While buying a PC, always buy genuine parts; check for manufacturers' seals on the boxes before opening them, and enquire about possible future upgrades such as a BIOS upgrade for the board and so on.

✓ Buy a motherboard with onboard AGP and an AGP slot for expansion; opt for a motherboard that supports DDR2 memory. At this point, PCI-Express based chipsets can safely be overlooked in the interests of economy.

✓ A combo drive is adequate for most purposes, but a DVD-Writer is preferred as they can read and write both CDs and DVDs.

✓ For today's applications, 256 MB of RAM is a must. If you want to play the latest games as well, 512 MB would be a better choice.

✓ For normal work, buy an 80 GB hard disk to give you adequate room to hold music and videos in addition to your work-related software and data.

Ready Reckoner



You Need

A decent-performance system

Look for

A PC powered by a processor with speed in excess of 1.4 GHz with 256 MB of RAM and onboard AGP



You Need

A good multimedia PC for normal gaming

Look for

A PC powered by a processor with speed in excess of 1.8 GHz with 256 MB RAM and 64 MB AGP



You Need

A powerhouse PC for home entertainment and professional work

Look for

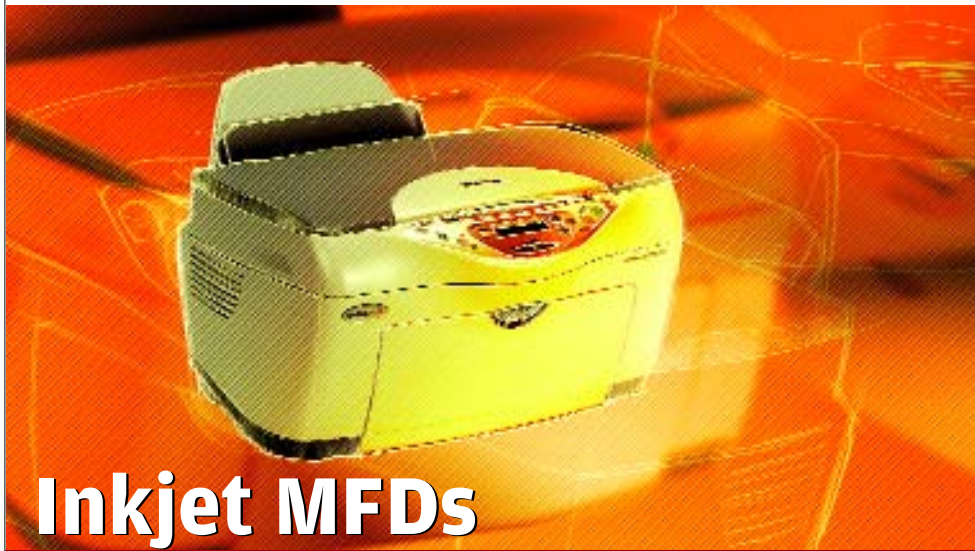
A PC powered by a processor with speed in excess of 2.4 GHz with 512 MB of RAM or more, and 128 MB AGP



will ensure that the Digicam sent to you on your birthday can be connected to your computer to save those videos on to a DVD.

❑ If your PC is your main source of entertainment such as gaming, watching movies and listening to music, make sure that you invest in the right peripherals even if it costs a bit more. A sound card such as the Audigy will only be a bit more expensive than the SoundBlaster Live, however, the performance it provides is excellent. Similarly, a Radeon 9600 will give you much better results in gaming than a run-of-the-mill Geforce4 MX 440. A Creative Inspire 5.1 will provide you with a much better aural experience than a cheap speaker set available from your PC dealer.

❑ Look for more add-on cards if you can fit it into your budget. A TV-Tuner card is a welcome addition since it will let you capture TV shows and you can watch them later at your own sweet time. If this increases the budget by about Rs 500, it still is a good deal.



Inkjet MFDs

MFDs will gain a mass acceptance provided they become cost effective and provide better quality solutions. MEAP (Multi-functional Embedded Application Platform) is an upcoming technology developed by Canon to make Multifunctional Devices future-proof and easy—it's a JAVA-based platform which achieves several objectives, functionality is controlled by software making each functions to be used by the user easily available. Also communicating with your printer becomes vastly simplified with functions tailored to your workflow. Using MEAP you can also customized MFD with off the shelf application which is not possible with most units available right now.

Facts

❑ One disadvantage with MFD is that if one component breaks down the device won't function. Individual components—

the printer, scanner of a MFD cannot be separately upgraded.

❑ Simultaneous use of component in a MFD is possible, so the users can print, scan and fax at a same time. However printing and copy can't be done simultaneously as printer unit is needed even for copy purpose.

❑ Multifunction devices (MFDs) were created, combining printing, scanning, copying and often faxing—all in one. MFDs are cheaper than buying separate stand-alone devices, take up less space and need only one connector cable and one power outlet.

❑ For bulk usage it is advisable to invest in a Laser MFD over an inkjet MFD because the running cost of inkjet MFDs generally turn out on a higher side.

❑ The printing unit in most MFDs support only A4 size and hence for specialized application such as A3 printing you will need to rely on a standalone printer.



Buying Tips

✓ MFDs (Multi Functional Devices) is a combination of a printer, scanner, copier, and in some case a fax as well. Buying an MFD is a viable option only if you need all of these functions; entry-level MFDs provide cost effective solution.

✓ MFDs with more memory can accommodate more data in their queues without causing errors when data is sent for printing. If you are looking for an MFD that will be used by, say, 10 to 15 users, then opt for one which has at least 16 MB of RAM. Some MFDs, especially those targeted at

enterprises, support memory upgrade to greater levels.

✓ Buy a MFD that supports a high-speed USB 2.0 connection and comes equipped with a parallel connection (also known as the printer port) for porting it with older PCs.

✓ In case you intend to use it over a network, ensure that the MFD comes with appropriate software and accessories to do so.

✓ Some MFDs bundle OCR software to scan a document and save it as a specific file, such as a Microsoft Word document.

Ready Reckoner



You Need

MFDs for a SoHo business

Look for

At least a 600 x 600 dpi printer and 600 x 1,200 dpi scanner, stand-alone copying feature and low cost per page



You Need

MFDs for a small business

Look for

Automatic Document Feeder, dialpad for faxing, USB 2.0



You Need

MFDs for professional use

Look for

USB 2.0, direct printing from flash cards, support for highest possible resolution for image printing and copying

EPSON

❑ Most MFDs have scanner units that can only scan documents; if you need a TP scanner a standalone scanner unit is a must.

❑ Recently launched inkjet MFDs have support for memory cards and some are Pictbridge compliant, they make a good buy if you have a digital camera.

❑ Not all MFDs have fax feature, select few models have this facility. If you see the requirement coming up in the future it is better to buy a model with fax capability.

Also some MFDs have software driven faxing capability hence before buying read through the specifications properly to figure out what type of fax features are available.



If you are using a standard QWERTY keyboard—and most of us do—your keyboard design is over a century old. Keyboard design has stagnated over the last few years. However, some vendors have launched products that are wacky to say the least, and ergonomic as well. For instance, SafeType Inc launched a keyboard that they claim is designed as per scientific biomechanical principles and virtually eliminates the high-stress postures that contribute to Repetitive Stress Injury (RSI). This device looks

like a standard QWERTY keyboard that's been broken up into three equal pieces. The two outermost pieces are placed vertically, with keys on the outside, and a couple of mirrors placed alongside. The horizontal middle piece has the number keys.

Do Remember

■ The QWERTY keyboard layout was invented by Christopher Sholes in 1867. This layout is dominant even today. It was used on the Sholes & Glidden type-Writer, manufactured by E. Remington & Sons in 1874.



Buying Tips

✓ **AESTHETICS:** The keyboard needs to be soft and smooth to the touch. The pegs should be sturdy; many tend to break with the slightest jerk. The keys should be responsive. Try to fit in a wrist pad to lessen the strain on your wrists.

✓ **ERGONOMICS:** A "natural" keyboard ensures ease of typing. This ergonomic keyboard is split in the middle, offsetting the keys where the two hands lie. It does take some time to get used to it, especially since the arrow keys have been completely changed.

✓ **HOTKEYS:** Hotkeys let you open programs such as messengers, e-mail applications, or a Web browser, at the touch of a button. Opt for a keyboard that integrates a large number of hotkeys in the layout. Some keyboards might have a scroll button for added flexibility.

✓ **WATERPROOFING:** Some keyboards are waterproof. Water gets drained out via the pores at the bottom of the device.

✓ **WIRELESS CONNECTIVITY:** Opt for an RF wireless keyboard. Unlike infrared-powered

devices, RF wireless connectivity does not require the keyboard to be within line-of-sight. Make it a point to check the number of batteries required. Lastly, make a note of the maximum range at which the keyboard works.

✓ **Key spacing** is one important aspect that you should look out for before settling on a particular model. New keyboards are crammed with keys making it impossible to use the keyboard without fatigue.

✓ **Before you buy**, use the keyboard and try to get a feel of it, some keyboard look good but they might not suit your style of typing.

✓ **Mechanical keyboards** are still a better bet when it comes to durability, membrane keyboards wear out in two-three years.

✓ **Wireless keyboards** are good for clean and neat desk but be prepared for their higher running cost, since they require batteries to run.

✓ **Do not use rechargeable batteries** in wireless keyboards as they have a different rating that does not suit most electronics, if otherwise specified.

Ready Reckoner



You Need

A reasonably priced keyboard that offers touch typing

Look for

A membrane keyboard with 104 keys in the range of Rs 300-375.



You Need

Good ergonomics, style and comfort

Look for

Hotkeys, and an ergonomically engineered design



You Need

Comfort, security, ergonomics and good looks.

Look for

Advanced security features, trackball and wire free connectivity



Logitech

■ Tomorrow's computer keyboard might be played more like an accordion than a piano, says a Cornell University ergonomist. This, he says, is because a prototype vertical split keyboard (VK) allows two to three times more typing movements to stay in safe, low-risk positions for carpal tunnel syndrome, compared with a traditional keyboard.

■ A good example of vertical keyboard is SafeType keyboard. This keyboard is designed to reduce the stress on your wrist by placing the keys in the vertical axis, rather than horizontal as with normal keyboard.

■ Microsoft has a series of keyboards specifically designed to reduce stress due to typing and they are much cheaper than solutions such as SafeType.

■ If you are new to typing, then probably you can learn on a "Dvorak" keyboard rather than "QWERT" type. The Dvorak is known to be user friendly and intuitive.

Laptops

The trend in laptops is towards thin, slim and light. We already have laptops an inch thick. Newer laptops come with better battery life, thanks to technology such as SpeedStep processors, video cards that blank out unused bits of hardware, low-power hard drives, and so on. In the future, the advancement in the laptop will further reduce power consumption and give longer battery life.

nVidia has introduced MXM modules, which are nothing but replaceable graphic cards. Future laptops that will use this

approach can upgrade the graphics subsystem, and update it just like in desktops. Storage may change from removable disks (floppy, Zip, CD, and DVD) to solid-state memory, which would make them even lighter and thinner.

Do Remember

❑ Don't buy a laptop that has the drive located in the front.

❑ Make sure that the laptop design allows for proper air ventilation. This is very important for crash-free working and long hardware life.

Buying Tips

- ✓ **PROCESSOR:** Pentium M, Pentium IV M and Athlon Mobile processors are available for the laptop segment, with the Pentium offering the best performance-to-power consumption ratio.
- ✓ **UPGRADABILITY:** This may not occur to you when you purchase a laptop, but it's important all the same. Here are some options to look for when upgrading your laptop—the RAM, the CPU, the hard drive, etc. Are the upgrades something you can do yourself, or do they require visits to a service centre?
- ✓ **LOCATION:** Before you buy a laptop, make sure you can easily return it to the dealer if it proves unsatisfactory. Also check if the dealer can service your laptop. If he can't, where's the nearest location your laptop can be serviced?
- ✓ **BATTERY:** The uptime for most Lithium-ion battery powered laptops is about three to four hours. Purchase a spare battery in case you happen to use your notebook for a period longer than that—say, while travelling.
- ✓ **KEYBOARD:** If you do a lot of numeric typing along with regular typing, a numeric keyboard is what you need to look for. Go for one with a

USB connection, as the connection is plug-and-play and can be safely hot-plugged.

- ✓ **DRIVES OR BAYS:** Though it makes sense to have all drives such as the floppy drive and the DVD/CD-ROM drive built into the main casing, a hot-swappable bay gives you greater flexibility.
- ✓ **DOCKING STATIONS:** This is useful if you are using an ultra-portable system that does not have basic I/O ports and drives. However, not all notebook models give you this option.
- ✓ **COMMUNICATION:** Go for an inbuilt 56K modem. If you need to connect to a network, you will also need an inbuilt, or a PCMCIA-based, Ethernet port. Also consider Wi-Fi support, as it is getting common.
- ✓ **POINTING DEVICE:** You can choose between a pointing stick or a touch pad. Pointers are easier to control, but can give you a sore finger.
- ✓ **HARD DRIVE:** Capacities range from 30 GB to 60 GB. Most users find 20 GB enough.
- ✓ **CARRY CASE:** A sturdy carry case, preferably one that opens only from the top, is essential. These are available in various types and sizes. Some also serve as overnight travel bags.

Ready Reckoner

 You Need	A purely functional device at an affordable price
Look for	A model that has an extra bay that can hold a CD/DVD-ROM, floppy drive, add-on battery or even a CD-RW drive.
 You Need	Something that gives high performance, and has several extra features as well
Look for	Something that gives you all the functionality of your desktop PC
 You Need	An ultra-light notebook; something with a little panache
Look for	Extremely lightweight devices that are different from the rest of the crowd



❑ Many laptops offer large screens and can work as desktop replacements. But the larger the screen, the more difficult it will be to use the laptop in cramped locations, such as in an airplane or car.

❑ "Refurbished" is a term used to describe a laptop, or any hardware device, that contains one or more components that have been used and/or repaired. Refurbished laptops are lower-priced, and are generally a good deal for budget-conscious buyers. However, such laptops are available through local dealers and not the vendors themselves.

❑ Although most manufacturers today tend to reduce the amount of documentation included with laptops, all manufacturers will include some type of paper documentation or paper inserts. Check if this includes information on upgrading, connecting the cables, and how to use the bundled software.

Motherboards

The computer enthusiast never had it better, since everything has gotten faster, cheaper, and easier to use. New products will integrate the CPU, graphics, and the entire chipset, often called "System on a Chip (SOC)".

They still can't integrate enough memory yet, so memory will continue to be in external DRAM chip form. So far, these SOC devices are meant for low-end applications such as Web Pads, PDAs, and other smart "Information Appliances".

However, this approach represents the eventual endpoint for PC integration.

Newer technology on the heels of DDR DRAM is a natural evolution to Quad-Rate DRAM, pumping data out 4 times on each clock. Motherboards supporting such RAM chips will be tested and proven on servers before coming to desktops.

Facts

Investing in a better motherboard provides better future upgrade solutions, as well as performance.

The maximum configuration to which a PC can be upgraded including the type of processor, amount of RAM, size of hard disk and external add-on cards depends on the motherboard.

Certain motherboards support overclocking—by increasing the FSB of your processor the speed of the processor increases; exceeding the speed too much may result in CPU failure though.

Facts

Motherboards that support two processors can perform two functions simultaneously.

Before you buy motherboard keep upgradeability in mind, especially the graphics subsystem and the processor speed it



Buying Tips

Building a new PC or overhauling an old one? The motherboard is the place to start. Your motherboard determines the type of RAM and CPU you can use; look for future-proof motherboards that provide extra features such as FireWire (IEEE 1394) and over four USB 2.0 ports, six-channel sound chips, and either SATA or IDE RAID controllers.

Buying a Motherboard supporting CPUs that are not going to be phased out soon makes sense—during your next upgrade you won't need to change your motherboard. Motherboards supporting DDR and DDR2 memory are an added advantage, as DDR is cost effective—and DDR2 gives better performance.

When it comes to top performers and the latest technology, look for nForce 4 chipset boards for AMD 64-bit processors with business-calibre RAID functionality, 802.11g Wireless PCI card, IEEE 1394b, an additional SATA RAID controller, 7.1-channel audio, a PCI Express x16 slot for video cards and a dual BIOS. For the latest motherboard from Intel, look for Intel's 925X chipset-based boards—these support features such as PCI-Express; DDR2 memory up to 533 MHz; High-Definition Audio subsystem; and SATA support.

Motherboards based on Intel's 865 and 875 series chipsets are things of the past—invest on boards such as the 925 series for Pentium processors, and nForce 3 or nForce 4 for AMD's 64-bit processors.

Ready Reckoner



You Need

A motherboard that will support older hardware and has newer features

Look for

nForce2 chipset-based motherboards for AMD's Athlon XP and Intel's 865 chipset for an Intel Processor



You Need

A motherboard for good performance supporting some of the latest features

Look for

An nForce 3 chipset for Athlon XPs and Intel's 875P chipset for Pentium 4 processors



You Need

A motherboard that is a great performer and is feature packed

Look for

nForce 4 chipset board for AMD 64-bit and Intel's 925X chipset based-motherboards

KRYPTON

can support.

If you are building a new system based on 915 or 925 chipset, lookout for the combo boards that support both DDR and DDR2 standard memories.

Motherboards based on ATI's chipset for AMD's 64 bit processor are supposed to hit the market by this December, so wait and watch. These motherboards promise much better onboard graphics than what we see on today's motherboards.

If you are buying feature loaded enthusiast's motherboard make sure you buy a really good power supply that has enough juice to supply the demand.

Overclocker's should pay special attention to the quality of MOSFET's and capacitors used on the board. Better the quality better the overclocking potential of the board.

When buying dual processor motherboard pay attention to the placement of the two processor sockets; there should be considerable space between them for proper ventilation.

Mice

The GyroMouse from Gyratation is already available in the market—it uses a gyroscope instead of a ball or optical technology. This mouse doesn't need a surface—all the user needs to do is hold it in his hand and move it.

The GyroMouse mouse is expensive and therefore not widely available. The Mouse Glove is a wearable device fashioned in the form of a glove. This will indeed revolutionise the way one uses PCs. It is being developed for people suffering from RSI (Repetitive Stress Injury), and will also be marketed as a gaming tool.

Facts

Mouse technology has survived so long mostly

because it harmonises almost perfectly with human hand-eye coordination.

■ Douglas Engelbart invented the “X-Y Position Indicator for a Display System” in the 1960s, and owns the patent for it. Today, we call it the mouse.

■ The first computer mouse was built of carved wood, and had one small red button that was used to select items on a computer monitor. There was no room inside the casing for a second button because the electronics used in the mouse were too large.

■ The first mice used two perpendicular wheels that stuck out of the bottom. Later, the mouse was given a ball, which was next to a

shaft. The mouse ball technology became nearly universal. The technology is still the most widely used, though other technologies have been developed.

Ready Reckoner	
 You Need	A cheap yet comfortable mouse
Look for	An optical scroll mouse with PS/2 interface and a USB to PS/2 converter available out of the box
 You Need	Extreme Precision and supreme comfort
Look for	Wireless optical scroll mouse with extra hotkeys and preferably USB interface



Buying Tips

- ✓ **TYPE OF MECHANISM:** Optical mice are better than the old-fashioned ball ones. They are accurate and don't require cleaning.
- ✓ **TYPE OF WIRELESS:** Unlike infrared, RF wireless connectivity doesn't require the mouse to be within line-of-sight. This makes an RF wireless mouse the obvious choice.
- ✓ **ADD-ON CONNECTOR:** Ensure that the manufacturer provides an USB to PS/2 converter, in case you have to use the device on the PS/2 port.
- ✓ **TYPE OF SCROLLING:** Some mice support only vertical scrolling, while some support horizontal scrolling as well. A mouse that offers both provides greater ease of use while browsing through Web pages or documents that are unusually large.
- ✓ **CABLE LENGTH:** Check if the cable is long enough to

reach your cabinet.

- ✓ **NUMBER OF BUTTONS:** Opt for a three-button mouse rather than a two-button mouse. The middle button can be customised. Some mice provide you more than three customisable buttons, which come in useful while browsing, gaming, etc.
- ✓ **SYMMETRY:** Some mice are perfectly symmetrical, and hence can be used either by a left-handed or a right-handed person. These can be less comfortable than one that is moulded for the right hand, so do try them out before you buy.
- ✓ **INTERFACE:** A device with a PS/2 interface should be preferred over a serial mouse or a USB-based mouse, since that interface offers the most backward compatibility, while leaving the serial ports free for other peripherals.

MP3 Players

After integrating FM tuners and picture viewers, some high-end models have already moved to movie playback capabilities.

The Creative Zen Portable Media Center is one such example. It can play music (mp3, and wma, wav), video (avi, mpeg, mp2v, mpeg2), photos (jpeg) and Microsoft Recorded TV Show files (.dvr-ms).

Using Windows Media Player 10, this device can display large JPEG files, which is not possible otherwise. You have the option to either view the movie on the device screen or connect it to a TV via the video and line-out cables.

A text viewer and schedule option are other interesting features added into MP3 players recently—these let you read important notes and lyrics, and schedule FM recordings. The on-board screens can display as many as 2,60,000 colours, which is needed for better movie play-

back and image viewing. All this is here but not widely available. However, these features will get incorporated into more players once more vendors adopt them.

Do Remember

❑ Avoid excessive mechanical pressure on a portable player. This will prevent damage to sensitive parts such as the screen and the internal hard disk..

❑ Use good quality batteries of reputed brands, especially if you are using rechargeable batteries. Inferior quality batteries can leak inside the player and render it useless.

❑ Check for earphones. Bad quality earphones will destroy your listening experience and also cause discomfort. If you have a player that is of robust build quality, but has poor quality earphones, go for another pair of earphones which are more comfortable.

❑ If you want to use your flash



Buying Tips

✓ Flash based MP3 are good alternatives for thumb drives, for they can be easily synced and can double as MP3 players.

✓ Hard drive based MP3 players are best if you wish to carry your entire music collection with you

✓ Hard drive based mp3 player are bigger in size than flash based and therefore it makes more sense for those travelling short distance and needs just few hours worth music, to buy flash-based player

✓ Check out the battery requirements before buying a portable player. Batteries will add to the running cost of the player. Many models come with built-in rechargeable

batteries, opt for these instead.

✓ Buy a player which can house external memory cards as well, this way you can expand its storage space when you need to.

✓ Try and avoid players with proprietary USB cables, there are costlier and not as easily available as a standard USB cable

✓ Check the access time of the hard drive based mp3 players. If you find it takes too long to jump from one song to another just get flash based player.

✓ Make sure the software bundled with the player has no issue with your OS. Also see that it can be used as external hard drive to carry data other than MP3

Ready Reckoner



Low-end

You Need

To carry enough music for a few hours of listening

Look for

A Flash-based player with at least 128 MB memory



Mid-end

You Need

to carry music around without burning a hole in your pocket

Look for

A hard drive-based player with at least 5 GB storage



High-end

You Need

To carry your music around with no concern towards the budget

Look for

A hard drive based player with at least 20 GB of storage

CREATIVE®

drive portable audio player as more of a storage solution than a music player, go for a solution that lets you use the disk as a storage option even when the battery is down. If you do want to listen to music, just plug in a battery and your music player is ready.

Facts

❑ Some hard-drive-based players heat up after prolonged use. It is therefore necessary to have enough inbuilt memory, so as to reduce disk spin.

❑ In a flash-based player, the backlight is the major consumer of battery power.

❑ Hard drive-based portable digital players may heat up after prolonged use. Ensure that the hard drive spin is reduced by getting a player that has considerable cache memory.

❑ Check for power saving options on a flash-based player. LCD displays and FM tuners absorb more power than normal music listening. Make sure that there are options to control the contrast of the LCD backlight, how much time should it remain on etc.

PDA Phones

PDA phones converge two widely used mobile devices—the cell phone and the Personal Digital Assistant (PDA). Initially, the functionality of these two devices were combined to form a single unit. However, as time progressed, advanced technologies were integrated to make it a device with almost the potential to replace a laptop. As of now, most integrate Bluetooth and Wi-Fi as well.

Large and better-quality colour screens have made their way to these products. Most PDA phones sport at least a 65K colour screen. Newer generation phones promise better screens capable of playing video in full-blown colour.

The Symbian OS has been the base on which most PDA phones run, but Microsoft and

Palm are developing their own OSes for the mobile market. While the MS PocketPC and Palm OS are quite good at PDA functionality, they are not up to it when it comes to the integration of cell phone features.

However, this is temporary; changes are in the pipeline. Nokia has, for long, avoided the concept of PDA phones; however, that will change in a few months with the introduction of their first true PDA phone.

The amount of memory that these phones incorporate has gone from a paltry 4 MB to 90 MB in just two years. However, manufacturers have realised that Flash-based memories are not the answer, and it is high time to look out for hard disks as the best possible alternative for high capacity storage.

Bluetooth has matured for

Ready Reckoner	
 You Need	A decent PDA phone that does not cost a bomb and has all the necessary features
Look for	Models such as Motorola A760 offer necessary features and cost no more than Rs 20,000
 You Need	A full featured PDA phone with all possible features of both world-cell phone and PDAs
Look for	PDA phone such as Sony-Ericsson P910 is your best option. This phone has a digital camera, MP3 player, video-capture, scheduler, etc



short-range wireless communication; however, it is Wi-Fi in PDA phones that will open the floodgates. Not only will you be able to talk using a cell phone service, you will also be able to use VoIP services such as Skype.

On the multimedia front, things are already in place; almost all PDA phones today have support for MP3 audio, and can play video files. PDA phones will take integrated cameras to the next level of clarity and finesse. As time progresses, things will get rosier, and streaming on your PDA phone is not a distant possibility.

Elements Of A PDA Phone

Display: A large colour touch-sensitive screen capable of displaying 65K colours or more. The screen is also used for data input via a stylus.

Memory Slot: A memory slot lets you plug more memory into the phone. More storage will become a necessity once the mail in your Inbox, and your MP3 collection, outgrows the onboard memory.

Stylus: A stylus with a good grip will make handwriting recognition work better.

Buying Tips

- ✓ Globetrotters should look out for GSM PDA phones that operate on almost all GSM networks (800/1800/1900) across the world, often called tri-band.
- ✓ Check out the battery life before you decide to buy. Features such as bigger and brighter screens, Bluetooth, and Wi-Fi will drain more power and will reduce the effective talk and standby time.
- ✓ Bluetooth headsets are quite handy when driving or travelling since they let you attend a call without touching the phone.
- ✓ Look out for the functionalities that the phone offers. Play around with the interface; input some data; that should give you a clear idea of your comfort level with the phone.
- ✓ Before buying, check the synch features provided by the phone; look out for synching

with common applications such as Microsoft Outlook, Address Book, etc.

- ✓ Instead of buying expensive cables for synching, rely on Bluetooth adapters as they are compact and easy to carry around. Also, they can be connected to any machine without much fuss.
- ✓ With support for technologies such as GPRS, EDGE, etc, a proper smartphone can completely replace a laptop for checking e-mail and for Web browsing.
- ✓ Choose a PDA phone that suites your needs and lifestyle, and one that reflects your attitude.
- ✓ People with heavy usage patterns should invest in a high-capacity battery, or at least buy extra battery packs. Along with a battery pack, invest in a good compact travel charger.

OCR Software

The benefits of OCR become clearer after you start using it. Though it's generally considered a tool for enterprises, home users and small offices can also benefit from it.

To start with, you can scan all your business cards, OCR them and maintain a searchable archive of them—you can even use special software to import scanned business cards.

Utilities called form-fillers enable you to scan printed forms and fill them electronically. Storing these forms electronically eliminates the need to rewrite the entire form each time a mistake is made.

Also, you can fill in multiple forms simultaneously—a feature that comes in handy for railway reservation forms.

How Does OCR Work?

OCR is used to scan and recognise text on paper, or convert scanned pages saved as images to text. It analyses the raster image and creates an index of areas that resemble possible text fields.

The software then attempts to recognise text characters by comparing the shape of the scanned objects to a database of words categorised by different fonts or typefaces.

Thereafter, it groups individual characters and compares them with the words in the dictionary that is set to use a particular language.

This step is extremely crucial for accuracy in recognition. The more comprehensive the dictionary, the more accurate is the finished product. The OCR software marks certain words that it 'considers' inaccurate for you to correct them manually.

Finally, the OCR software uses the index it created to align the text fields as accurately as possible.

OCR software accuracy depends on scanner quality, paper used to print text, etc. The latest breed of OCR packages uses optimisation algorithms, neural networks and even AI concepts to get this done. Using pattern-recognition techniques,

Ready Reckoner	
 You Need	A cost-effective solution for home use
Look for	Support for documents with text and tables, the occasional newspaper and magazine clipping,
 You Need	A high-end software for professional usage
Look for	OCR support for fax, photocopies, typewritten documents, newspapers, magazines, etc

Net Spider
www.netspiderindia.com

the software tries to guess the character as a whole and look at all possibilities before arriving at a hypothesis. Some OCR packages have inbuilt tools that enable them to 'learn' from the changes you make to the output.

Field-specific recognition, wherein the scanned data is automatically stored in the appropriate field in, say, a database, will also be an integral part of the software in the near future.

Factors that affect OCR software accuracy

- ❑ Scanner quality
- ❑ Scan resolution
- ❑ Type of printed documents, whether laser printer outputs or photocopied
- ❑ Paper quality
- ❑ Fonts used in the text
- ❑ Linguistic complexities
- ❑ The dictionary used

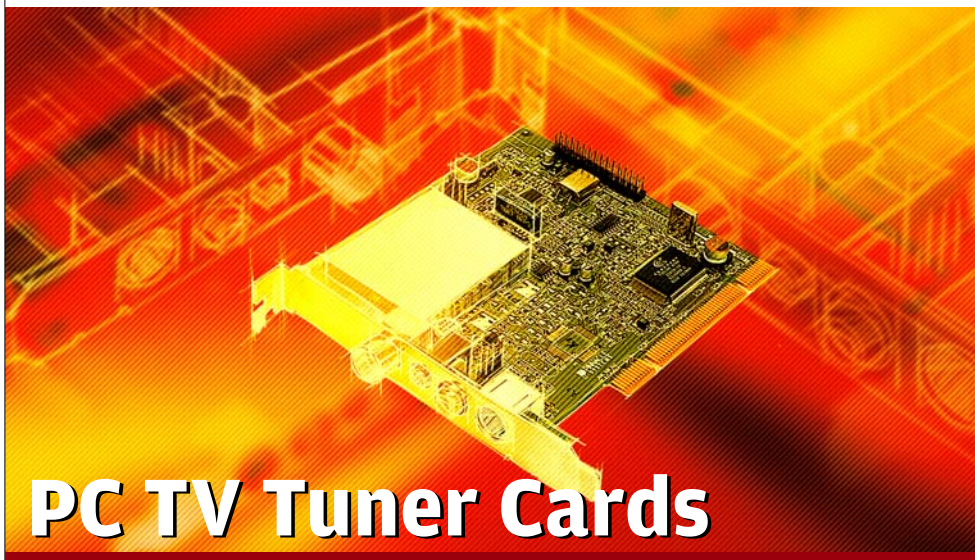
Do Remember

A document that is free of wrinkles, ears, smudges or creases yield more accurate results. Keep a sheet of white paper behind a document while OCRing it, especially when scanning newspapers, thin paper, etc. This helps eliminating smudges during scanning.

Buying Tips

- ✓ Batch-processing comes in handy when you have a large number of documents to scan. With this feature you need not sit in front of the scanner feeding one page at a time. Batch-processing does need support from hardware as well; you should have a scanner that has an Automatic Document Feeder (ADF).
- ✓ Check for the languages supported by the OCR package. Although we are not expecting to see Hindi or any other regional language any time soon.

- ✓ Certain OCR software comes with the learning mode feature that allows it to 'learn' from the corrections you make in the recognized document.
- ✓ Apart from saving scanned files as Word documents, look for a Save As option that lets you save them in HTML, PDF and Excel formats as well.
- ✓ The OCR software should have a provision to add specific fonts and letter types into its dictionary, in case it fails to pick them up while scanning your documents.



PC TV Tuner Cards

PC TV concepts have been popular right from the day they were introduced. The products available then offered very few features, and software support was limited to the bundled software.

However, as it stands today, the hardware has improved to an extent that there is a no difference between watching a program on TV or on a computer screen. On the software side, the bundled software offers complete PVR solutions, enabling most users to schedule recordings of their favourite programs in digital format for later viewing.

It's heartening to see industry big guns such as Microsoft and Intel backing the digital home concept with a slew of products that enhance the media-centric capabilities of your PC. Media-centric support down to the OS level means

tight integration of the entire package. TV tuner cards are an important component of the media-centric concept, and hence, in the near future, you may even be able to tune into high definition video on your desktop.

Components Of A TV Tuner Card

RF Tuner: This is the heart of the TV tuner card, and it helps in tuning to a particular TV station. The signal coming from your cable operator or antenna is supplied to the RF tuner.

ADC: The Analogue to Digital Converter, this piece of circuitry converts the analogue signals coming from your cable to digital signals that a computer can understand and process.

FM antenna connector: Generally seen on the back

Ready Reckoner	
 You Need	A TV tuner card with a basic feature set and does not cost too much
Look for	An entry-level TV tuner card that offers 100 channels, and provides a remote control
 You Need	A card with added features such as PVR functionality, FM tuner, video capture etc.
Look for	A TV tuner from the upper segment of the market; it will cost no more than Rs 3000
 You Need	Advanced capturing functionality from DV-Cams, VCR's etc
Look for	capturing capabilities, S-Video IN, S-Video Out, FireWire connectivity



panel of the card, you connect the provided FM antenna to this connector.

Cable TV Connector: You connect an incoming signal source, such as a cable TV cable, to this connector, which in turn feeds the RF tuner for synthesis.

IR Port: The IR receiver required for the remote control to operate is connected to this connector on the back panel.

S-Video and Composite Inputs: These ports are used for connecting other video devices such as a VCR or handycam, and come in handy for content capturing.

Audio connectors: These connectors are connected to the respective connectors of your sound card for audio playback.

Buying Tips

- ✓ You get two types of TV tuners—internal cards and external boxes. Internal cards are plugged into your system; external boxes can be used without switching on your PC.
- ✓ Internal cards are good when you want to capture live programs, which most external boxes do not allow.
- ✓ Casual gamers who want a TV tuner card can invest in the all-in-one solutions that have cropped up in recent times.
- ✓ If you listen to the radio, buy a TV tuner that has an inbuilt FM receiver.
- ✓ Make sure the device you buy offers features such as time shifting, scheduled recording and image capture; they are extremely useful when recording a program.
- ✓ Some high end TV tuners allow capturing of video from handycams and other analogue devices, which is converted to digital format. If you have a handycam, it would be advisable to invest in such a card.
- ✓ Before you buy a new TV tuner card, make sure it is compatible with your display card. Motherboards with older Savage 3D video controllers may require a driver update, or a new video card.
- ✓ If you plan to capture live programs, make sure your audio drivers are updated to the latest versions. Older versions might result in cracking of sound.

Projectors

Ultralights Or Personal Projectors are mainly targeted towards the consumer who is mobile and needs to give frequent presentations while on the road—thus the name ultralight. An ultra-sleek portable projector snugly fits in your laptop-carrying case along with other accessories that you need to carry around. The downside is that their brightness levels are not on par with the normal standalone projectors.

Conference Or Training Room Projectors

These are permanently fixed, heavy, and yet portable. An Over Head Projector (OHP) projector is one such example. A dying breed, these cost less and only serve transparencies that are either printed or written upon using special OHP transparency

markers. Thus, they are ideal for use in schools and training institutes.

Fixed Projectors

These are very expensive, versatile and can handle different resolutions and image sizes, easily project in large, bright rooms and offer superior quality over other projectors conveniently positioned out of the way of the audience.

Brightness

The brightness of a projector is usually measured in ANSI lumens. While deciding upon your purchase, do remember that a brightly-lit room will need an even brighter projector lamp. A projector with a specified brightness of around 400-500 lumens, suffices to beam up Excel images in a dark room. However, PowerPoint presenta-

Buying Tips

- ✓ Include the cost of a new lamp and the hours it runs to factor in the continuing cost per hour of the projector. Opt for a unit that offers a lamp life of at least 3,000 hours. Lesser lamp life will add to the overall cost of the projector.
- ✓ 1,024 x 768 is the resolution to look out for, to get sharp visuals and crisp text. 800 x 600 suffices for the 60-inch to 90-inch diagonal screen used just for presentations. 1,024 x 768 is ideal to screen films on a 120-inch diagonal screen.
- ✓ LCD projectors are divided into two categories: standard LCD and the polysilicon LCD projectors.
- ✓ Standard LCD projectors cost less and

have an LCD panel that controls the three primary colours. These projectors are being slowly phased out and replaced with the new polysilicon LCD and DLP projectors.

✓ Polysilicon LCD projectors offer better colour saturation since they control colours through three panels and are of a higher quality than standard LCD.

✓ DLP or Digital Light Processing projectors are the new breed of projectors which are available in the market. These projectors are considered to be of a better quality than standard LCD projectors and find themselves being used extensively in the high-end home theatre market as in projection TVs. Opt for it if you want a cinematic effect at home.

Ready Reckoner

 You Need	Business presentations in PowerPoint featuring small clip-arts, graphs, etc
Look for	SVGA or XGA resolution projector
 You Need	Design applications
Look for	XGA resolution projector
 You Need	Engineering applications, graphics applications and video-editing applications
Look for	SXGA/UXGA resolution projector

EPSON

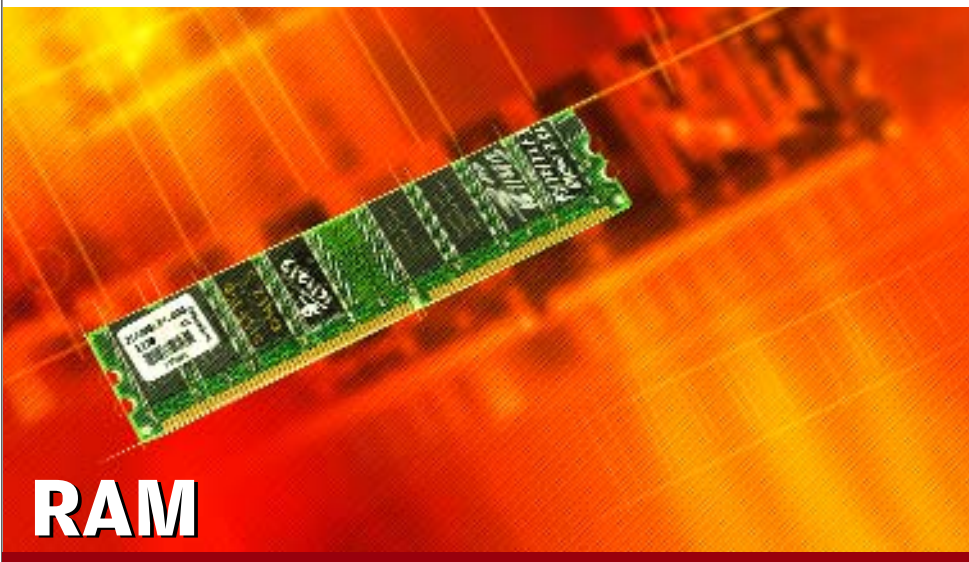
tions that involve graphics, clip-arts, etc will appear lifeless. For these, use a projector with a brightness of around 500-1,000 lumens.

Conference rooms need projector lamps rated at 1,000 to 2,000 lumens, while places using fixed projectors need lamps in the range of 2,500 to 10,000 lumens. Note that as brightness ratings increase, projector costs go up as well.

Check the ANSI lumens of each individual projector and not the product line. This is because some manufacturers specify a generic lumens specification for the whole product line.

Pricing

Projectors do not come cheap. Starting at Rs 50,000, they shoot up to around Rs 5 crore. As an example of prices, an SVGA resolution projector will cost you around Rs 1,79,000.



RAM

More often than not, the focus in RAM is on speed, and DDR2 running at as high as 667 MHz is already out there. The DIMM has not seen much change. DDR, however is using FBGA (Fine Ball Grid Array) instead of TSOP II (Thin Small-Outline Package). All in all, the DRAM module isn't scheduled for a massive change in the desktop segment.

However, the server segment witnesses an ever-increasing demand for RAM in a form factor that takes up very little physical space. Tape Carrier Packaging (TCP), Elevated Package Over CSP (EPOC) and Foldable Electronic Memory Module Assembly (FEMMA) are meant to address this problem.

The evolution of RAM modules from the slow EDO-RAMs to SDRAM, and now DDR-RAM, has always strived to push

the speed limit further. This will continue to be a trend in the future. With the advent of 64-bit processors that require ECC memory, the market will witness another major change. These ECC memory modules, which were only used in servers thus far, will eventually trickle down to the desktop arena.

RAM Demystified

Address Line: This carries either a 0 or a 1 signal to the transistors. There are two address lines for a series of transistors. If one address line is carrying a "1" signal, the other address line carries a "0" signal.

Data line: This carries the cumulative data signal from the RAM to the system bus.

Capacitor: This holds the information—either a 0 or a 1—depending on whether it is in a charged or a discharged state.



Buying Tips

- ✓ **MINIMUM RAM:** Most operating systems such as Microsoft Windows XP need at least 256 MB of RAM to run as intended. Add to that the requirements of applications, and you'll see that 512 MB of RAM is the ideal amount to get.
- ✓ **DDR OR SD RAM:** Given a choice, always opt for DDR memory. Performance is superior, and the SD variant is now almost obsolete.
- ✓ **FREQUENCY:** The frequency of the RAM has to match the one supported by the motherboard. Buy the correct speed RAM as specified in your motherboard manual—it depends on the chipset the motherboard uses.
- ✓ **SINGLE OR MULTIPLE:** As far as possible, use a single RAM module. The advantages are manifold. First, a single stick costs less than multiple

modules put together. Secondly, there won't be any compatibility issues, and you will still have a vacant slot for a further upgrade.

- ✓ If you are buying a new motherboard that's based on the latest chipsets (nForce3, 915, KT800 etc.), opt for 400 MHz memory modules, which are currently the fastest available.
- ✓ If you are buying two RAM modules for gaining the dual-channel advantage, make sure they are matched pairs—that is, that their frequency, timing and other parameters are matched by the memory manufacturer
- ✓ Always buy branded RAM modules sold in proper packaging. Lifetime warranties (generally extending to a 5-year period) are also offered, albeit at a price.

Ready Reckoner

	To upgrade RAM on an older board that has no support for DDR-RAM
You Need	
Look for	SDRAM that preferably has a frequency of 133 MHz
	A cost-effective solution
You Need	
Look for	DDR-RAM that has a frequency in the range of 266 MHz to 333 MHz
	A performer—cost no bar
You Need	
Look for	400 MHz DDR-RAM



Do Remember

- ❑ Enable the lowest CAS setting for your RAM in the BIOS. Also, set it to use the highest bus speed setting it supports.
- ❑ Check the RAM modules for compatibility with your motherboard. The list of validated memory modules can be found on the motherboard manufacturers Web site.
- ❑ Always buy genuine memory modules to avoid compatibility issues. These have holograms from their respective manufacturers on them.
- ❑ Consider buying low latency memory modules, if you intend to over-clock the memory modules for your gaming rig.
- ❑ When buying costly memory modules such as Kingston, Corsair etc, make sure they are covered by life-time warranty.
- ❑ Presently there are different memory modules available for Pentium III and P4 motherboards, hence make sure you buy the right one as you upgrade.
- ❑ Memory modules with heat spreader should be considered when building high end rig, since they help in dissipating the heat.

Speakers

Expect to see a slew of speakers that take sound to a new high. Multi-channel speakers have already become a norm. 7.1 channel sound cards have been developed to channelise sound in the right manner.

Though not yet a craze, wireless speakers are bound to attract the audiophile because of the flexibility and freedom they offer. Speakers that automatically calibrate and adjust sound quality are also on the cards.

Do Remember

Place the speakers at, or slightly above, ear level for opti-

mum effect. You can place the subwoofer anywhere. Keeps the subwoofer facing a wall, preferably in a corner of the room.

If the surround-sound channels are too faint, 'toe-in' the surround speakers so that they point towards the listener. Conversely, if they are too prominent, place them facing the wall. This helps disperse the sound from the rear channels, resulting in a more enveloping effect.

If you use an adapter that did not come with your speakers, make sure that the ratings of the amplifier (in RMS

Buying Tips

- ✓ **POWER RATING:** Most speaker systems deceptively specify their power rating in Peak Music Power Output (PMPO). Always go by the RMS power: it is the true technical measure of the speaker's capability to handle continuous power. A 40-watt RMS rating for a surround sound speaker system is decent enough.
- ✓ **FREQUENCY RESPONSE:** If your speaker system has a frequency range that's limited at the upper end to, say, 16 KHz, the higher treble notes don't get noticed, especially when playing classical music. Similarly, if your speakers can't go below 50 Hz, they won't be able to render that deep bass from drums, and those thunderous explosions that you come across in movies.
- ✓ **STANDS:** You won't need stands for a 2.1 speaker system that's primarily meant for music playback. You would probably place them right on your desk. However, for a 4.1 or 5.1 speaker system, ensure that all the satellites have a stand or a base attached. This is useful if you want to place them standing on the floor at ear-level, for proper surround sound imaging.

- ✓ **CONTROLS:** Speakers with inline volume controls give you the freedom to control the master speaker volume without going to the trouble of accessing the subwoofer, where the volume controls are generally placed.
- ✓ **AUDIO INPUTS:** If you have a 2.1 stereo speaker system, you only need standard analogue left and right channels. However, in the case of a four-point surround sound system, you would need to look for four separate channels of analogue audio inputs to your speaker system. This would be in the form of two 3.5 mm stereo inputs (left and right for front, and left and right for rear), or four separate RCA inputs. Watch out for pseudo-four channel speakers that are actually just stereo, with two speakers for each side. In the case of 5.1 speakers, you would either need to have six separate RCA inputs for the discrete AC-3 channels, if the signal is already being split by an external decoder, or you would need a DIN connector that is fed by the digital output of your sound card, in order to have true Dolby Digital rendering on your surround sound system.

Ready Reckoner

 You Need	A cost-effective solution
Look for	A 4.1 speaker system that is well-suited for DVD playback
 You Need	Speakers to play games
Look for	A 5.1 speaker system that performs very well, especially when reproducing game sound effects
 You Need	A home theatre system
Look for	A 7.1 speaker system with a large and powerful subwoofer, and punchy satellites

CREATIVE®

wattage) and adapter (in Ohms) match.

Before you buy a new speaker set make sure you have the required space to place them properly, else you won't be able to reproduce perfect sound effects.

Before investing in a 4.1 or 5.1 speaker makes sure you have the right hardware to get the maximum out of the sound box.

On-board sound hardware though good enough lacks the fidelity and hence coupling them with good speaker ain't going to do any justice. If you are an audiophile make sure you get a decent hardware to drive your speakers.

While extending speaker wires refer to the manufacturers manual for any source of signal attenuation- signal loss, due to impedance mismatching etc.

Prefer a speaker with wireless remote over wired remotes for the convenience they offer.

UPS—Home

Future

The next trend in the Indian UPS industry should see a major shift towards reliable and intelligent products. UPSes are as important for mission-critical applications as any other element, and reliability is a major issue.

At the same time, intelligent products will be able to maximise power availability for the equipment that needs it most, shutting down non-necessary equipment at different stages of battery use. Running costs will also be a driving factor.

Do Remember

❑ Decide on a UPS based on the total power consumed by your equipment. If it's expressed in amps, multiply that by 230 V—the nominal line voltage. If the power drawn is stated in watts, multiply it by a factor of 1.3 to 1.4 for the VA load. For example,

a 250-watt power supply (x 1.4) equals a 350 VA load. Considering a measure of safety, 500 VA is enough for most PCs.

❑ The VA rating of a UPS is a measure of the amount of power it can provide—usually for about 10 to 12 minutes. Therefore, if a 500 VA UPS is loaded with equipment that draws 500 VA of power, it will last for about 10 minutes. If the load is halved to 250 VA, the backup time will increase to about 16 to 18 minutes. Of course, this is assuming that the battery is fully charged and functional.

❑ It is advisable to charge and discharge the UPS battery completely once a month to prolong battery life.

❑ A typical PC power supply is rated at 300 W which is the peak that it can deliver, however under normal load it is seldom reached, hence a 500VA UPS is



Buying Tips

✓ **INPUT VOLTAGE RANGE:** This is the range beyond which the UPS delivers power through its battery. The greater the range the UPS can handle, the more versatile its power protection. Look for a voltage range between 150 and 270 V.

✓ **VA-RATING:** This is the power rating that can be provided by the UPS. As a rule of thumb, a 1 GHz processor-based system with a 20 GB hard disk, a CD-ROM drive and a 17-inch colour monitor would require a 500 VA UPS.

✓ **BACKUP TIME:** This is the specified time for which the UPS can provide power from its battery for a given load. Look for a backup time of at least 10 minutes at maximum load.

✓ **SWITCHING OR TRANSFER TIME:** This is the time taken by the UPS to switch from normal delivery power mode to battery mode on detecting a power failure. Ideally, look for transfer times under 5 milliseconds.

✓ **ALARMS AND CONNECTIVITY:** Most UPS systems have front panel LEDs that indicate the battery level and the condition of the input and output power. This comes in useful especially during power failures.

✓ **CHARGING TIME:** This is the time taken to charge the UPS batteries from the completely drained state to the fully charged condition. The charging time should be between 4 and 6 hours.

Ready Reckoner



You Need

To provide power to a low or medium configuration consumer PC

Look for

An offline or line-interactive UPS with a 450 VA to 650 VA rating, and a backup time of at least 10 minutes



You Need

To provide power to a PC using high-end components, or a server

Look for

1 KVA rating, 10-minute backup, support for remote monitoring, alarms for power anomalies



enough for normal users. Gamers who use higher capacity power supplies may look for 700 VA and above UPS.

❑ All UPS vendors have good service network and it is just a call away. Make sure you have their direct contact number, so in case of emergency you can call them up for quick replacement of dead batteries etc.

3. One very important feature that you should lookout in an UPS is AVR (Automatic Voltage Regulation). This circuit helps in conditioning the incoming power supply and hence protects the PC against voltage fluctuations.

❑ Check out the software that UPS vendors provide. Some software are smart enough to save your current work and then proceed to a proper shutdown on the PC.

❑ If you have a small office with no more than five PCs it is advisable to go for a single UPS rather than one for each PC. You should contact your electrician for the necessary procedures.

UPS Batteries

The future will bring a complete change in the battery segment. The smart batteries of the future will have onboard circuitry that will communicate with the PC and its charger and share information like number of time battery had been charged, its chemistry, voltage, packaging and so on. This will not only increase the life of the battery in future but also charge it faster.

Facts

❑ The batteries in the UPS are Sealed Lead Acid (SLA) that is used in case of a power outage. If a battery is inactive for a long period of time a chemical reaction, known as sulfation (formation of lead sulphate crystal that stalls flow of current) occurs. This can damage battery plates and leave it useless.

❑ Surge suppresser is an inexpensive way of protection against surge and spikes that can destroy UPS circuit and PC as well. Connect your UPS in series with spike guard.

❑ Sealed Lead Acid batteries contain live electrical current

and can be extremely dangerous—never touch battery terminals directly or with metal objects!

❑ To prolong the battery life, it is advisable to charge and discharge the battery completely once a month—for this run the accessories of your PC such as your printers and speakers from your UPS till they stop and then again charge the battery.

❑ Most UPS use SLA batteries and over time they go dead leaving you just one option—to replace them.

❑ All SLA batteries have sulfuric acid and Lead, both these agents can lead to environmental pollution if discarded in the wrong way. Sulphuric acid is highly corrosive, whereas Lead is known to affect the nervous system in human beings.

Do Remember

❑ Return your old battery to the vendor from whom you bought the UPS, they will recycle it in the most appropriate way. Please don't throw such batteries along with your garbage.

❑ Do not store these batteries in

Buying Tips

✓ The backup time and the rating of the battery are directly proportional—larger the VA rating more time your PC will work on this battery during power cuts.

✓ Refer your UPS manual or check the manufactures site to find the battery rating your UPS supports—buy a battery with maximum possible rating which will give enough time to safely close documents and shut

down your computer.

✓ The time required for charging the battery—the charging time should be small, battery should get charged within 4-5 Hrs.

✓ When going to buy a battery the VA rating, Terminal type supported for your previous battery and dimension should be noted, which help in choosing the supported battery by your UPS.

Ready Reckoner



You Need

A replacement for your old battery that was powering one PC

Look for

A battery with a rating of 500VA



You Need

A battery for short time power backup of around 20 minutes atleast

Look for

A battery with a rating above 600VA.



You Need

A battery that can provide sufficient power to PC as well as peripherals

Look for

A battery with a rating above 1KVA



extreme hot conditions or incinerate them.

❑ When you buy a new battery make sure it was not stored for longer than six months.

❑ Do not short circuit the two poles of a battery, it cause severe internal damage to the battery.

❑ When a new battery is installed, give it enough time to charge to its full level before putting it on any sort of load. Also most vendors ask for three to four cycles of complete charging and rapid discharging of the battery before putting them on any load, such procedure gets internal chemistry going smoothly.

❑ One important point to remember about any batteries is never mix new and old batteries. This will lead to more power to be drawn from the new battery reducing its life.

Web Cams

With the Internet getting faster and cheaper, Web cams will provide better voice and video capture facility and therefore talking to your relatives and friends is bound to get even more realistic. The same camera will work automatically—no human assistance will be required.

Facts

Web cams need good Internet speeds to work well. You will need anything between 10 to 15 Kbps, while the average Internet speeds, especially using dial-up, available to the home users are far below this, so the webcam will deliver choppy video i.e. the frame rate will be very poor.

Compare the features of the webcams before buying, take into the consideration purpose of your use resource that are available to you and then make the decision.

Like speed and image quality, a webcam is only good if you can use the image you collect. If you use the Web cam for long hours, or outside in a dim light, you must select a camera that is capable of operating in such demand-

ing situations. Generally speaking if you are in a dimly lit area you will require a camera capable of operating around 1 lux.

Lens: Lens is heart of the Web cam. Lens acts as an eye that focuses on the scene. The area coverage and focus distance depends on the lens implementation. Most entry level webcams are fixed focus.

CMOS: CMOS is the sensor that turns the light information in to the digital signal. It then forward it to the PC where it is represented as an image.

Manual Focus: Some Web cams allows for manually focus on the subject within the allowed perimeter. For the rest you will have to do the moving part

Motion Capture: This is the feature of the software. With this feature enabled Web cam will take a snapshot if any thing moves in the frame.

Do Remember

❑ As far as possible try to avoid the cheap Taiwanese and Chinese brands as they can hardly match the quality provided by branded Web cams.

Buying Tips

- ✓ Get a Web cam that captures video with at least 30 FPS if you are getting frames below this then your video could be too slow jerky or choppy
- ✓ Try a Web cam that can adjust with light condition; good brands to look at are Creative Labs, Logitech, IBM. To ensure the video is not too dark or washed out.
- ✓ Consider the various standards H.320, H.263 and H.261 standards for superb

connectivity if you are going to use it for video conferencing. A Web cam with a lower resolution works on less bandwidth and is a better option to use it when chatting with your friends and relatives.

- ✓ The software which comes with the Web cam is also important as it can provide you with better tweaking features and capture pictures for you. Also look for video conferencing over LAN and WAN support.

Ready Reckoner



You Need

VGA web cam for internet chatting and recording small clips occasionally.

Look for

Entry-level USB web cams



You Need

Web cam that supports over 800x600 resolutions with microphone built in to it. It should also be able to click images.

Look for

Web cam with hardware support of 800x600 pixels with some level of zoom control



❑ Good Web cams are less susceptible to light variation and hence produce better quality video in all lighting conditions.

❑ Before you buy a Web cam check the true resolution it offers and not the interpolated that is often mentioned in bold letters. Higher the native resolution better the quality of the video.

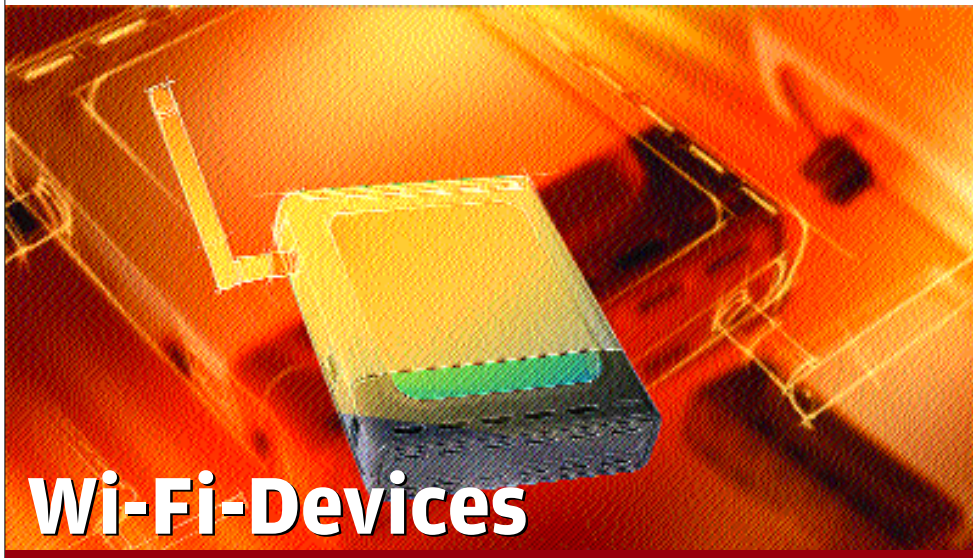
❑ Some new generation Web cams allow tilt, pan and zooming features; they come handy if you plan to use it as a surveillance device.

❑ When buying Web cams for you laptops pay careful attention to the clamping mechanism. Some Web cams have flimsy clamps that break easily.

❑ Some manufacturers have launched Web cams in credit card format, these cameras can double as digital cameras reproducing low quality photographs—just good enough for sending over mail.

❑ Before you plan to use a Web cam for video-chatting ensure that you have enough bandwidth.

❑ If possible checkout the software provided with the web-camera, they make all the difference when it comes to hogging system resources.



Wi-Fi-Devices

802.11g is already here pumping 54 Mbps of data which is higher than 11 Mbps offered by 802.11b. But soon 54 Mbps data transfer will fall short of expectation. Therefore IEEE has already started work on 108 Mbps and 300 Mbps.

Although official names haven't been given to these standards but tentatively will be called 802.11n. 802.11i is also under development but this standard will address security issues with the WPA -there won't be any speed boost with this standard.

802.11h and 802.11j are another standards under scrutiny, which will address

regional frequency-regulation requirements of Europe and Japan respectively.

Do Remember

❑ If the number of users is more just single Access point is not going to be enough. In such scenario more than one access point will have to be used in bridge mode.

❑ Site survey is important especially for offices and multi-storey homes before hooking up the access point and placing the Wi-Fi enabled PC or laptop. Check for the spot where the signal strength is best and place the devices accordingly.

❑ Thick curtains and walls can be a major block to the signal.



Buying Tips

✓ If you are planning to connect just two desktop PCs at home or office, than just buy to PCI based Wi-Fi cards and run them on Ad-Hoc basis.

✓ If more than two systems are to a wired network (Internet, or existing LAN) needs to be accessed by the wirelessly connected PCs, be connected wirelessly than an Access Point is required.

✓ Depending on the type of usage and number of users, select between 802.11b and 802.11g standards. The latter has faster theoretical transfer rate of 54 Mbps compared to 11Mbps of 802.11b standard.

✓ Buy both Access point and card from same manufacturer as far as possible for full compatibility. Most manufacturers are offering feature of faster data transfer than 802.11b supports with their 802.11b compliant hardware. But higher data transfer will only work between their own Access point and card, if card from another vendor is used, it will work at

lower transfer rates.

✓ Check the build quality of the Antenna. Since it can be rotated and in most models can be replaced, good build quality is imperative. Also prefer a PCI card that has an optional antenna connected with the cable. This allows the flexibility of placing the antenna at the convenient location for best signal reception.

✓ Software that let you set IP and other related settings need to be simple and intuitive. Check out the software and go for the one that's simple to use and doesn't involve long learning curve.

✓ Access point should have the slots for wall mount and rubber pegs for proper placement on the desk. It should also be aesthetically pleasing and light in weight.

✓ Check out the security option supported by the Wi-Fi hardware. It should support both WEP (Wired Equivalent Privacy) and WPA (Wi-Fi Protected Access). WPA is the improvement over WEP, and therefore, is more secure.

Ready Reckoner



You Need

Home networking of two or three PCs for Internet or file sharing

Look for

3 Wi-Fi cards working in Ad-Hoc basis



You Need

At least 5 PC with internet sharing, file sharing that contains large files like images and so on.

Look for

An Access-point running in infrastructure mode.



You Need

10 to 15 PCs spread over big area.

Look for

More than one Access point in Bridge mode with rest of the card connecting to either of the access points



Although line of site is not necessary for communication between two Wi-Fi devices—but lesser the hindrance better the performance.

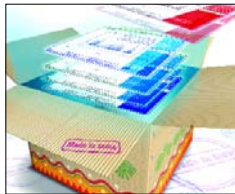
❑ While selecting Wi-Fi devices make sure you products support both the WEP and WPA security protocol for a safer and secure wireless network.

❑ If you are on a shoe string budget look out for the those access points that have in-built firewall, three-four LAN ports etc. They are generally classified as router access points.

❑ Since there are lot of issues in setting up Wi-Fi than in standard LAN, Wi-Fi device vendors offer facilities, where they survey you site for proper installation, bank on such surveys for effective and scientific installation.



160 Know About Credit Cards



162 Indian Office Suites



166 E-learning Goes Corporate

Digital Business

How Technology Can Help Your Organisation

Case Study

Weapons of Mass Promotion

What does a brand manager do when no one clicks on banner ads any more? Force people to view ads by promising entry into a contest, of course... what's more, the consumer willingly does so!

Ram Mohan Rao

How do you like a pop-up ad being shoved in your face? Or a banner ad that keeps flashing on a Web page as you try to read what you're reading? Of course you don't. Plus, there is a good chance that you already have a pop-up blocker to prevent the annoyance in the first place.

Banner ads, pop-ups and the like were once major revenue generators for Web sites. That is not to say that they are not now, but the scene has changed, and the efficacy of that advertising medium is under question. Seth Godin, former Head of Direct Marketing at Yahoo.com and author of *Permission Marketing*, says: "Marketing by interrupting people isn't cost-effective any more. You can't afford to seek out people and send them unwanted marketing

messages, in large groups, and hope that some will send you money."

Interruptive advertising, then, is on its way out. Banner ads are declining; pops-ups are being removed; spam is being restricted; telemarketing is being controlled; and TV ads are being zapped. That may sound like good news for the rest of us, but for the advertising industry—rather, the interruptive-advertising industry—it's no laughing matter.

The new mantra is interactive marketing, of which Alok Kejriwal, CEO of Contests2win.com (C2W), has been a pioneer in India. C2W, while marketing products, engages the customer in a friendly way; it's a form of opt-in advertising. C2W believes that interactive marketing will soon replace interruptive marketing. In this model, consumers willingly interact with brands by spending their quality time being entertained, having fun, winning,



Imaging Atul Deshmukh, Jayan Narayanan

Marketing by interrupting people isn't cost-effective any more.

Seth Godin

Former Head of Direct Marketing, Yahoo.com

and in the process, learning more about a brand.

Contests in newspapers and magazines are a tried and tested formula to promote brands, but online contest-based consumer promotions are making waves in the world of advertising and promotions. Such contests are interactive, and are a major draw for potential consumers. For brand owners, it's a wonderful medium for an extensive and controlled brand awareness program.

C2W has a proven model of interactive marketing through entertaining contests and games that draw consumers willingly to interact with brands. Consumers spend quality time with a brand, enjoying themselves in the process, and the brand gets an unadulterated, uninterrupted, one-on-one interaction with its potential consumers.

Some of C2W's largest clients are Intel, MasterCard, Philips, Pepsi, Sony, Coca-Cola, Domino's Pizza, and Lufthansa, amongst several others.

How It Began, How It Matured

Agencyfaqs.com—one of India's largest B2B sites—reports that the idea of online contests clicked in the mind of a 29-year-old Kejriwal, who himself was crazy about contests. When he decided to start a business, he decided to do what he loved most. Kejriwal bid good-bye to his family's established hosiery business and began the journey of an online entrepreneur.

C2W was set in motion in August 1998, with an investment of Rs 9.5 lakhs from his personal savings. The rest was funded by venture capitalists at later stages. An avid competition freak, Kejriwal hated using competition postcards. Looking for an alternative, he happened to bump into the idea



Some of C2W's major clients



The Revenue Model

C2W has a simple, yet strong revenue model. It charges between Rs 1.5 and 5 lakh per month for a campaign, depending on the nature of the campaign. Each campaign lasts for a month and is refreshed the next month. The total time period offered to a brand is six months. The brand visibility in these types of contest sites is much higher than in a conventional medium, explains Kejriwal. For example, a consumer spends four to five minutes interacting with the brand on a one to one basis in an "unadulterated environment." Such interaction costs Rs 1-2 per contact for 240 to 300 seconds.

of starting an electronic post office of his own.

C2W started off without a revenue model. This was done keeping this in mind the fact that brand owners such as Hindustan Lever did not have an Internet presence those days. It also seemed logical, because prospective clients would, naturally, be wary of paying for an untested and untried concept.

After making "an average of 200 calls a day for three months with a success rate of getting only two brand owners over the phone," C2W got its first break with Gunendar Kapur at Hindustan Lever. He agreed to a contest for Kissan Annapurna Salt, which was branded the "Bright Kids" contest.

C2W started with a media barter model where it offered online contests for free, in lieu of C2W branding in all forms of communication—print ads, television supers, and MTV vee-jays cajoling viewers to "visit them at c2w.com!". This gave C2W the advantage of getting free promotion over all leading media properties in India.

After bagging the HLL contract, the greatest concern for C2W was, naturally, to bring in visitors. The Internet was in a nascent stage when Kejriwal started out, and what spurred him on was the knowledge that everyone, in general, loves to win prizes. The imperative was to make C2W contests so much fun that even fence sitters—those who would not participate in the "certain knowledge" that they would never win a prize—would become avid contestants just for the thrill.

"The idea is to help consumers and participants get out of the stupid slogan contests and actually participate in interactive campaigns. We have successfully created a new community of "winnaholics," and this community comprises not just die-hard contest types, but also housewives, lawyers, merchants and investment bankers, stockbrokers, and even a few retired people! C2W has a registered user base of 9,68,000 Indian members, with 32,000 new unique members joining every month," claims Kejriwal.

After establishing its reputation as a successful model for online contests over two years, revenues started trickling in for C2W. By the end of the first quarter of year 2000-01, that is, in

L'Oréal and Colgate Palmolive

L'Oréal needed to promote its Maybelline Copper Collection. The newly launched Copper Collection was to be introduced to young female consumers in an innovative manner that ensured that its different shades were clearly communicated to the target audience.

What C2W did was an online promotion that immersed consumers in a game involving Copper shades as clues in a conversation. The prize offered was L'Oréal gift hampers.

The campaign introduced each category of the new product and generated brand awareness to the core target audience in an interactive format. Responses lasted for three minutes each, ensuring high quality time spent with the promotion.

Colgate Palmolive wanted to promote its Fresh Energy Gel—they wanted to create high-impact online visibility for the Gel, which was a newly launched variant.

C2W's solution was a unique and innovative product—a "soap opera" on the Internet called sit.com. It was a first-of-its-kind branded solution, and generated huge publicity and "viral pull." This was one of the most successful promotions on C2W—it ran for nine months, while typically each brand promotion lasts a month; and it aggregated a huge fan following in the C2W community. C2W claims that consumers *actually became loyal* to the branded solution, and regularly came back for more.

Viral Marketing: Garnier Fructis And Coca-Cola

When Garnier launched its Fructis shampoo, it was specifically targeted at the young upwardly-mobile consumer who had a penchant for a great brand, bundled with some obvious benefits. In the case of Fructis, the benefit was “five times stronger hair.”

The challenge was to present this benefit to consumers online and make them market the idea further. The result was the “World’s Longest and Strongest Braid” competition, created by C2W. The idea was simple but extremely powerful. Consumers could register on the site using their e-mail and create a Knot on the Fructis Braid, as their entry into the contest. They were instantly allotted a position number and the knot creation was actually visually presented in front of them. As a next step, the consumers were expected to “invite” their friends to visit the braid and add to their “visitor score.” The prize was based on the largest tribe members that a consumer could build. A record 76,000 consumers created their own knot on the braid and forwarded the link to more than 82,000 of their friends!

Coca-Cola India took the viral marketing idea to the wireless platform, driven by its regular TV advertising. During the launch of Vanilla Coke, consumers were prompted to send “WAKAW” to 8858. Immediately after that, consumers received a special message with a code, which they could forward to their friends. Once the friend received the message and actually sent the code to 8558, the original sender automatically entered into the lucky pool. However, the clever insight was that even the recipient wanted to win, and they started the chain messaging all over again. The promotion generated a whopping 2.26+ lakh SMSes!

June 2000, C2W’s revenues stood at Rs 83 lakh, with profits of Rs 7 lakh. In the last financial year, C2W did business of \$1.5 million, establishing itself as one of the more profitable online ventures.

How It Works

The concept of C2W is based on a simple idea—creating a window of interaction between consumers and the brand owner and then monetising their services. Take the example of Coke’s *Thanda Zone*. Unlike conventional TV advertisements, the *Thanda Zone* contest actually offers consumers an opportunity to interact and play with Hindi-movie personality and Coca-Cola ambassador Aamir Khan. The Zone comprises three contests built around the *Tapori*, *Punjabi* and *Bihari* ads of Coke, which made the slogan “*Thanda matlab Coca-Cola*” hot property today.

There Were Challenges, Too!

Kejriwal says that markets such as India and China are challenging. For instance, in India, Internet penetration is less than two per cent; India’s total interactive advertising market is less than 0.25 per cent of the total ad market; and the total ad market is less than two per cent of the GDP. In this space, C2W’s share of the Indian online ad market is 20 per cent.

In neighbouring China, which is a gigantic mobile market, Kejriwal says that barriers to entry are high; local partnerships are tough; and that creating media pull is expensive. Despite all this, C2W pioneered interactive mobile marketing in China. They attracted investment from Softbank Japan and Siemens AG, and have delivered 60 solutions including



The idea is to help consumers and participants get out of the stupid slogan contests and actually participate in interactive campaigns

Alok Kejriwal
CEO, C2W

the world’s largest wireless brand campaign for Coca-Cola. C2W has also delivered many first-of-its-kind mobile solutions.

The road ahead for C2W involves taking the C2W model into mature markets that offer scale. C2W will create interactive plug-and-play applications for brands that are hosted on different media. Simply put, these “advergaming” can be offered to the same brands in developed markets to be “positioned” on their Web sites and/or portals. C2W also partners with portals to offer their products as a new offering for brands.

C2W is ambitious—its next few destinations are Thailand, Philippines and the UAE. C2W is in the process of launching a Web site in Thailand, where it plans to go with a franchisee-based business model. C2W will get a royalty for the brand, and will also have a share of the revenue.

Agencyfaqs.com asked Kejriwal this: despite being in an unconventional business in a new medium, what is that one factor that has made C2W a profitable venture today? It’s cost control, says Kejriwal, who uses a Delhi cell phone number whenever he is there, instead of using a roaming Mumbai number. No wonder the company, which started off as a one-man show, has 70 members on board today and a zero employee turnover rate.

Viral Marketing

The last time you received an SMS joke or a personal e-mail was probably just a couple of hours ago. Did you ask someone to send you that SMS or mail? Was it a planned communication? Definitely not, says Kejriwal. It is what the world does so naturally today—sending messages the viral way.

On a daily basis, millions of e-mails and SMSes are whizzing across the world—all forwards by friends, enemies, relatives and lovers crammed with jokes, advice, prayers, images and photos. Consumers have become “information relayers,” which reminds Kejriwal of the tribes in the *Phantom* series of comic books, who would pass messages across the jungle using their tom-toms. And brand owners are taking note of this with considerable delight.

It is a brand owner’s dream to introduce a message to a set of consumers and then have them work at popularising that message further by telling their friends and relatives. And that’s exactly what they are achieving using viral brand campaigns on the Internet and on the mobile.

Pulling You In—The Sweet Way

At the end of the day, it’s about what works. Intrusive or interruptive marketing is on its way out, as Kejriwal rightly points out. And when you have something like the contests on C2W, the customer—that is, you—is willingly pulled in. The brand promoter gets his ad across to you, and you view an ad so you get entered into a contest. You might even win. Everybody’s happy. ☐

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How Safe Is



Your Credit Card Explained

1. The credit card number can be broken into three parts:
 - a. System Number (Visa = 4; Mastercard = 5; etc.)
 - b. Bank Number (Bank Code)
 - c. Your Account number
 - d. The Check Code
2. The expiry date and name are also mentioned on the front
3. The Magnetic strip on the back contains information on your credit limit, bank details, ATM pin code, etc.
4. Some cards have a 3 or 4 digit verification PIN code on the reverse
5. The Signature strip helps prevent an unauthorised person from using your credit card offline.

Security

Most people do not realise that they themselves are the weakest link in the robust security chain of online transactions. Hackers cannot break gateway and bank level encryption—most will not even try. Your computer, however, might be a sitting duck, if you do not take the necessary precautions.

Threats

Worms / Trojans: You may be infected by worms or trojans. These email information from your computer to their creators—including credit card details.

Keyloggers: These log everything you type and e-mail it to a hacker

Spyware: Retrieves information from your computer and sends it to malicious sites

Solutions

To secure your computer, you should make sure you have a good anti-virus solution in place, such as Norton Antivirus, McAfee, PC-Cillin, etc. You should also install a good adware and spyware cleaner, such as AdAware or Spybot Search & Destroy. Finally, make sure you have all the latest critical updates for your OS

Your Credit Card

Payment Gateway

This is the Web server you connect to, online, when you use your credit card. Payment gateways have high security and low risks. They are protected on multiple layers, by firewalls and at least 128-bit encryption

Bank Server

Bank servers only talk to pre-defined and pre-approved payment gateways. They are well guarded with at least 256-bit encryption, robust firewalls and constant monitoring

Authentication

The payment gateway connects to a bank server to authenticate your transaction. It sends across an authentication request, asking the bank whether the purchase you are trying to make falls within your credit limit, and whether the card information you entered matches the bank's database records



Encryption

Any online transaction will need you to enter confidential information about your credit card. This information, in the wrong hands, could send you to the cleaners!

For an online transaction to be secure, encryption is a must. All credit card transactions that are conducted between your computer, the payment gateway and the bank server, use a mixture of public and symmetric key encryption.

Symmetric Key

Here, all computers have their own secret private keys, and two computers need to know each other's keys before they can communicate

Public Key

Here, a computer sends across data packets encrypted with its private key, and then this key is encrypted with the public key of the computer it is sending the data to. The destination computer then decrypts the packets it receives using, first, the public key, and then the private key of the sender

Buying Online

The most important information that Web sites require, such as Name, Card Expiry date and Card number, are already listed on your credit card

Google Image Search - Microsoft Internet Explorer

Address: http://www.google.co.in/img?hl=en&tab=vidg

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites Media History Mail Print Edit Documents

Billing Details

NOTE: For credit card verification, please enter the billing address as it appears on your credit card statement

Name

Debit / Credit Card Billing Address

Zip Code

Country

Telephone Number

Email Address

Other Notes or Instructions (optional)

Pay By Credit Card | American Express / MasterCard / Visa

Card Type

Card Number

Card Verification Number

Expiry Date

Card Issuer Bank Name

Pay By Credit Card | Diners Club Card / Citibank E-card

Please select the card type by which you wish to pay. You will be prompted for your card details on the subsequent page.

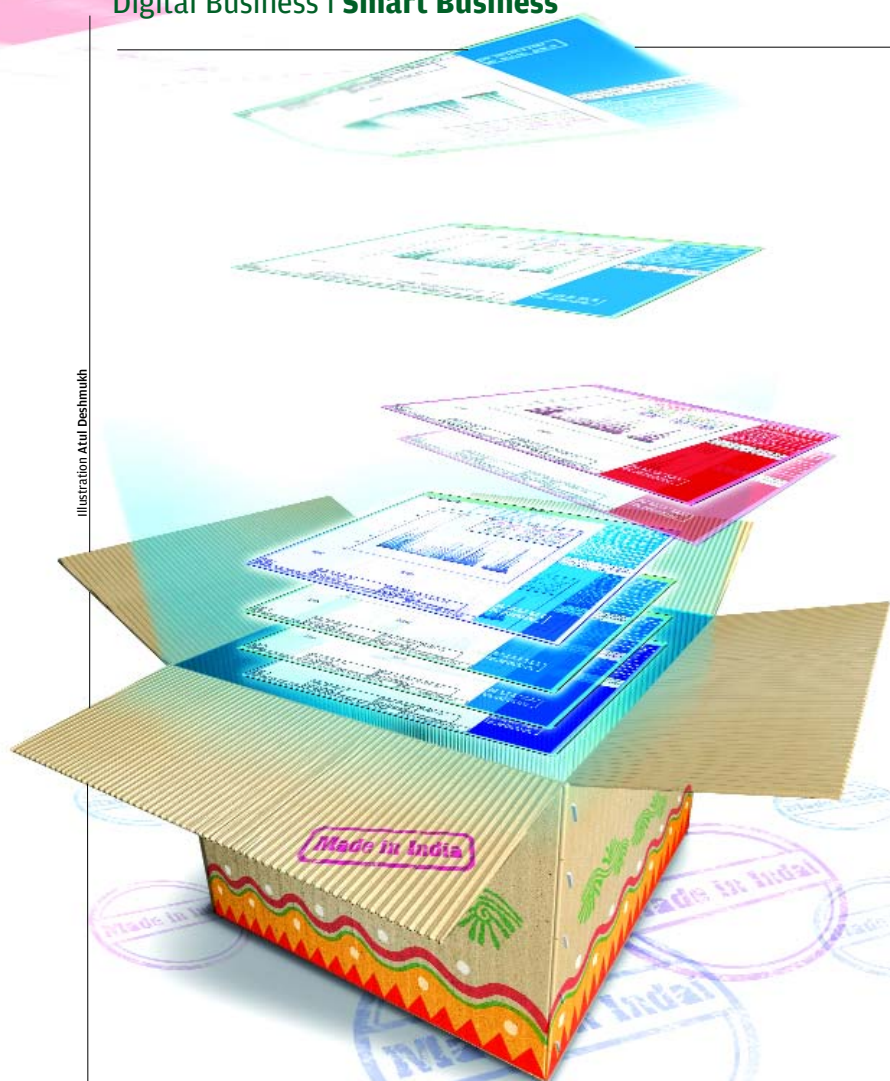
Bank Account

Notes

Start

Internet

7:05 AM



Desi Office Packs

'Home-grown' cost-effective Office solutions are all set to give the one from Microsoft a run for its money

Suprotip Ghosh and Avinash Rai

Let's say a new employee has joined your organisation. The cost of setting up hardware will be between Rs 20,000 to Rs 25,000. Microsoft licensing will cost around Rs 12,000 to Rs 13,000 for MS Office and about Rs 3,000 for MS Windows. So, the total cost is around Rs 40,000. But with Emergic, the cost is Rs 10,000 for the hardware, and Rs 3,000 for the software." That's Kalpit Jain, Vice-President, Technology, for Netcore Solutions, a Mumbai-based software company. And his USP seems to be the prime *mantra* for

a new clutch of entrepreneurial ventures in the Indian software market. Welcome to the *desi* Davids gearing up to take on multinational Goliaths, and making no bones about it, finally.

The Business Requires...

For the average business, the requirements seem to be clear and concise: the software should not only be efficient, but relatively error-free as well. Documents should be portable, if required to be opened on other applications, there should be good after sales support, and last—but not the least—it should be affordable.

Existing solutions in the office space are almost exclusively multinational. A huge chunk of the office software market is controlled by Microsoft with their redoubtable Office suite. Other players include Corel, OpenOffice.org, and to a lesser extent, Open Source products such as KOffice. These solutions are expensive, other than the occasional Open Source product, as Kalpit points out. A single MS Office user-licence costs Rs 13,000—quite out of the realm of consideration for a small business. Even if it can be afforded, the worth of the investment remains questionable: After you buy it, and you are based in, say, Chhindwara, what do you do if it crashes a day before the all-important meeting?

The other issue of concern is that of language. "According to studies, only five to eight per cent of the entire population in our country is English-language-literate", says Meena R Joshi, Technical Director, Modular InfoTech Pvt Ltd. Modular is a software development company that is based in Pune and engages itself in development of multilingual office software. For her, the market lies in the huge, untapped hinterland of regional or bilingual office work.

The Options Available

Emergic has three Linux-based products for the SME segment: Netcore Emergic Mail server, Emergic Cleanmail and Emergic Freedom. Of these, Emergic Cleanmail is a mail-filtering solution with a set of unique features such as triple-virus screening and detailed reports. The Mail server bundles serious, industry-grade features such as an inbuilt firewall, proxy server, an anti-virus and remote, browser-based administration. It also includes features such as VPN/bandwidth management too. Incorporated in 2003, the bandwidth management feature enables mail administrators to distribute available bandwidth among employees according to their requirement, or company policy.

Emergic Freedom is Netcore's implementation of their 'affordable computing' *mantra*. This is achieved by using Linux-based, diskless, low-cost computers as full-fledged desktop "thin clients" connected via LAN or Broadband to centralised processing on "thick servers" to simplify management and provide a virus-free operating environment. As Alok Ladsariya, Senior Software Developer, Netcore points out, "A day will come



Emergic is meant for low-cost "thin client" desktop PCs

when ISPs in India will understand that expanding broadband here in India is more profitable than providing connection to foreign agencies. There, they need to pay for connectivity."

Built upon an open-source software base to provide a low-cost, high-performance, application-rich, Windows and MS Office-compatible desktop software suite, Emergic Freedom is an affordable solution for

small businesses at Rs 3,500 per user licence.

Shakti Office, developed by CK Technologies, Chennai is an affordable, multilingual alternative to MS office. It comes in two languages: English and Hindi. In Hindi mode, it shows menus and options in Hindi. It may not be as powerful, but treads the same line of work as MS Office and offers good functionality across all its seven components-Access, Calc, Draw, Mail, Net, Show and Write and an excellent Hindi text spell check option (See "Face Off" on page 170). Compatibility issues with PowerPoint, though is a problem. Translation and transliteration from English to supported Indian languages work fine and error-free. It has good support for Hindi typing and offers ease of use, for long a concern with affordable Indian office solution.

Ankur Office, 'a complete multilingual office suite' developed by Modular InfoTech of Pune is another possible solution for the poor man's paperless office. Available in Assamese, Bengali, Gujrati, Hindi, Kannada, Konkani, Malayalam, Marathi, Oriya, Punjabi, Tamil, Telugu and English, this package is as close as it can be to the true multilingual office software solution.

Apart from features such as spell-check for all eight languages, Ankur Office also provides functionalities such as native keyboard support and localization: Help, Manual, Screens, Menu, Hints and alert messages are available in Indian languages as well.

Portability Blues: Downside Or Upside?

Compatibility issues plague indigenously developed software by the dozen. It is not just enough for an establishment to deploy a regional language software or e-mail client. It needs to ensure that e-mails written in these regional languages or typed in bilingual formats are readable in other software.



Highlights Of An Office Alternative

Ankur Office:

- ☑ Support for all major Indian languages
- ☑ Aesthetic fonts
- ☑ Fully localised
- ☑ Spellcheckers for eight Indian languages
- ☑ Supports a variety of keyboard layouts for ease of typing
- ☑ Numerous file formats supported
- ☑ Data exchange facility for other vendor font formats
- ☑ Mail Merge in the word processor
- ☑ E-mail sent from the package can be viewed by the receiver even if he or she does not have the font

1/2 Pg V AD

What Microsoft can afford to do in a monopolistic market cannot be followed by other competitors who aim to grab the regional language, or the low-end office application software market. Proprietary file formats are essential to provide software-specific features such as linking and embedding of graphical objects that are portable across platforms and software.

In a market such as India, Open Source has already had a headstart with governments and other organisations rapidly moving towards at least partial adoption of various Open Source products. The issue of ensuring compatibility therefore has the ominous makings of turning into a veritable nightmare for entrepreneurs who hope to grab the as yet untapped portions of a potentially unlimited market. Both CK Technologies and Modular InfoTech, however, claim to have solved the problem at least as far as font portability over e-mail is concerned.

It is, however, true that companies use continual innovation and support to deal with the lack of compatibility or portability. Netcore has an exclusive, 9 am to 9 pm support team of 15 engineers armed with mobile phones. Kalpit says that it is actually possible for them to provide remote support because they are using a Linux-based technology. Other than that, all Netcore products come with a utility-assisted backup application. For their Mailserver and Freedom software, Netcore provides training for EDP and IT managers for client companies. The training cost is included in the software cost.

CK Technologies is in the process of revamping their entire support process, currently based on e-mail and telephone support. By October, says Vinod Reddy of CK Tech, they intend to have a proper help-desk in place, handling calls from all parts of the country, irrespective of the language callers may speak. This will be supplemented by a revamped Web site, which will have comprehensive documentation of its software in the market.

Modular InfoTech has an e-mail and telephone call-based support system, besides arranging corporate training sessions and sending support executives over, which is charged accordingly.

That Netcore uses the Fedora core 1 for its Freedom and MailServer software, which means that they conform to a certain Open Source standard that is globally gaining acceptance. Given



Highlights Of An Office Alternative

Shakti Office 1.72

- ☑ Low memory requirement: as low as 64 MB RAM
- ☑ Single-click Menu Toggle and Typing Toggle to switch between English and Indian languages
- ☑ Transliterate from Indian languages to English and vice-versa
- ☑ Graphical User Interface Toggle - Message Box, Dialog Box in English and Regional Language
- ☑ Dictionary, spell-check, thesaurus for English and Indian languages
- ☑ Bilingual-sorting, import and export of data
- ☑ Find and Replace - (English to Indian Languages and vice-versa)
- ☑ Support for almost all of the popular standards (rtf, doc, html, xls, mdb, and many more)
- ☑ Help is available in English, Hindi, Tamil, etc
- ☑ E-mail in English and Indian languages
- ☑ Remote Help option available
- ☑ Inbuilt facility to export to PDF
- ☑ Ability to covert documents in old legacy encoding to standard encoding

Shakti Office plainly follows conventions... that MS Office exhibits, and so does Ankur Office

a suitable period of gestation, it can attain the level of standardisation, which will enable it to port and share its application across software or platforms that conform to that yardstick. Shakti Office plainly follows conventions and menu layouts that MS Office exhibits, and so does Ankur Office. The Microsoft imprint in form of various WYSIWYG tools is clear on screen.

It is not a drawback of such software, though, that they make use of the practicalities shown by Microsoft and other software makers in their products. As Manoj Russel, MD, CK Technologies acknowledges, "It (Shakti Office) does not claim to be an equal of MS Office. However, we ensure that it doesn't come with bloatware!"

It is just an acknowledgement of market realities. The main clientele of all the three companies are government offices, schools and other educational institutions, insurance companies and Public Sector Undertakings. Though all of them have corporate customers, it is still too early to think of them challenging the kind of turnover that even the Indian wings of multinational software companies churn in.

The Rural Business Suite

Once affordable broadband becomes a reality in India, a hundred different solutions can crop up from its hinterland, and these entrepreneurs are well on their way to use that carrier to increase PC penetration in India from its current 3 per cent.

This is what all three manufacturers tacitly agree on. "We are convinced that if IT has to reach the masses, it can only be through the use of local languages on computers. Considering the above, we decided to develop a software which is equally powerful and much more user-friendly than multinational English software and which will give you the pleasure of working in Indian languages rather than in English," says Joshi, Technical Director, Modular InfoTech.

Once the hinterland is irrigated, a billion different flowers can bloom. Computer literacy can then, seriously, give functional literacy a challenge. Whether it is a mining contractor in Jharkhand, or a date palm grower in Kerala, a paperless office does have the promise of being a working reality, and not just a pretty machine sitting in the corner challenging you to *Solitaire*. ☐

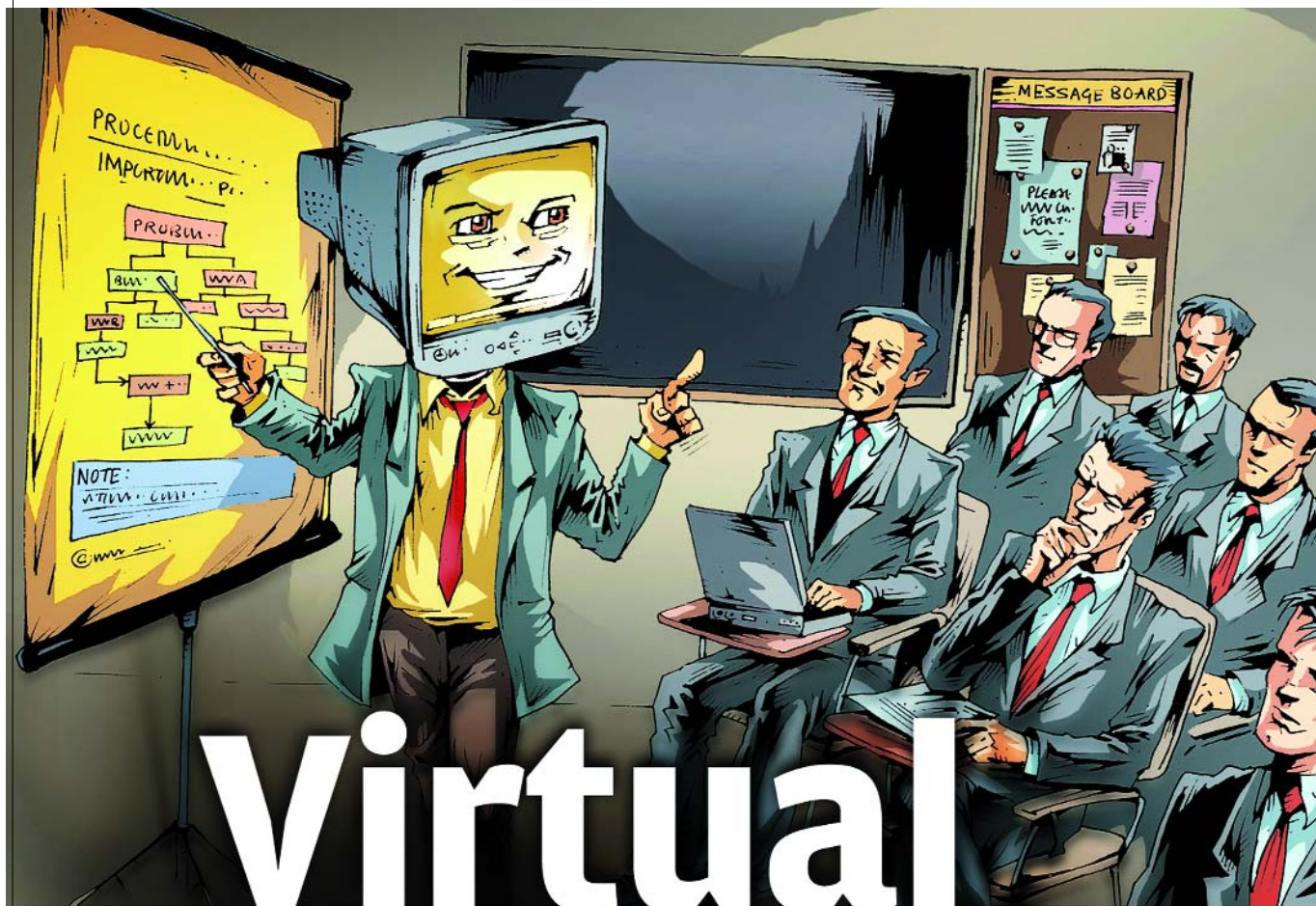
suprotip_ghosh@thinkdigit.com
avinash_rai@thinkdigit.com



Highlights Of An Office Alternative

Netcore Emergic Cleanmail

- ☑ Detailed reporting including usage analysis and bandwidth monitoring
- ☑ Anti-spam technology
- ☑ Three-level virus scanning
- ☑ Infrastructure: servers co-located with VSNL
- ☑ No extra cost involved, as it is a hosted service
- ☑ 24/7 tech support
- ☑ Auto-learning/keyword-based blocking
- ☑ Bundled service with hosting plans from various hosting companies



Virtual Classrooms

'E' has become the most used alphabet in computer terminology. E-learning - the use of electronic medium for training in the corporate world - joins the club

Preethi Chamikutty

In a knowledge-based economy, ignorance is tantamount to commercial suicide. As a company you are keenly aware of this Darwinian fact of evolve or perish. To know is thus essential, but when knowledge shifts and evolves at the speed of the Internet, keeping pace becomes the order of the day. Thankfully, Janus-faced technology once again submits both the challenge and a solution to the problem in the form of e-learning.

E-learning: while the word may not be listed in the Oxford dictionary, there are a lot of definitions floating around for the same. Learnframe.com, for example, defines e-learning as, 'Education via the Internet, network or stand-alone computer... a network-enabled transfer of skills and knowledge. E-learning refers to using electronic applications and processes to learn. E-learning applications and processes include Web-based learning, computer-based learning, virtual classrooms, and digital collaboration. Content is delivered via the Internet, intranet/extranet, audio or video tape, satellite TV and CD-ROM.' This definition plainly under-

lines the extent to which the electronic medium is involved in this type of education.

Most large companies today are using e-learning as a cost-effective method of delivering knowledge to an enterprise audience. However, finding the best e-learning solution to fit their scale and budget is still a challenge that many business divisions face. Let us examine a few real-world implementations with a view to understanding how to best utilise this tool for your company.

What is E-learning?

E-learning is extensively used by companies today, mainly due to the convenience involved. Business is no longer restricted to geographical boundaries. It thus becomes very essential that vital information be communicated across locations. The accurate dissemination of such information to a wide audience is a big challenge. If done in the traditional way of classroom training, it can be a very tedious process, perhaps even more expensive.

E-learning removes geography from the picture. An individual working on a project in the US may need help from his team in India. Rather than sending an e-mail and waiting for a reply,

he can use e-learning to communicate directly with his colleagues across continents. This helps employees on different schedules and in different time-zones to remain updated.

It is important to note that e-learning is not a replacement killer of traditional classroom-teaching, it is rather an enhancer. According to a two-year cross-industry study released in 2002 by Thomson Learning, e-learning-when used in a blended curriculum that also includes traditional classroom learning-is far more effective at driving employee productivity than classroom training alone.

While everybody agrees to the numerous benefits of e-learning, the cost effectiveness of the option is sometimes questionable. The technology involved and the infrastructure needed comes at an initial cost which would only prove beneficial to the company in the long run.

A few tangible benefits that can be attributed to e-learning are process improvements, increased customer satisfaction, increase in sales and revenues and improved communications - as well as a range of personal skill development in management, leadership, coaching and mentoring. Knowledge gained through e-learning is passed on beyond just the individual. It may be extended to a manager, a peer or a subordinate - thereby widening the application of the knowledge gained.



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The Benefits

A business embracing e-learning, sees a lot of difference in the expenditure pattern. It helps eliminate travel costs and decreases time away from the office for both students and trainers. The cost savings can be used to train more employees across the organisation.

E-learning helps provide targeted, efficient, just-in-time learning to employees at any time and at any location in the form of a Web-based desktop solution. Employees around the globe can collaborate online and discuss business needs and processes in real time.

E-learning can be customized to specific business processes to increase user adoption, minimize project risk, and ensure the organization has the skills and knowledge it needs to be successful.

Profiting From E-learning

Mahindra British Telecom (MBT) a joint venture between bluechip companies - Mahindra and Mahindra Ltd. India and British Telecommunications Plc. United Kingdom, uses e-learning extensively. Login2Learn is a product from MBT for managing e-Learning. MBT enables telecom companies protect their investments in legacy systems, enhance capital budgets, reduce operating expenses and helps them build solutions for the multi-services future. For a company with a workforce of more than 5,000, Login2Learn seemed like the best solution. Note that MBT uses Login2Learn only to impart training on technical skills; training on behavioural skills is still done the traditional way.

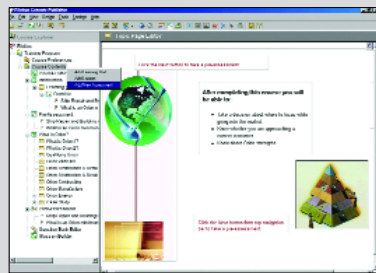
MBT's Login2Learn aims at removing the hurdles that prevent effective learning. Traditional, classroom-based training has to deal with many constraints including those of space, size of batches, and availability of both students and instructors. These constraints are eliminated when using Login2Learn to deliver Web-based training. It allows learners to actively manage their own training; by providing any time, any place, e-learning.

An e-learning system that incorporates self-learning complemented by suitable interaction with both the faculty and the

1/2 Pg V ad

Elicitus - An e-learning tool

First launched in 1994, Elicitus is an e-learning tool designed, developed and maintained by Harbinger Knowledge Products. Presently deployed in over eight countries including US, UK and Japan ELICITUS is a desktop authoring tool, designed keeping the subject matter expert and the trainer in mind. ELICITUS does not require any programming knowledge to develop e-Learning courses. It provides readymade e-Learning components such as learning hierarchy (Learning units, lessons and topics), course navigation, global course settings, assessments and glossary.

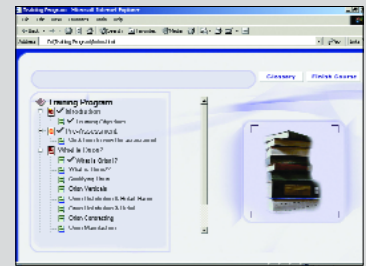


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All the topics can be developed using a library of over 200 built-in authoring templates. These templates have the facility to embed text, graphics, videos, pictures, animations and voiceovers. To this framework one can add assessment using the built-in assessment

engine. It supports six different question types namely, multiple choice single correct answer, multiple choice multiple correct answers, true / false, fill in the blanks, match the pair and graphic choice. The assessments can either be integrated as a lesson under a learning unit or as a quick exercise under a topic.

ELICITUS also provides a built-in glossary engine which helps the author to support the course with many reference text and complimentary learning material. This enables the author to focus on the actual course content and depending on the learner's competency; one can refer to additional content if required. ELICITUS offers a comprehensive import facility. This helps multiple authors to author different parts of a course. Once authored, all these parts can be imported in one single course. This helps in increasing productivity and reduces authoring time.



XXXXXXX

experts is a powerful and highly effective tool. MBT's Login2Learn framework facilitates the creation and management of such a customized learning environment.

Login2Learn is an integration of various type of course material in hypertext, plain text files, presentation slides and PDF documents, with or without multimedia. It has the facility to stream audio and video. It enables interaction with faculty and experts through chat forums and via e-mail. A bank of FAQ's are created and maintained for helping students. Question banks and question papers are also available for online examinations. Progress of students is tracked by constant monitoring and their feedback is automatically evaluated.

Another business using e-learning to its advantage is the stock broking company, Sharekhan. Being in the retail broking industry, it has to be constantly updated about what is happening in the share market, as customers purchasing shares approach them for assistance. With more than 220 outlets across the country, being in touch and updated is very essential. Sharekhan uses e-learning to improve the efficiency of its people. E-learning is mainly used in Sharekhan by the research team and equity sales team.

The research team is one of the main drivers of this organization. They have to constantly study the stock market, analyse trends, etc. With the basic question, 'What is happening in the market?' it is very important for the Sharekhan team to be updated with sundry information in order to give its customers a satisfactory answer. 'We have to be well informed about the market. We also have try and understand the logic behind market and research helps us in doing that,' says a senior official at Sharekhan.

Sharekhan uses Enterprise Communication Platform (ECP) - an e-learning package developed by Satyam CA. The research team has to communicate its findings across all the Sharekhan outlets in the country. Earlier when an e-mail

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was the only avenue, this was not very interactive. E-learning on the other hand helps make the whole process of information sharing very interactive. Video conferencing is used to accompany delivery of information. This kind of learning helps both the trainer and the person receiving the information. ECP helps the Sharekhan team to track the attendance automatically once a person logs in (or fails to). 'Feedback to the trainer is direct and there is much better control overall. Dissemination of knowledge becomes much easier,' adds the official.

When an organisation grows, synchronising information across its girth becomes difficult. Organising classroom training in such a case become impractical. In such a scenario, e-learning is one of the most effective tools available today.

ECP enables learning to happen on a real-time basis. Presentations to clients, servicing the clients, are other areas that have become simpler because of e-learning. Mr. Arora says that benefits are very subjective and more in terms of quality than quantity. Increase in productivity, client acquisition is some of the other areas which have benefited.

What is in store?

Traditional classroom teaching will never go out of fashion but e-learning is fast catching up and is attracting a lot of believers. Vendors need to work with their customers to help them identify, understand, and apply best practices to ensure that their e-learning initiatives are successful. More importantly, you as a company should communicate with both your employees and content providers to understand the needs of your staff and how to best enhance their knowledge.

As a company, it is vital to use technology to share information. As Bill Gates once put it, 'Power comes not from knowledge kept but from knowledge shared.' A good e-learning tool can help your company do just that. ■

preethi_chamikutty@thinkdigit.com



Monica Agarwal
Partner-Proprietor, In-ovation, Calcutta

Ryze is a network that comprises experienced enthusiastic professionals who exchange knowledge and ideas—the very reason why I logged on to it a couple of months back.

The network lets me reach out to new people, track down long-lost friends, share and receive business proposals and make use of my communication skills. There's also a lot of goodwill I have gained—an asset that competition cannot undersell or destroy. Apart from business, people post their views on current happenings. Another important benefit is member "credibility." Profiles posted here are mostly correct: the fictitious ones get filtered overtime.

Logging onto the network has become part of a daily routine. The number of people you meet with depends on the way you interact with members. An active Ryzer makes five to seven contacts per week.

As for offline meetings, we have 'mixers': An open invitation detailing the time and place of the meet is sent to all the members of a particular group. Such get-togethers take place once every month and result in plenty of interaction on both, personal and the business fronts.



NETTING

ONLINE Social networking has come of age. From merely making friends and socialising, they now let you get business done and clinch deals. We spoke to five professionals who have netted gains through such interaction



Arvind Iyengar
Marketing Manager,
Mahindra Holidays &
Resorts India Pvt Ltd,
Chennai

I joined Ryze in October 2003. First, a friend told me about this unique way of meeting people from diverse backgrounds and then, its personalised blog-like format caught my interest. I browse through the site three to four times a day and, on an average two to three contacts per week.

'Mixers' (offline meetings) take place frequently in various cities. Then there are one-to-one meetings wherein individuals meet to share their own personal thoughts or interests.

The benefits have been both personal as well as professional. I might come across a person pursuing trekking full-time, with whom I can tag along to pursue my hobby: These are personal benefits.

Being a marketing professional (with frequent cross-country trips), it has helped me forge ties with many potential business partners. Also, if I come across a person who owns a corporate gifts agency, I can touch base with that individual to get a good deal for my company. Above all though, I learn about other cities via their resident Ryzers. Their 'tidbits' serve as a pretty introduction when I criss-cross through that city.

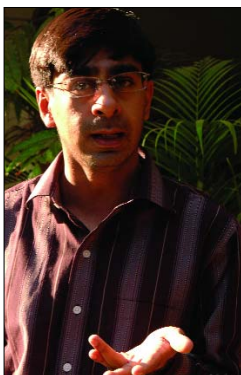
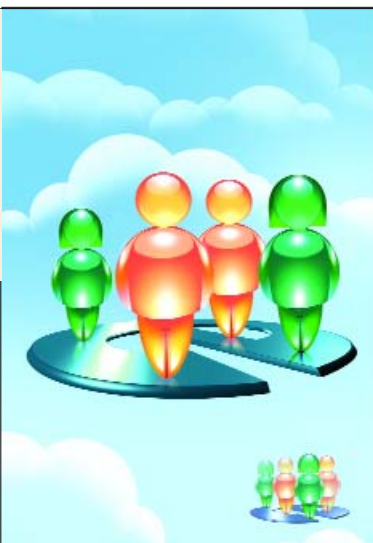


Ravi Vaidyanathan
Officer (Operations & MIS),
ILFS, Mumbai

I became a member of the Friendster.com a year ago. Courtesy: a friend of mine who is quite active in this network. It's been useful to keep in touch with friends, who have shifted out of Mumbai and are part of the network. E-mails do zip through and fro keeping us updated about the whereabouts of everyone in the group. Other than that, I have also got in touch with people who have turned out to be potential business contacts.

I log onto the network every two or three days. Yes, I do make a lot of contacts. I started with three and then went on to build a network of 50 people. They in turn have contacts themselves and thus I get introduced to many more. Friendster does encourage me to share information and exchange ideas and opinions about a particular topic that the group discusses online. Also, I get to know about diverse cultures and meet people from different societies and strata. A cool way of keeping with the times!

BUSINESS

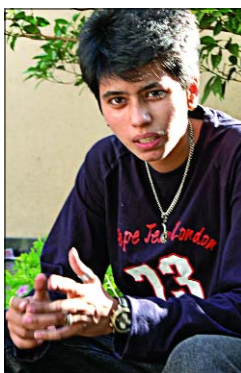


Nikhil Handa
Assistant Manager,
Nicholas Piramal India Ltd

Friendster.com is a wonderful way of networking with people. I was introduced to this novel concept about six months back. You put up your profile, browse through other profiles and invite people whom you think share the same thoughts and interests. I do browse through the site once in a week and come in contact with quite a number of like-minded people, some of whom are mature professionals.

Business-wise, yes, it has been helpful. Here's how: my work involves clinical research, which entails that the company provide insurance to patients being treated. While looking out for potential insurance providers, I came across an individual who did provide the same. We met, discussed the deal and have been doing business ever since.

Apart from that, it has helped me share and exchange opinions with other Friendster friends. I feel sites such as Friendster let you expand your horizon and increase your knowledge as well.



Chitra Marathe
Guitarist, Mumbai

Orkut, Google.com's take on online networking saw me becoming its member three months ago. I had no idea that such an idea was in place on the Web until my friend sent me an invitation. Since then, I have been an active member within the community. It was here that I got to meet people, who shared my fascination for music.

I networked with them, and have gained a lot through our exchange of ideas. I log on to the Web site everyday to check for new messages, etc. I don't add people at random. I restrict myself to those with whom I have had a proper correspondence. Till date I have 46 friends in Orkut. Offline meetings do happen but given my hectic schedule I have been able to attend just a few of them.

Orkut is a great pastime and has helped me adapt to attitudes which I would not have otherwise. It was through Orkut that I got to know about a drama production company called the Open Theatre group. I got through its auditions and am now looking forward to its upcoming venture.

As told to Garfield D'Souza

Indian Suites or Microsoft's?

Should your 'Office' suit itself with Microsoft or a cost-effective Indian alternative?

"At Rs 1,995, Shakti Office is a steal..."

Gururaj Kulkarni

Manager, Information Technology, 20:20 MEDIA

20:20Media decided to purchase and implement Shakti Office way back in mid-2003. Many executives and managers in the company worked with multiple documents in just the very languages supported by Shakti. The decision was also influenced by the fact that virii entered systems via e-mails received by these very middle-managers and executives. Shakti has an inbuilt virus-protection feature that takes care of this. That said, on the usability front, it is very intuitive and light on the operating system, which in turn enables the usage of limited storage and memory resource.

Yes, we did have Microsoft Office Suite installed on our systems prior to Shakti Office. But then the latter package has similar features and better stability. All this at a price as low as Rs 1995 makes Shakti Office quite a steal of a deal. We did look at Shakti Office from all these angles so to say and decided that it was the package that met our requirements.

All Shakti needs is a Celeron with Windows 98 (or a higher version) coupled with 128 MB of RAM, Internet Explorer 5.5 or higher and minimal hard disk space. These met, installation was a breeze without any irritating glitches whatsoever. CK Technologies (the developers of Shakti Office) provides technical support. We had a technical team from the company in our office to check problems and fix bugs related to the application. Thereafter, in terms of maintenance, the package has had a smooth run.

We imparted training to employees to familiarise them with the package. The effort has paid off and people have taken to it well enough.

"Microsoft has put in millions..."

Chinar Deshpande

Chief, Information Technology
Pantaloons Retail (India) Ltd

Pantaloons makes extensive use of Microsoft Office Suite. With back office operations and other such IT process departments being established, it is an indispensable tool. MS Excel thus serves as a useful tool for ad hoc reports and analysis of data accumulated by transaction systems. Pivot tables help in the construction of 'what-if' systems. Concept discussions and business proposals come alive through Powerpoint presentations, while Word comes in handy to draft letters, etc, for inter-office communication.

A few departments do make use of OpenOffice though. The reason for this is that Pantaloons has grown rapidly and such low-cost solutions do help conserve resources. However, this does bring up software incompatibility issues. Certain documents created in one application may not open using the other and vice-versa. Hence, we do plan to set up a team for an internal software audit. We would like to tilt in favour of Microsoft's package. After all, they have invested millions of dollars to come up with a package that is easily intuitive, sturdy and not much of a hassle to use.

Yes, certain Indian software packages do offer the same features at a lower cost, but then we feel they are still in the nascent stage. Then there are migration issues as well: Right now, employees as well as our clients, etc, are quite conversant with Microsoft Office. New software translates to training, which in turn entail costs and take up company time. Why go through all unnecessary hassles when here is a solution that mingles well with the organisation?

— As told to Garfield D'Souza



Photograph: Mandy Xavier



174 Music on the Move



185 About Harry Potter



188 Hunt online via web

Digital Leisure

Technology Beyond Work

Touched By Tech

Networking Rural India

Drishtee generates rural employment in six states through IT-enabled services with a goal to slowing migration to urban areas

Meera Vankipuram

Achyut Kumar Kalita of Dipota village in Sonitpur district of Assam has a Masters degree in Chemistry. Lack of employment opportunities led him to take up poultry farming. Six months ago, Delhi-based rural Information and Communication Technologies (ICT) solutions provider, Drish-

tee.com helped him avail a bank loan and set up an Internet kiosk in Dipota. Today, he has recovered part of the loan and is able to earn a stable income by conducting computer education courses at his kiosk. "Youngsters between the ages of 18 and 25 take up these courses. These courses help them get a job in the city," he says.

Echoing the sentiments of several entrepreneur-creating developmental programmes in the country, Drishtee.com, a

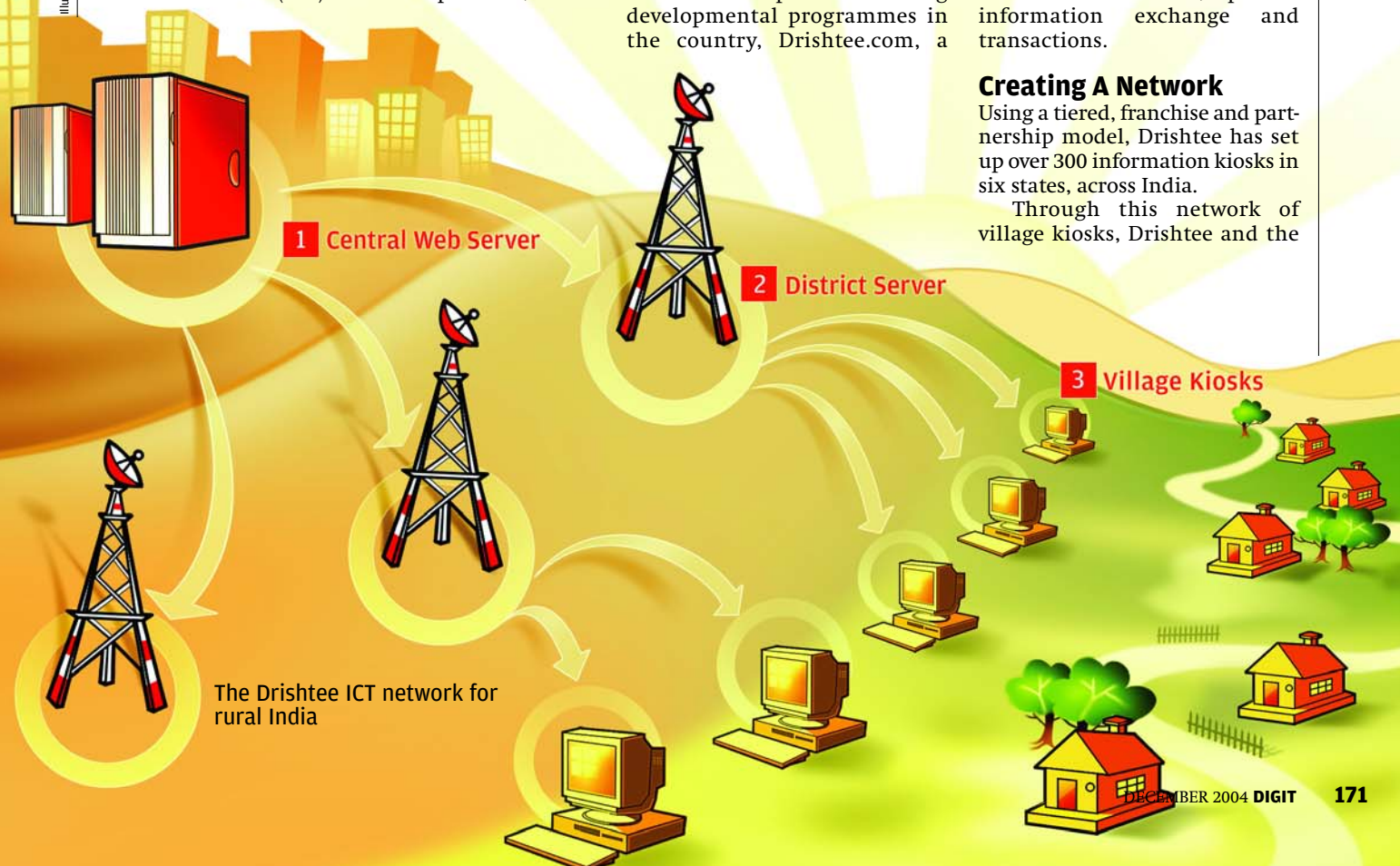
Delhi-based rural ICT solutions provider teaches several men and women—in three hundred districts across the country—how to beat the odds, and earn a living.

Drishtee provides IT services to the rural masses through a kiosk-based revenue model. The services enabled by Drishtee include access to government programs and benefits, market-related information, private information exchange and transactions.

Creating A Network

Using a tiered, franchise and partnership model, Drishtee has set up over 300 information kiosks in six states, across India.

Through this network of village kiosks, Drishtee and the



The Drishtee ICT network for rural India

Illustration: Jayan Narayanan

local entrepreneurs facilitate delivery of ICT-based services to people in rural areas. A kiosk is owned and operated by a local villager, thus enabling wealth creation by encouraging entrepreneurship at the community level in the village. These kiosks also provide viable employment opportunities for the unemployed rural youth who can perform simple data entry tasks at the kiosks.

Satyan Mishra, founder and CEO of Drishtee.com: "Today there are nearly 562 entrepreneurs in the six states where we have set up projects. In partnership with a bank like ICICI, we arrange for loans for the kiosk owner."

The kiosk-owner requires only basic maintenance and numeric data-entry skills. The kiosk owner or operator bears the cost of stationery, maintenance, electricity and telephone bills and pays a monthly fee of Rs 500 (apart from a licence fee of Rs 5,000 to cover training costs) to Drishtee for technical and marketing support. Drishtee also earns a commission on select services offered through the kiosks.

"We expect the kiosk operators to earn about Rs 6,000 per month, after the first year, in which they repay the loan," says Mishra.

The kiosk-owners are given basic training in handling Drishtee's services while catering to the customers. According to Mishra, "We pick about forty people from nearly 200 applicants. After identifying enterprising candidates, the training process begins."

Impact On Rural Economy

One of Drishtee's positive case studies is that of farmers in Madhya Pradesh who were getting Rs 300 per quintal from local traders for a potato crop at the local market. By checking prevailing market rates on the Drishtee portal, they discovered that the current rates at the Indore mandi were Rs 400. This prompted them to sell their potato produce at the Indore mandi, where they earned a higher profit.

Mishra believes that by creating more employment opportunities, ICT projects may help reverse the trend of rural migration that currently seems to be the trend. Using IT as a tool for basic education, a new genera-



We expect the kiosk operators to earn about Rs. 6,000 per month., after they repay the loan."

Satyan Mishra,
Founder,
Drishtee

tion of IT literate people may emerge who are able to sustain themselves, economically.

The kiosks erected in these villages also ensure that Government schemes are communicated to people in rural areas. "People are also made aware of their fundamental rights," he says.

Drishtee kiosks enable e-government services like obtaining important documents (driving licenses, land records, etc) and addressing of online grievances, and private services like an online marketplace (Gram Haat), e-mail (Gram Daak), and an agriculture forum (Krishi Prashan), Commercial services, implemented in association with corporate institutions include computer education, insurance, digital photography, astrology and matrimonial services.

Drishtee's corporate tie-ups—



A Drishtee volunteer with a kiosk operator in Shahdra village, U.P

Microsoft (OS), Hewlett Packard (for digital photography services), ICICI (insurance), Escorts (health services) and Pustak Mahal (e-shopping services) make some of the commercial services possible.

In Kalawali village, Sirsa district (Haryana), Biker Singh, a farmer who grew sugarcane for a Government factory was aggrieved, as his crop had not been harvested and purchased by the factory owners, on time. Singh sent an e-mail from a Drishtee kiosk, to the concerned Government authorities and in three days, received Rs 1,06,000 as compensation.

Tech Support

A central Web Server (See infographic on page 171) acts as the

main administrator of the village network. It co-ordinates communication between the districts, monitors the performance of the kiosks, and acts as a national level content provider. At every district office, the local staff take on the role of content providers, by updating the Drishtee portal (<http://ind.drishtee.com/>) with data such as market prices, local employment listings, etc.

Using a dial-up connection from a local Internet Service Provider (ISP), the kiosks connect to Drishtee's Web portal. The hardware, which the kiosk owner invests in, is provided by Drishtee.

Drishtee has also developed localised content for six states. Its indigenous software (which is used to enter data relevant to the Drishtee portal), is menu-driven, and requires minimum data entry skills. The software has been designed in Hindi, Tamil and Assamese and can be customised for other languages as well.

While most Drishtee kiosks have dial-up connections, in one district (in Jaipur), optic-fiber has been used for connectivity. The feasibility of deploying optic-fibre connection in other locations is being studied. In places where existing telephone connections are of poor quality, cellular connections may be tapped, to enable connectivity.

The Drishtee Roadmap

For its ICT initiatives, Drishtee has received accolades from the World Bank and the US-India Business Council. In the next one year, Drishtee plans to set up nearly 1,000 kiosks, in 20 districts spread across six states. Helping kiosk owners earn an additional Rs 3,000 per month (Rs 1,500 worth of income-generation services, Rs 1,000 worth of savings, Rs 500 out of purchasing services) is yet another target.

Team Drishtee aims to connect "every single village in India to the other villages and the outside world."

So why did Mishra choose the road less travelled? "Because not only does it make good economic sense for Drishtee, we are also helping promote jobs in rural areas. In many ways, I feel I am giving back to my community." meera_vankipuram@thinkdigit.com

Move to the Beat

The Portable Digital Music Player—the new music carrybag—keeps your music at hand. Here are a few notes to help you make your choice

Bhaskar Banik and Deepak Dhingra

You are travelling in a train and its raining outside. You are listening to your Walkman, and suddenly you get the urge to hear your favourite 'rainy season' track. It's not on the tape you are playing, and not on the other two cassettes in your bag, or even on the four tapes in the office locker. Arrgh! You can't hear it until you get home.

On another occasion, you are riding the bus to work; you are listening to your Discman, and it's skipping more than a boxer training for a fight. Stupid potholes!

If only you had a player that could hold your entire music collection, and also handle all the

bumps and shakes that we are accustomed to when travelling in India.

Let's face it, if you still depend on tapes and Discmans, it's time for an upgrade. You need a Portable Digital music Player!

Sourcing Your Music

A portable digital music player lets you carry everything you need in the palm of your hand. It plays songs, radio, and in some cases can also record voice and FM. But how do you extract the music from all your CDs? Simple: just rip your music CDs, convert the songs to MP3s, and transfer them over to your player. Just pop a CD into your CD drive, and use ripping software to rip the songs to either MP3 or WMA.

You can also download free tracks off the

Internet. With the portable digital player around, all you need is a USB transfer cable and a regular supply of batteries.

To download music from the Internet, log on to a Web site that offers free MP3s, such as www.mp3.com, or www.amazon.com, and download songs by independent artists. Or, if your player supports the AAC format, you can pay for, download and listen to high-quality songs from the iTunes (www.itunes.com) Web site. Software such as Musicmatch and RealPlayer also let you listen to online radio stations that feature top-of-the-charts artists, and let you download MP3s for a small fee.

Of course, you can also use P2P applications and download just about any song you want—but this is illegal. That said, let's check out some software that will get your player rocking.



Apacer AP510

The Essentials

The friendly Windows Media Player installs along with a default installation of Windows. Windows Media Player is a complete suite that will help you organise your music as well as sync it with your portable player.

WMP 10 is the latest avatar of the Windows Media Series (*find it on the Digit December DVD*), and by far the most accessible—the only downside is that it can only be used in Windows XP. The clearly marked tabs on the top let you arrange your songs using the Library function, and sync your songs with the portable player using the Sync function. If you want to delete a song from the portable player, click on the song that you want to delete, and click the cross button at the top.

We recommend using Windows Media 9 series on machines running Windows 98 or ME, and Windows Media Player 10 on machines running Windows XP.

One thing the Windows Media 9 series does not support is direct ripping of CDs to MP3s: you will need to install an additional codec, available for a price, from either Cyberlink or InterVideo to get MP3 ripping functionality into Windows Media Player 9. On the other hand, WMP10 comes with inbuilt MP3 ripping functionality.

But MP3 is not the only option you have; you can rip your CDs into the WMA format, and you can set the bitrate at which the CD will be ripped. Generally, ripping at 128 Kbps in WMA format is more than enough for listening pleasure, and results in a smaller filesize.

Freeware CD rippers such as EAC (Exact Audio Copy), Musicmatch Jukebox and dBPowerAmp are also available to burn CDs. Although the free version of Musicmatch jukebox is crippled—you can only burn and rip CDs at a speed of 5X. EAC is by far the best in terms of high-quality CD ripping. The only extra software you will need to download to use EAC to rip directly to MP3 is the LAME codec, which is available for free on the Internet. dBPowerAmp, on the other hand, does a blazing fast job of CD ripping to MP3s, at any bitrate you specify, and is recommended for a “no-hassles” CD-ripping experience.

Tagging Your Music Using ID3 Tags

After you have ripped your collection of Audio CDs, most of the ripped audio tracks on your computer will be labelled with names such as Track01.mp3 or Track01.wma. On a portable player, it would be difficult to figure out what song is playing if all of them are labelled Track01, Track02, and so on. ID3 tagging of songs will not only help you overcome this mess, but also to organise your collection on and off your portable player.

ID3 tagging, basically, helps you organise your songs. The information you can include is title, artist, album, year, genre and a comment field. This was in ID3 tag version 1.1, and the drawback of this version was that it was limited to a maximum of 30 characters. So if you had to

How We Tested

We kept the process of testing the portable digital music players very simple, so that it not only helped in judging the quality of the player, but also allowed the scores to reflect the real-life performance of the player.

The test system we used consisted of a Pentium 4 3.2 GHz running on a MSI NEO P-875 motherboard with onboard sound and a GeForce4 Ti 4600 video card. Two Corsair TwinX 256MB memory modules running at 400 MHz provided the system memory, while a Seagate 120 GB SATA hard drive was loaded with Windows XP Professional with Service Pack 1 (for USB 2.0 functionality).

In the Features test, we included all the features that a player could possibly have, including storage capacity, FM recording, USB 2.0, audio formats

supported, etc. Features that were unique to a player were given extra points.

In the Ergonomics and Ease of Use sections, we allotted the most weight to the interface and the intuitiveness of the button placement on the player. This was followed by the earphone comfort factor, which is one of the most important factors when you are looking for a portable digital music player. Build quality was another criterion we looked at: players should be able to handle a fair amount of wear and tear.

The Performance section included playing selected audio files on the players and transferring data to the player. If the player supported recording, we also recorded a small paragraph at default settings to check the recording quality.

The songs we used for the testing

included a heavy bass file, a flange and bass track, Hotel California by the Eagles, and two Hindi tracks, Anjaane by Strings and Tanha Dil by Shaan. Both tracks are guitar-heavy, with extremely well-laid out vocals.

A real world test was also done, in which files amounting to 100 MB were transferred from computer to player, and the time taken was recorded. In the case of microdrive and hard drive-based players, we transferred 1 GB of music to gauge data transfer speeds.

The battery test was important. Amazingly, some players surpassed their rated times by good margins. For the battery tests, we played all the songs in a loop and kept the “repeat all” option turned on, while the player’s display was turned on from time to time.

Earphones

Regular earphones bundled with portable digital audio players may or may not complement the player itself. For instance, the earphones provided with the Samsung YP-T5 and the Creatives were extremely good, and reproduced sound with little or no distortion at all, at high volume levels. On the other hand, the earphones bundled with both the Umax Vega and Draco are below par, and do not do justice to the players. To check if the player actually contributed to the degradation of sound reproduction, we plugged in a Sennheiser MX300 (retailing for around \$9.95) earphone into the Umax Draco. The results were very good. These results proved conclusively that the bundled earphones were to be blamed for the degradation of sound quality.

Since you want to listen to music on the go, you can opt for noise-cancellation

or isolation earphones. These earphones are very expensive, but the end result is pure listening pleasure. Both the techniques work in different manners to achieve the same result of getting optimum sound quality without outside interference.

The technique used in noise cancellation headphones is to determine the kind of ambient noise that is being generated, and then produce an inverse sine wave to counter the ambient noise. Consequently, the process cancels the ambient noise and gives a better reproduction.

On the other hand, isolation earphones act in a physical manner, and plug right into your ear canal. An isolation chamber is created, and this way the sound emitted falls directly on your eardrums. No ambient sound is allowed to enter the ear canal. This is called the Acoustic Seal.

Isolation earphones are available from Shure Technologies and Etymotic Research, and are in the price range of \$99 and upwards (and upwards literally means that the sky is the limit!). Noise cancellation earphones are available from companies such as Maxell, JVC, Sennheiser, Bose, etc. Bose has the Bose QuietComfort 2 Acoustic Noise Cancellation Headphones available in India, which retail at Rs 21,900 plus applicable taxes.

High-quality earphones (but not isolation or noise cancellation) are available from Bose, Philips, Technics, Sennheiser, JVC, Panasonic and a range of other brands.

The earphones mentioned above are freely available in the grey market, although you will need someone with some 'pehchaan' to help you get the real thing!

tag the song "Jis Desh Mein Ganga Behti Hai," from the movie by the same name, you wouldn't be able to use the full name. To resolve this, ID3 V2 was devised, and now has become the de-facto standard for tagging in most audio players.

Once this tagging is done, you can use any of your favourite players such as Windows Media Player or iTunes to sync the songs with your MP3 player. And if you don't want to do that, you can simply drag and drop any song that you want into the player (if it shows up as a removable drive in Windows Explorer.)

You have completed all the steps to experience digital music on the go!

Audio Formats And DRM

All the players we received for testing supported the MP3 and WMA formats. While this is good, we did test some players that tread new paths. The Samsung Yepp Sports supports the Ogg Vorbis format, while iPods such as the iPod Mini traditionally support AAC. So is it more feasible to purchase a player that supports newer audio formats? Definitely; because the MP3 format has been done to death, and because there is hardly any development being done on this format. Formats such as WMA, AAC and OGG can give better quality audio files at almost half the size. If you want a high quality MP3 song, the file size increases dramatically. The other formats are therefore fast gaining acceptance.

AAC is the biggest, and thus far, the best format on the audio ripping scene today. This is primarily because you can tweak it to your heart's content, and you will have better sounding files with smaller filesizes. On the other hand, OGG is an open-source format, and there are therefore no royalty issues associated with it. Plus, it gives better quality audio files, almost as good as AAC.



DMS MP301

And with this acceptance of alternative formats comes DRM (Digital Rights Management). AAC and WMA content can be uniquely protected using algorithms that will only let you play the content on some limited devices, including computers and portable players. DRM was devised to take care of illegal copying and sharing of content over the Internet. It has been there with all the new formats, and prevents illegal sharing of music. So a word of warning: if you like alternative formats such as AAC or Ogg, check if the songs that you download are protected by DRM or not, since that will ultimately let you (or not) play the song on your portable player. Songs you rip from CDs do not have DRM, unless you explicitly choose for it to be that way.

Portable Audio Players

Portable Audio Players can generally be classified as the Walkman, Discman and the digital audio player. Digital audio players can be further divided into solid-state and hard drive-based players. Each with its own set of advantages and drawbacks.

If you have a huge music collection, and want to transfer the entire collection to your portable player in one go, a hard drive-based portable player is the way to go. However, if you regularly need fresh music to listen to, and also do not want to invest money in a hard drive-based solution, a flash memory-based solution will work just fine.

FLASH-BASED PORTABLE AUDIO PLAYERS

All the players we received had two things in common. The first was that they could play MP3 songs (except for the Sony Network Walkman) and also act as portable data storage medium. Let's get our hands dirty then with these gizmos and see how they fared against each other.



Sony Network Walkman

Features

Before you choose to purchase a device like this, you need to decide whether your primary use for the device would be for listening to music or for portable data storage, or a mix of both. Most users opt for a combination of both. In this case, a minimum of 128 MB of memory will be required.

The players we received had memory capacities that varied from 128 MB to 256 MB. Higher-memory versions are also available. A 128 MB MP3 player can easily fit in 15 to 18 songs—this translates to around an hour of music. The MP3 players from ACi, MSI, Transcend, Sony, Samsung and Creative have 256 MB of storage space.

Any generic portable audio solution will perform all the functions that an MP3 player should. However, if an MP3 player could provide us with more useful features, that would be more value for money. The Umax Vega, Apacer AudioSteno AP510 and the Sony Network Walkman all feature memory card readers.

The upside to this feature is that you can not only store data onto a memory card that can be read by the player, but also play songs off it. The Apacer Audio Steno AP510 and the Network Walkman both feature docking stations, which come in handy while charging the players, as well as while transferring data onto the player at the same time.

Another interesting feature of the Apacer Audio Steno AP510 docking station is the stereo speakers. The catch is, you can only use the stereo speakers when the docking station is connected to the PC; besides, the speakers are quite tinny—you'd be better off with the bundled earphones.

The ACi Truly MP-301 stood out as a one-of-its-kind MP3 player. It is small, sleek device that offers a 65K colour DST display. You can view photos on it, read text files and also listen to music—all at the same time.

The Creative Rhomba NX, on the other hand, has a feature that will find favour with users who like to listen to FM. It has a built-in FM sensitivity option that lets you adjust the signal strength reception of the FM tuner.

The downside is that the player drains more juice from the battery if this feature is turned on.

For those who like to use portable digital audio players as a storage option as well, the



Ennyah Digisound II

Another unique portable audio player was the Samsung Yepp Sports YP-60, which is targeted towards those whose lifestyle includes regular sporting activities. In fact, this player will find favour with those who are health conscious, since it is the only one that features a heart beat rate monitor and a calorie counter.

Other features that we found particularly useful included the Line-in encoding option on the Creative Rhomba NX, S-Media and the Samsung models. This is helpful since your old Walkman with a cassette tape can be directly connected to the MP3 player, and the tape can be converted to MP3s using the Line-in encoding option. You can connect an external tape deck instead of a Walkman, or a microphone source, or an external FM tuner (if your player doesn't have one).

Customisable equalisers are a must in MP3 players. Most players only offered presets; some, such as the Sony, Samsung, Creative, ACi and S-Media, offered customisable equalisers.

Voice recording and FM recording were other features that some MP3 players came equipped with, and this adds to the versatility of the player.

None of the players, except the Sony Network Walkman and the Apacer AV220, supported voice recording. The FM recording feature, on the other hand, was a mixed bag: 12 out of the 21 players supported this feature.

Ergonomics And Ease Of Use

Ideally, a portable digital music player should be usable by any user—like a Walkman—apart from any advanced things that it does. Clearly marked, intuitively placed buttons make the experience worthwhile, not to mention the interface.

The Apacer AP510 had an excellent 3-line OLED display, while the ACi was in a league of its own with an icon-based display that lets you access all the features. The S-Media Butterfly has a very good interface, not to mention the sound quality, but the buttons are way too small.

The BenQ Joybee 120 had a single line LCD display, which was completely below par, and for most parts did not serve any purpose. The Samsung Yepp YP-T5 is an tiny player that will definitely appeal to women. It is the only player featuring a joystick-based controller for accessing menus, skipping tracks and volume control.

The interface here is very intuitive, and you can start right from the word go. The only issue is that the joystick is fairly small given the size of the player, and will be irritating to users with large fingers.

Build quality is another important factor, and the Umax Draco was bad in this department. The battery cover of this device is small and extremely

Syncing Lyrics On Your Portable Player

Listening to songs on a portable player is fun, but if you could display the lyrics for a song on the player, it would be absolutely fantastic! Players such as the Orite Music Cookie and the DMS MP301 player can let you do that.

Here's how you go about getting the lyrics for your songs. You can either play a song and search for the lyrics using a search engine using the song name as the keyword. Or, you can install a nifty little freeware called EvillLyrics, which displays the lyrics for the song as you play it on Winamp or Media player. You can then save the lyrics to a text file, and using the software bundled with the portable player, sync the lyrics to the player.



Orite Music Cookie

flimsy, and it required quite some effort just to insert a battery and put on the cover!

One of the most important things about any MP3 player are the earphones or headphones. The Apacer Audio Steno BP300 has cumbersome headphones with a bad finish. You can only use this MP3 player with the headphones for about a half hour before your ear starts aching.

The MSI MegaStick has the same kind of headphones bundled. The Creative, S-Media, Samsung and Sony earphones were the best that we listened to, especially the Sony and the Creative.

They not only scored well in the comfort department, but also provided excellent sound, although at very high levels the S-Media and the Samsung did show some distortion.

The last part is the portability factor. Almost all the players were quite light, except for the AudioSteno AP510, which was a bit bulky.

Performance

Performance is what finally matters. We played a variety of songs on each of the players and the response that some evoked was of pure pleasure, while others incited violence, with images of sledgehammers falling on them floating around our heads.

The Rhomba NX is a very good portable digital music player in terms of audio quality, and also acts as a pretty good portable storage system with USB 2.0 functionality. Similarly, the Samsung Yepp YP-T5 provided good audio quality results. The other mentionable players were the rest of the Creative players and the S-Media Butterfly.

In the area of portable storage, the AudioSteno AP220 acts as an extremely fast storage device; however, it is a mediocre MP3 player with the earphones only adding to its woes. On the other hand, the Sony is a very good player, but it comes with its own proprietary format called ATRAC, which is the only format the player will play.

So, if you want to transfer your MP3s or WMAs to the player, you will need to install the supplied SonicStage software, which will then convert the MP3s/WMA to the ATRAC format, and then transfer them to the player.

This is cumbersome and sometimes unviable. The conversion and transfer takes a lot of time, and the format takes away the fun of using the player.

Moreover, the ATRAC files are not only transferred to the player but are also stored on the computer's hard drive, needlessly cluttering it up. This is a major disadvantage of the Sony Network Walkman and users will soon reject it outright.

The S-Media Butterfly is a very good quality MP3 player, but we encountered some skipping while browsing through the track list.

Voice recording was another test that we carried out in this category. The implementation on each player was different, but mostly varied between recording either in WAV (ADPCM) or MP3 formats. The recording quality of the Sony and the Creatives were the best, while the S-Media Butterfly fell flat in this department.

Buying Tips

Here are a few buying tips to help you make up your mind.

- ▶ First, check the interface of the player and the build quality. An intuitive interface and buttons are to be counted as a positive for any player.
- ▶ If your travelling includes a lot of bumps and jerks, do not opt for a hard drive-based solution, no matter how lucrative a deal you may be getting. A flash-based solution will be the right one for you. However, if your travelling is less stressful, a hard drive-based player would be a very good buy.
- ▶ Check the earphones. Flimsy earphones are a strict no-no. Try fitting the earphones in your ear and check the comfort level. If it feels even remotely irritating, do not buy the set.
- ▶ Check the claimed battery life of the player. If it is rated at 10 hours plus, that is a positive.
- ▶ In solid state players, check for features such as voice recording and FM recording. If it fits within your budget, check for the rest of the criteria.
- ▶ Check the number of formats that the player can support. The more the better.
- ▶ Finally, check all the possible places that you can for the player you like. Web sites such as www.amazon.com and www.ebay.com offer excellent deals, and you might just be lucky enough to get one!

In both the data transfer tests, which included a real-world and a synthetic SiSoft Sandra test, the Apacer AP220 blew away the competition. None of the other players could even come close. The other players' scores were quite in the same range when it came to either the USB 1.1 or USB 2.0 data transfer tests.

The last test involved battery life, and the Sony Network Walkman zoomed way ahead of the competition with a whopping battery life of 34 hours! If only this thing supported MP3s, you could go on a train journey and forget about the batteries for the player.

The Apacer AP510 followed the Sony with another whopping 21.5 hours of battery life—if only the player were a bit smaller! The Umax Draco again put in a bad performance, giving only 4 hours to a battery.

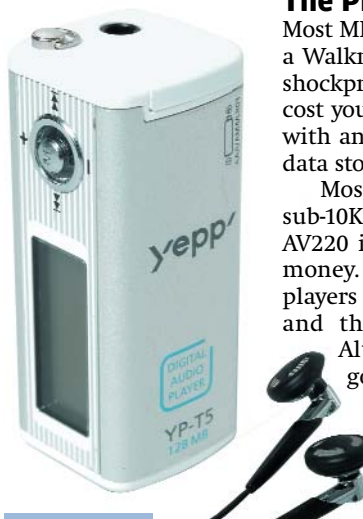
The ACi gives just an hour more than the Draco. The saving grace for the ACi is that it has an integrated rechargeable battery, and you can charge it using the accompanying USB cable.

The Price You Pay

Most MP3 players you get today cost the same as a Walkman did a few years ago. In fact, a good shockproof Discman from Panasonic or Sony will cost you just as much, and will not provide you with any of the functionalities such as portable data storage, FM recording or voice recording.

Most of the players that we received were sub-10K, and in fact, the Apacer Audio Steno AV220 is Rs 2,819, which is amazing value for money. Overall, the range of good quality MP3 players ranged between Rs 4,000 and Rs 7,000, and the functionalities ranged accordingly.

Although the Samsung players are pretty good in the performance and the audio quality departments, they simply do not justify the hefty price tags. The Transcend 256 MB is excellent for the price, since it offers you more data space, voice recording, and also plays WMA and MP3 files. The only things miss-



Samsung Yepp YPT5

ing are FM recording and an equaliser, but the price is justified.

The Sony Network Walkman is an excellent product—the sound is good, the compression ratio is better, but that's about it. It provides 256 MB of storage space, and is priced at Rs 29,990, which is unjustifiable: you could buy six Transcends at the same cost and have 1.5 GB of space in your hands! And if you are not interested in solid-state players, you can always buy an iPod, which is still Rs 3,000 or 4,000 less than the Sony.

Conclusion

Infighting is common when there are lots of contenders for the throne. The Creative players fought it out amongst themselves, especially among the MuVo TX, Rhomba NX and the MuVo Slim. While one offered more space and data storage portability, the latter offered excellent audio quality with great features.

The MuVo Slim was one of the sleekest MP3 players we have ever tested. The Samsung Yepp YP-T5 offered a host of features including Line-in encoding, and also gave excellent audio performance. But it lost because of price.

Special mention is in order for the ACi Truly MP301 MP3 player. Not only did it sport the largest of all the displays, it also offered functionalities such as Line-in encoding and FM recording, not to mention support for text files and jpg images. The screen quality can be improved, but its flaunt value is extremely good. It retails at Rs 6,999, and provides 256 MB of space—but loses out on battery life. If you want an MP3 player that you would like to use for only around an hour a day, this one will definitely not disappoint you.

Finally, it was the Rhomba NX that won the Best Buy Gold, the reason being that we were primarily testing portable digital music players and not portable storage options. The Rhomba NX did not offer too much storage space, but it did offer excellent audio clarity.

Its intuitive menu and well

Flash-based audio players are suitable for your daily commutes and general listening

placed buttons, not to mention the FM sensitivity feature, took it through to be the winner of our MP3 players comparison. The Creative MuVo Slim won the Best Buy Silver award because of its good battery life, audio quality and sleek looks.

MICRO HARD DRIVE BASED PORTABLE AUDIO PLAYERS

Flash-based audio players are limited in terms of storage capacity, and are therefore mainly suitable for your daily commutes and general listening. However, if you are a frequent traveller or find that one or two hours of music just isn't enough, micro hard drive portable audio players are the solution for you. These devices offer a good balance between storage capacity and pocketability. Here we take a look at the Apple iPod Mini and three contenders from Creative.

Features

On the storage space front, the iPod Mini offers 4 GB, while the Creative MuVo2 is available in capacities of 1.5 GB and 4 GB. The MuVo2 FM offers 5 GB. The large display on the iPod Mini is a pleasure to use; it displays six lines at a time, making browsing through hundreds of tracks easier.

The Creatives only have a two-line display. The Creative MuVo2 FM is the only model in this category to be bundled with a wired remote. For the others, you would have to purchase one separately.

The MuVo2 FM also boasts of an FM tuner and voice recording capabilities, features not present on the other contenders.

In terms of playback features, the Creative devices provide standard equaliser presets and also allow you to set the equaliser manually. The iPod Mini does not have a customisable equaliser, but makes up for it by offering about 22 presets.

Support for music formats in the Mini is also impressive—it includes support for AAC, MP3, WAV and Audible, in comparison to the Creatives, which support MP3, WMA and WAV. Additional features on the iPod include an alarm, a calendar, Contacts, and games. However, the internal battery in the iPod is not user-replaceable, in contrast to the Creative MuVo2 devices.

Ergonomics And Ease Of Use

The Creative MuVo2 players are designed the same way—square, and just under a hundred grams in weight. However, with its tubular shape, the smooth-finished iPod Mini is definitely more pocketable. Housed in an aluminium casing, the Mini is also more solidly built compared to the MuVo2 players, which have a plastic body. All three Creative MuVo2 players have the same controls and interface.

With a five-way navigation button and a Play/Pause button on the front, the menu interface is simple and does not require you to refer to the manual. The five-way button is replaced with a joystick on the MuVo2 FM, which makes browsing a little easier. However, the two line display leaves much to be desired, as it is



Creative Rhomba NX



Creative MuVo Slim

cumbersome to locate a track by scrolling through hundreds of stored ones.

The iPod Mini, on the other hand, has a much larger screen, and its click wheel allows for accelerated scrolling through tracks. The select button is in the centre of the touch-sensitive click wheel, and you can access the menu and playback functions through this single control, without using your other hand. It is very intuitive and makes life on the go easier.

Performance

The earphones provided with the iPod Mini provide excellent sound output and do not distort even at the maximum volume. They reproduce all types of music quite well, and will not disappoint audiophiles.

The output from the earphones of the Creative MuVo2 players is pretty much similar: we found them quite comfortable, and you will not get a earache after using them for hours. However, where the Creative MuVo2 scores best is battery life.

The iPod Mini gave us 7.5 hours of continuous playtime, whereas both the MuVo2 4GB as well as the FM 5GB gave us more than double that—15.5 hours.

Conclusion

We had a hard time deciding the winner between the iPod Mini and the Creative MuVo2 FM 5GB. Apart from the additional storage capacity, the latter also offers an FM tuner and voice recording. Moreover, the battery life is amazing.

The iPod Mini, on the other hand, has much better build quality and is extremely easy to use, especially while browsing through loads of tracks. Ease of use ultimately won over, and the iPod Mini gets the Best Buy Gold award. If battery life is extremely important, go for the Creative MuVo2 FM.

Earphones add to the pleasure of listening to music. Make sure you get your comfort level right with them



Apple iPod Mini

HARD DRIVE BASED PORTABLE AUDIO PLAYERS

Not all of us are happy carrying around a few MB of our favourite audio tracks. Some of us have GBs of audio collections, and need to have them wherever we go. Hard drive-based MP3 players are ideal for such audiophiles. With mammoth storage capacities, these devices are, however, heavier than micro hard drive-based and flash-based audio players. We have three players featured here, one each from Apple, Creative and S-Media.

Features

All three contenders featured the same storage capacity—20GB. The S-Media Cocopod was the only device in this category to boast of an FM tuner, voice recording and Line-in recording capabilities. The iPod offers both USB 2.0 and FireWire interfaces, and can play AAC, MP3, MP3 VBR, Apple Lossless, WAV, AIFF and Audible file formats.

Both the Creative Zen Touch and the Cocopod feature only a USB2.0 interface and only support MP3, WMA and WAV formats.

Apart from features such as alarm, calendar, notes, contacts and games, the iPod also has a rating feature that allows you to rate songs on the go. Tracks that are rated higher are repeated more often while in shuffle mode.

Tracks for the iPod can also be purchased online from the iTunes Music Store. The special features of the Zen Touch include an alphabetical search function and customisable touch sensitivity, while the Cocopod boasts of a bookmark feature that lets you play back from where you left off. It also has a very handy memory slot supporting SD and MMC cards. This can be used to transfer data on to the device.

Ergonomics And Ease Of Use

The Cocopod sports a roller scroll wheel placed inside a thumb recess on the front panel that also doubles up as a select control. It is flanked by a butterfly shaped four-way key that



Score Board

Brand	Model	Basic Specifications	Score	Price (Rs)
Apacer	Audio Steno BP300	128MB, 1 AAA, Voice Recording, 43gms	43.56	4530
Apacer	Audio Steno AV220	128MB, 1 AAA, 41gms	44.77	2819
Apacer	Audio Steno AP510	128MB, 1 AA, Voice Recording, FM tuner, FM recording, 83gms	46.52	9062
BenQ	Joybee 110	128MB, Rechargeable, 26gm	48.97	9500
BenQ	Joybee 120	128MB, Rechargeable, Voice Recording, FM tuner, FM recording, 24gms	52.10	10500
Creative	Nomad MuVo NX	128MB, 1 AAA, Voice Recording, 43gms	54.01	6299
Creative	MuVo Slim	128MB, Rechargeable, Voice Recording, FM tuner, FM recording, 34gms	58.24	6999
Creative	Rhomba NX	128MB, 2 AAA, Voice Recording, FM tuner, FM recording, 62gms	61.73	7399
Creative	MuVo TX	256MB, 1AAA, Voice Recording, 43gms	54.16	7899
DMS	MP301	256MB, Rechargeable, Voice Recording, FM tuner, FM recording, 50gms.	57.28	6999
Ennyah	DIGISound II DS601	128MB, 1 AAA, Voice Recording, FM tuner, FM recording, 57gms	52.36	4250
MSI	MegaStick	256MB, 1 AAA, Voice Recording, FM tuner, FM recording, 40gms	50.22	10000
Orite	Music Cookie	128MB, 1 AAA, Voice Recording, FM tuner, 42gms	44.96	4950
Samsung	Digital Audio Player Yepp YP-60	256MB, Rechargeable, Voice Recording, FM tuner, FM recording, 61gms	52.12	15995
Samsung	Digital Audio Player Yepp YP-55	128MB, 1 AAA, Voice Recording, FM tuner, FM recording, 61gm	51.97	10995
Samsung	Digital Audio Player Yepp YP-T5	128MB, 1 AAA, Voice Recording, FM tuner, FM recording, 35gm	56.28	10995
S-Media	Butterfly	128MB, Rechargeable, Voice Recording, FM tuner, FM recording, 62gms	55.24	8055
Sony	Network Walkman	256MB, Rechargeable, 54gms	51.55	29990
Transcend	JetFlash	256MB, 1AAA, Voice Recording, 36	44.04	5000
Umax	Vega	128MB, 1 AAA, Voice Recording, FM tuner, FM recording, 70gms	47.69	7000
Umax	Draco	128MB, 1 AAA, 50gms	42.78	4900



Score Board

Brand	Model	Basic Specifications	Score	Price (Rs)
Microdrive-based Players				
Apple	iPod Mini	4GB, Internal Lithium battery, USB2.0/FireWire, Contacts, Alarm, Games, 102gms	68.04	19500
Creative	MuVo2 1.5GB	1.5GB, Replaceable Lithium Battery, USB2.0, 91gms	60.08	14199
Creative	MuVo2 4GB	4GB, Replaceable Lithium Battery, USB2.0, 91gms	64.43	17299
Creative	MuVo2 FM 5GB	4GB, Replaceable Lithium Battery, FM, Voice Recording, USB2.0, 99gms	67.79	19899
HDD Based Players				
Apple	iPod 20GB	20GB, Internal Lithium battery, USB2.0/FireWire, Contacts, Alarm, Games, 158gms	68.83	22100
Creative	Zen Touch 20GB	20GB, Internal Lithium battery, USB2.0, 200gms	67.42	21599
S-Media	Cocopod	20GB, Internal Lithium battery, FM, Voice Recording, Line-in Recording, USB2.0, 158gms	54.07	18990

controls playback operations. The two volume keys are placed on either side, its main menu is icon-based. Vertical scrolling through menu options is simple, but scrolling through a very long list of songs is a nightmare. Moreover, it takes a long time to load track lists and play selected songs.

The Creative Zen Touch attempts to emulate the iPod by featuring a touch sensitive vertical scroll area. There is an OK button just above the vertical touch-area, and they are flanked by three buttons on either side. The buttons allow access to the menu and controlling playback.

The power button and two keys for controlling volume are located on the left side of the device. Scrolling here is not as intuitive as the click wheel on the iPod. It's hard to avoid hitting the OK button, or one of the menu buttons accidentally when scrolling, and the over-sensitive touchpad just sends you into the wrong menus.

The iPod scores the best in terms of its interface and ease of use.

Performance

For the performance test, there was no way that either the Apple iPod or the Creative Zen touch could compete with the S-Media Cocopod in terms of data transfer speeds.

In the audio performance tests, the iPod was in a class of its own. Listening to music is sheer pleasure on this baby—all the songs that we used in our tests came through crystal clear with no distortion at all. However, at high volumes, the Bass Booster equalizer humbles the bundled headphones.

The Creative Zen comes in second here, though nowhere close to the iPod. The Zen's

The Apple iPod is to hard drive players what Xerox is to photocopiers

sound quality is very good and clear with no evident distortion. However, as you pump up the volume, the treble overpower the bass, making it sound harsh. The earphones are of excellent build quality, and fit the ear snugly—even after hours of use, you will feel no discomfort.

The S-Media Cocopod disappointed us, and the earphones bundled with the device can only be described as sub-standard. Not wanting to base our decision on poor headphones, we plugged in Sennheiser MX300's and got much better sound quality.

However, there was still distortion at high volumes, and the treble sounded too harsh for comfort—even on the Sennheisers.

Battery life was one major criterion in our comparison test. The Creative Zen Touch provided us with an excellent battery life of 25 hours. It was followed by the Apple iPod at 15 hours, while the S-Media Cocopod fell flat on its face at just 5.5 hours. What's the point of a 20 GB hard drive, when you run out of battery before even listening to an iota of your collection.

Conclusion

The Apple iPod was chased insatiably by the Creative Zen—thanks to the Zen's superior battery life. The price difference between these two products is exactly Rs 501, which is nothing at this level—so you should base your buying decision solely on performance and features. The Apple iPod has been refined over a period of four generations, and has become to hard drive MP3 players what Xerox is to photocopiers. Its excellent ergonomics, intuitive user interface and fast loading times makes it Digit's Best Buy Gold winner in the hard drive-based portable audio player category.

However, the Creative Zen cannot be dismissed off-hand. It looks good, has a higher battery life and is marginally cheaper, but still needs a lot of work in terms of ergonomics and features if it wants to dethrone the iPod. ☑

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BEST BUY
digit
DECEMBER 2004



Apple iPod 20GB

Contact Sheet

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BenQ	BenQ India Pvt Ltd	022- 25705230	SalesEnquiryIn@BenQ.com	SalesEnquiryIn@BenQ.com
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Orite	Mediatech India	022-26361111	info@mediatechindia.com	info@mediatechindia.com
Transcend	Mediaman Infotech	022-23828100	sales@mediamangroup.com	sales@mediamangroup.com
S-Media	Xserve India (Pvt) Ltd	080- 5113 1001	info@xserves.com	info@xserves.com
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DMS	Allied Computer International (Asia) PLtd	022-56943260	sales@aci-asia.com	sales@aci-asia.com

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Megapixels, and Scrapped Processors

1 Google's founders, Larry Page and Sergey Brin visited India recently to inaugurate Google India's second R&D facility. Which Google offering will the Hyderabad centre focus on?
a. Synonyms b. Slangs
c. Adwords d. Formulas



2 Which tool helps you find email, files, chats and web pages you have visited with ease, "even when you are not online"?
a. Google Desktop Search b. MSN Messenger 6.2 c. Vivisimo's Clusty
d. Amazon's A9 Toolbar

3 Why should your ears have all the fun, goes the tagline of this new version of a popular device. It can store up to 25,000 photos apart from its standard features in its 40 GB and 60 GB variants. Name the device.
a. Sony LTO Ultrium 3 b. Apple iPod Photo c. Nikon Coolwalker MSV-01
d. Canon Digital IXUS

4 AMD launched two chips close on the heels Intel scrapping plans to build a P4 PC microprocessor, which had a clock speed of:
a. 2.5 GH b. 3 GH c. 5 GH d. 4GH

5 NYT columnist, David Orr lists Bookslut.com, Foetry.com,

Godawful.net and The Literary Dick as offbeat, but rather interesting, websites on which subject?
a. Digital Literature b. Digital Poetry c. Digital Crime d. Digital Innovations

6 Security experts say this popular e-mail service is vulnerable to hackers who can gain full access to a user's account and steal identities by knowing just the user name, whether or not the password is subsequently changed. Name the webmail service.
a. Hotmail b. Yahoo
c. Gmail d. AOL

7 A video-game fan whose console malfunctioned after less than a year of use, has sued a mammoth corporation in Los Angeles, saying he represents everyone who bought the console

in the US since its November 2001 launch. Name the brand.
a. Xbox b. PlayStation II
c. GameCube d. Game Boy Advance

8 Which popular but unconventional television news network will soon be available on mobile phones?
a. Fox News b. Naked News
c. MSNBC d. SkyNews

9 Name the technology giant that has launched what it claims to be the world's first 5-megapixel-camera phone.
a. Sony Ericsson b. Samsung c. Nokia d. BenQ

Last Month's Winner

The Winner of Check Your TQ for the month of November is Nishit Shah. Congratulations, Nishit!

Last Month's Answers

1. Linus Torvalds was honoured at The Economist's Third Annual Innovations Awards, 2004
2. The mysterious new chip is 'Cell'.
3. The electronics giant competing with market leader Apple Computer is Sony.
4. The Internet biggie poaching developers is Google.
5. The American ISP that has decided to dump MS anti-spam tool Sender ID is AOL.
6. The Hollywood film which tells

the story of a reporter trying save the world is 'Sky Captain And The World Of Tomorrow'.

7. The product being currently developed at Xerox PARC, that can display digital text is Electronic Paper.
8. India's satellite for educational services is EDUSAT.
9. Microsoft has recently released the source code for FlexWiki.
10. Sven Jaschan, employed by Securepoint, created two worms—NetSky and Sasser.

Got an interesting question? Send it in with the answer to editor@thinkdigit.com

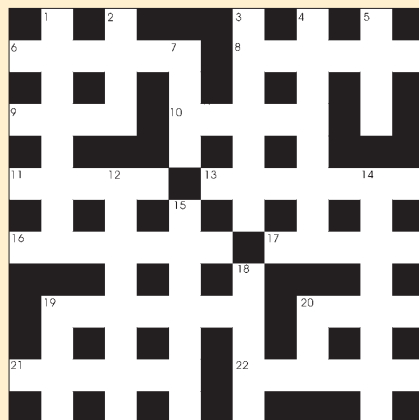
Crossword

Across

6. ___Xtreme, first ready to use High-End Gaming PC in India (6)
8. Short for electronic magazines (1,5)
9. Redundant Array of Independent Disks (abbr) (4)
10. To copy data to memory scatters roset (5)
11. Remove errors in a program (5)
13. A million binary pulses (7)
16. Learner of computers (7)
17. In cold ----, PC game (5)
19. Bad core wrongs this small image of lines and spaces representing an item (7)
20. Moving Picture Experts Group (abbr) (4)
21. Kodak or Canon manufactures this (6)
22. One millionth of a meter (6)

Down

1. Pre-release software sampling (4,4)
2. Intellectual games (4)
3. Find back lost data (7)
4. Security policies of programs confuses fill ware (8)
5. Data presented with alphanumeric characters (4)
7. A node in a network upsets shot (4)
12. An Internet Relay Chat network (8)
14. Name of a virus (1,4,3)
15. Short for information warfare (7)
18. Agreements (5)



19. Java ___ is an edible seed, we hear (4)
20. Short for Macintosh (3)



Win!

Send in your answers to the quiz to TQ@thinkdigit.com. If you get all 9 answers right, you could win a Canon PIXMA iP4000 printer!

The nVidia GeForce 6800 Ultra has 222 million transistors, which is the record for the maximum number of transistors on a chip.

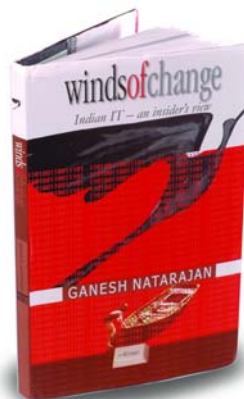
Did you know?

Winds of Change

LET IT BE said upfront: Ganesh Natarajan is not John Dvorak. Neither is he David Coursey. However, the former Aptech CEO and current vice-chairman and managing director of the Pune-based Zensar Technologies is a writer with informed opinions. As one of the most vocal leaders of the IT revolution of the mid-90s and later, Ganesh has been, in a manner of speaking, leading from the front.

With this book, he reports from that very front. A collection of his columns from a magazine, these writings reflect his deep-thinking abilities. He goes from personality profiles to events to industry trends to the state of the nation with the alacrity of an Olympian medley swimmer switching from backstroke to freestyle to butterfly—smooth and confident.

His writing style is chatty and jargon-free, making it accessible to non-techies. This is mainly because he writes from his experiences, and



because he does not sermonise.

He does fall into the trap of gazing into the crystal ball, though. It is an affliction of most columnists, but Ganesh does not go overboard here.

For instance, his views on the future of computer education and how the current teaching infrastructure would have to be killed, border on the radical, and did raise a few eyebrows when he wrote it. His rationale to do this, though, is foolproof, and it only takes around 400 words of his writing to convince any reader that he means well.

Winds of Change makes for a quick, yet intellectually stimulating read. It is a reflection of the progress the author himself has made in his career.

Sachin Kalbag

Winds Of Change

Publisher **Ameya Prakashan, Pune**

Author **Ganesh Natarajan**

E-mail **ulhas_latkar@rediffmail.com**

Price **Rs 225**

BOOKS

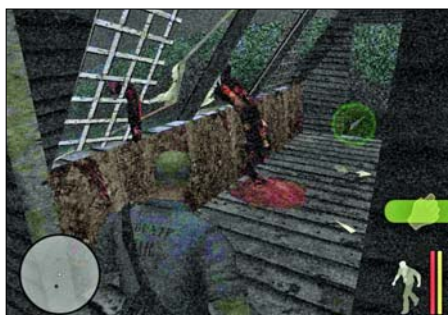
Manhunt

MANHUNT IS A grotesquely vicious third-person shooter. The game follows the spiralling decline of James Earl Cash into malevolent cold-hearted brutality. *Manhunt* is spread over 20 stages or scenes; each requiring you to fulfill certain objectives. In order to achieve this you must sneak, battle, bludgeon and sprint your way through armies of lunatics.

There's a limited variety of weapons in *Manhunt*. In the initial scenes, all you get are rudimentary weapons such as a baseball bat, or a knife.

Cash has to use shadows to camouflage himself while making a kill, or to hide when being chased. Stealth is of prime importance, because enemies are too tough to face openly. Overall, this game is by far one of the toughest this reviewer has played in recent times.

Character animations have been well done, and the game runs smoothly



throughout. The sound effects are detailed. *Manhunt* has expletive language, almost all of it involving f***. Overall, *Manhunt* is great if you have the capacity for intense gore.

Courtesy SKOAR!

Manhunt

Publisher **Rockstar Games**

Developer **Rockstar North**

Web site **www.rockstargames.com/manhunt**

System requirements **1 GHz CPU, 192 MB RAM, video card with 32 MB RAM, 2,300 MB free space**

Price **Rs 1,299**

GAMES

Harry Potter & The Prisoner Of Azkaban

HARRY POTTER IS a wizard in his third year of schooling at the Hogwarts School for Witchcraft and Wizardry. He learns that a dangerous criminal called Sirius Black has escaped from Azkaban, but what Harry doesn't know is that Sirius betrayed Harry's parents to Voldemort and he's now looking for Harry.

You start the game on the Hogwarts Express, which serves as a tutorial level. After reaching Hogwarts, Harry and his friends get caught up in classes, in which they have to complete a spell challenge, which is a dungeon-like level. The levels are fun to begin with, but get repetitive and boring.

After completing a challenge, you are whisked off either to another challenge or a mini-game. On completing your school challenges, you're whisked off to finish the entire



storyline. The graphics are smooth and polished. If you liked the first two games, HP3 is a game you must try.

Courtesy SKOAR!

Harry Potter & The Prisoner Of Azkaban

Publisher **EA Games** Developer **EA Games**

Web site **www.harrypotter.ea.com**

System Requirements **600 MHz CPU, 256 MB RAM, 32 MB graphics card, 820 MB free space, DirectX 9.0**

Price **\$ 29.99 (Rs 1,370)**

List Courtesy: Crossword Mumbai

Popular Science, November 2004

Every Step You Take, I will be watching you

GLOBAL POSITIONING IS a great technology. But like all great technologies, this one too could be a Frankenstein's monster. Michael Rosenwald on Popular Science explains how in this perceptive, well-researched piece.



They fell for each other in grade school, in the sweetest of ways. In fifth-grade music class, she played saxophone; he played the snare drum. In high school biology, she held the frog while he wielded the scalpel. It was the sort of love story immortalized endlessly in romance novels and Top 40 long-distance dedications. "I thought when I married him it really would be 'till death do us part'," she says now, still surprised that the marriage ended after 19 years. Ultimately, the romance had sputtered to a close, as so many love stories do. Unlike most love stories,

though, this ending involved satellites.

One day, six months after she filed for divorce, the woman's husband, Robert Sullivan, was searching the Internet when he came across an ad for the TravelEyes Tracking Unit, a GPS device that, when installed in a vehicle and later removed and connected to a computer, shows a digital map of every stop and turn the car has made, and even its speed. A person employing such a device knows as much about the car's recent whereabouts as he would if he'd been riding in it himself. Sullivan immediately placed an order; it seems he felt he could put such a contraption to good use.

This all unfolded five years ago in a small Colorado city near Boulder. He was a maintenance worker at a factory. She worked with handicapped students at the nearby university. They were, by her description, just simple people raising two sons and paying their bills, living the sort of anonymous existence politicians exalt when making pronouncements about "the American people." But among law-enforcement officials and victims' advocates, their story, and particularly Robert Sullivan's role, has become notorious. GPS-the Global Positioning System, which pinpoints a user's location by triangulating radio signals emitted by an array of satellites-was making its journey from military use to civilian ubiquity. At the time, GPS devices were being marketed to track delivery trucks and rental cars; early adopters were carrying them along on wilderness hikes to serve as high-tech breadcrumbs. In a stroke of inspiration, Sullivan co-opted the technology for his own purposes, and in so doing helped to steer stalking into the 21st century.

It was a remarkably undemanding mission. The Internet had made it possible to purchase novel gadgets of virtually any sort, regardless of where one lived. Sullivan didn't even install the device himself-he had his kids do the job. He called his wife over to the house, where they talked about the divorce proceedings. Meanwhile their teenage boys, whom Sullivan had convinced were being abandoned by their mother, went outside to "change the oil" in her car. Instead they installed the TravelEyes unit.

Feel like reading the entire piece? Visit snipurl.com/gpsterror

PCMag.com, November 16, 2004

Another Chapter In The Google-Microsoft War



JOHN C DVORAK is one of the most respected columnists in technology media. Here's why...

There's been a lot of gossip about the upcoming Google browser and its possible impact on Microsoft. It's hard to predict what will happen, but it won't surprise me if an all-out war between Google and Microsoft ensues. We are about to witness a repeat of the Netscape browser war-this time with a

different strategy.

It's unlikely that Google will ever sell its browser. The company has developed a strategy to make money on advertising. The strategy works, and it gives Google a clear edge over Microsoft; Google can give away everything.

Besides its premier search engine, Google recently started Gmail, which competes head-on with Hotmail and has even forced Hotmail to add more free storage for its users. Google News competes with MSN in a subtle but important way too, by providing a useful home page of news. The browser will draw a new battle line. I suspect that Google may well be on its way toward exercising the strategy that Netscape threatened years ago, when its executives asserted that they could take over the desktop. Google could be trying to make the browser its nexus in a desktop strategy to eliminate the need for Microsoft Windows.

I don't really think that Windows and Microsoft can be marginalized by a browser-centric environment that relies more and more on the Internet, remote-application servers, and no real operating environment. I think there is a place for such a system, but I'm not expecting to see anyone running Microsoft PowerPoint slides from the Internet rather than from local storage anytime soon. Furthermore, the current glut of inexpensive hard drives with capacities between 100GB and 250GB makes the current architectural model for the PC too practical to go away anytime in the near future. Still, not everybody needs a high-performance Windows machine with a 250GB hard drive. Microsoft could easily lose part of the market to any number of configurations. You can be sure that the company will see the Google browser as its biggest threat and find ways to thwart Google.

According to some valley gossip, Google is already raiding Microsoft for browser developers right out of the Microsoft Internet Explorer staff.

It's possible that the entire Google browser initiative is nothing more than a retribution maneuver, because Microsoft has recently made a lot of noise about the super search engine that it intends to roll out-a Google killer. When fully realized, this engine is supposed to be able to do natural-language queries, which have always been laughable.

Visit snipurl.com/aczc to read Dvorak's complete column

New York Times, November 18, 2004

The Top 10 Games of The Year



THIS YEAR, THE gaming industry surpassed the movie industry in terms of revenue, making it a landmark year for gaming freaks. Some of the best titles were released this year, and who are we to complain. Charles Herold of the New York Times gives his top 10 games of the year. It has been a great year for games.

Some, like Doom 3 and Fable, did not quite live up to the hype. Several of the

most promising ones, like Knights of the Old Republic II: The Sith Lords and Prince of Persia: Warrior Within, will not be released until after this column appears.

Even so, it is difficult to limit myself to a top-10 list. How can I leave out Pikmin 2 and the Suffering and the Chronicles of Riddick and Halo 2 and Curse of Blackmoor Manor and Sly 2: Band of Thieves and N.F.L. Street and Call of Duty? It's a shame it isn't this difficult every year.

BURNOUT 3: TAKEDOWN The ultimate arcade racing game, Burnout 3 is designed to drive the player into the state of giddy excitement that can only come from careering down freeways, swerving past passenger cars and trying to drive opponents off the road in a shower of glass shards and twisted metal. The game makes driving recklessly seem like so much fun that you shouldn't be allowed to sit behind the wheel of a real car until at least an hour after playing. (Developed by Criterion and published by Electronic Arts for PlayStation 2 and the Xbox; \$49.99; for ages 13 and older.)

THE SIMS 2 Unlike the rest of the known world, I was never addicted to the original life simulation game, The Sims, a cute little dollhouse that drew in a lot of people who were not otherwise interested in video games. I never felt much attachment to the game's tiny denizens. The Sims 2 refined the formula, making the characters more realistic (they age now), the situations more involving and surprising, and the interface more fluid. It has been a while since I played the game, yet I still think of my Sims as being alive. I hope they are doing O.K. without me. (Developed by Maxis and published by Electronic Arts for Windows 98 and later; Macintosh version scheduled for spring; \$49.99; for ages 13 and older.)

CITY OF HEROES The notion of a city overflowing with superheroes was mocked in the Tick comic books, but the online role-playing game City of Heroes makes it seem like a pretty good idea. The degree of customization in looks and powers allows every superhero to be different, making the game as much about coming up with the coolest design as about saving the world. (Developed by Cryptic Studios and published by NCsoft for Windows 98 and later; \$39.99 plus monthly subscription fee; for ages 13 and older.)

To read the complete list of the top 10 games of the year according to The New York Times, go to snipurl.com/top10games

Travel with world-famous photographer **Steve McCurry** as he captures the Spirit of Angkor with the **Cyber-shot F828** digital still camera.

"Capturing the timeless glory of Angkor requires superior picture quality. With the Cyber-shot F828, I can take pictures at 8.0 Mega Pixels and blow them up to A3 size without losing clarity. That's impressive."

Powerful. Brilliant. Deeply evocative. Words that describe the work of world-famous National Geographic photographer Steve McCurry. Now, Steve travels to magnificent Angkor where he captures the progress of the ancient world and the modern world. The F828 is the perfect camera for him. In his words, "The F828 is a powerful, user-friendly camera with a long battery life, the F828 is a powerful, user-friendly camera with a long battery life, the F828 is a powerful, user-friendly camera with a long battery life." In addition, its powerful 8.0 Mega Pixels resolution gives perfect reproduction up to A3 size, while its unique 4-Color Super HAD CCD and revolutionary Real Imaging Processor deliver true-to-life color accuracy. "Impressive," Steve comments. "This is the camera many photo enthusiasts have been waiting for."

SONY Cyber-shot

☑ You can do it too!

Apart from selling you the idea that you can take pictures as good as the ones that Steve McCurry does, the beauty here is in the progression. The man and his camera; then a couple of shots; and then, the camera that makes it all possible.

Wildlife as Canon sees it

Bird of prey or bird of play? New Zealand's kea is decidedly the latter. The feisty parrot will play with nearly any object: twigs, stones or whatever catches its fancy. Romping in the snow is a favorite pastime, as is socializing with other keas. The bold bird even approaches hikers with little fear but much curiosity. A quick learner, the kea is able to adapt readily to new situations. When threatened by introduced predators, for instance, it responded by moving to higher elevations. But is that enough? A number of human activities—from farming practices to waste dumping—threaten to end the kea's fun and games forever.

As an active, committed global corporation, we join worldwide efforts to promote awareness of endangered species. Just one way we are working to make the world a better place—today and tomorrow.

Canon

☑ There's lots of pics out there waiting to be taken

This ad hits home with the message that the world is beautiful, and that Canon can help you capture all that beauty—note the subtle effect of highlighting the subject more than the brand.

Dog Eats Phone!

A dog in Turkey recently ate its owner's cell phone. The owner discovered it only when he dialled the number and heard something ringing in the dog's stomach. The owner, a petrol station attendant, initially thought the phone had been stolen by a motorist filling fuel.



Humans Often Responsible For Data Loss

Data recovery experts say that human behaviour is to blame in many cases of data loss. One executive recently froze his crashed hard disk thinking it would be fixed. Another man got so angry with his laptop that he tried to flush it down the toilet.



Escape

CRIME DOES PAY

Virus Writer Turns Software Pro

A one-time member of the 29A virus-writing group, Benny, 22, is now working as the main developer of Czech firm Zoner Anti-Virus (ZAV). Benny was involved in the computer virus underground for five years, culminating in his membership of 29A (hexadecimal for "666"). 29A is well known for developing proof-of-concept code, not for mass-mailing viruses.

Zoner hired Benny to develop security software to protect servers run by Zoner's Internet division.

Most anti-virus firms refuse to employ virus writers because it's bad for public relations. In general, the industry wants to distance itself from malware authors, and to discourage the idea that writing viruses is a path into a lucrative career in computer security. There's

also the concern that potential customers could be put off from buying security software written by someone who once used to create malicious code.

Although the rehabilitation of virus writers is to be encouraged, it's questionable whether reformed virus writers even belong in the IT security industry. Anti-virus firms say that the skills needed to develop security software are different from those needed to write malicious code.

NO PC FOR YOU

Schoolboy Sues Mother

A 11-year-old in Xingzheng in China took his mother to court because she refused to buy him a PC.

The schoolboy's mother had promised him a computer if he got more than 94 per cent for his school-work. However, despite the boy scoring 97 per cent, his mother refused to get him the PC he so badly wanted. She cited lack of money as the reason.

The boy then took his mother to court in an effort to make her honour the verbal agreement. The judge reconciled the pair at the hearing.

DATED ONLY FOR THE SEX

Serial Dater Banned

Fifty-five-year-old Clive Worth, of Llanelli, Wales, arranged, over a period of five years, 119 dates through DatingDirect.com,

UNUSABLE!



indiasnews.com

Indiasnews.com is supposed to be a one-stop news site. There is a collection of links to various news items across several major online Indian news sites. Each click even opens up a nice new window with the news item. But the folks at Indiasnews.com don't seem to have got the idea that a news site needs to be updated regularly—preferably, daily. As of the November 25, every single news link pointed to news from November 4! Perhaps they update the site once a month...

Win!

My Desktop

Think you have the most beautiful, most innovative desktop around? Send it to mydesktop@thinkdigit.com, and Digit will publish the most eye-catching of them each month.



The winner will receive a KUSBTD1/128FE USB stick worth Rs 1,300. This month's winner is Abhimanyu Ghoshal.

Sponsored by



ON A WING: A dock, PNG icons, Winamp 5, Talisman 2.8 (and transparencies!) This desktop flutters right onto our hearts. Sent by Abhimanyu Ghoshal

a UK-based Web dating service. Most of the dates ended with sex. The agency received complaints about Worth's "lack of commitment," and he was struck off their list.

Worth told the *Mirror* tabloid: "I'm gutted about being kicked out. I've done nothing wrong. The agency said they received complaints because women were travelling to meet me and wanted commitment, but I didn't. But it's just that I haven't met the right woman yet."

Worth also said he would not take the ban lying down, and vowed to sign up with another agency—and continue his quest for the right woman until he's 80.

DigiPick of the month



WIN!

A World Connect adaptor by Travel Pac worth Rs 695 just by sharing an amusing picture with a tech angle to it.

Send your picture to digipick@thinkdigit.com.

The prize-winning picture will be published each month.

So here's where the
Deep Web is!

This month's winner is
Mathew Jacob from
Bangalore

World Connect adaptor
by Travel Pac

A combination of various power plugs, it acts much like a universal plug. You can plug in anything, anywhere. An inbuilt fuse protects your equipment. There is also surge protection.



WIRELESS IS THE ANSWER

The Internet: A Teenager

According to experts at a round-table discussion of the TechNet Innovation Summit at The Mountain View, the Internet is still in its adolescent stage. The experts, according to Reuters, said that the Net's largest opportunities lay in bringing in new, "unimaginable" wireless services. They couldn't say what the services were.

Bill Joy, co-founder and former chief scientist of Sun Microsystems, said that there are many ways in which devices will be connected, and there will be many "kinds of Web." He foresees a personal Web, an

information Web and an entertainment Web, amongst others.

Venture capitalist John Doerr told the conference that venture capitalists who oversaw the birth, first steps, and primary school of the Internet were "only just beginning to open their chequebooks again to send it to college." Doerr also said that the industry had returned to pre-1999 funding and valuation levels for new ventures. The smart money was on new ways to use wireless technology to expand the Web, and Wi-Fi is seen as the best bet.

LIVE HUNTING VIA ADSL

Ready, Aim, Click!

Live-shot.com, the Lbrainchild of Texas resident John Underwood, currently offers the shooting of paper targets via the Internet. Basically, shooters use their broadband connection to get a view of a real scene with paper targets in them, take aim from their computer, and shoot using

their mouse. When they shoot, a real rifle goes off.

What's at issue here is that Underwood has plans to extend his site to the shooting of game on his Texas ranch. And Texas wildlife officials are up in arms over this, Reuters reports. Underwood has already spent \$10,000 to construct a platform-mounted gun and camera on his ranch. The results of a shot can be mailed to the user as a DVD recording, or the actual animal that was shot can be sent to the shooter, too.

Underwood is enthusiastic: the scheme could appeal to "disabled hunters unable to get out in the woods or distant hunters who cannot afford a trip to Texas."

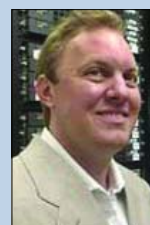
The authorities do not like the idea. Texas Parks and Wildlife Department wildlife director Mike Berger wants a change in state laws that would require hunters to be physically present at a kill.

Underwood feels online hunting is the next logical step in the technological evolution of the sport of hunting: "First it was rocks and clubs, then we sharpened it and put it on a

People Who Changed Computing

Marc Andreessen

Marc Andreessen was a co-author of the Mosaic browser and co-creator of the Netscape



browser. Most of the browsers available in the early '90s and late '80s were for Unix

machines which were expensive. This restricted the use of Web to mostly academics and engineers. Andreessen decided to develop a browser that was easier to use and more graphically rich. In 1992, Andreessen, along with fellow NCSA employee Eric Bina, created a new browser—Mosaic. Mosaic was much more sophisticated graphically than other browsers of the time.

In mid-1994, Mosaic Communications Corp. was officially incorporated in Mountain View, California with Andreessen as the Vice President (Technology) of the new company. As the original Mosaic was created for the University, it had to be left back and a new product had created.

This made way for the new browser—Netscape. On October 13, 1994, Mosaic Netscape was posted for download on the Internet.

Netscape ended up being freely available, though in 1996, with Mosaic and the Netscape browser, Andreessen's ideas created a platform that mass-enabled individuals to access the Internet. Today, Andreessen is Chairman and Co-founder of Opsware Inc, the leading provider of data centre automation software.



Bluff

YOUR WAY THROUGH

GPS

GPS stands for Global Positioning System. People mainly use it in their cars for navigation—the GPS satellite system can pinpoint where you are on the globe. The system was initially designed for, and is operated by, the US military. To pretend you know all about the system, say all the following without batting an eyelid.

☒ “It’s all about satellites and offsets, you know! Four satellite signals compute your position in three dimensions and the time offset in the receiver clock.”

☒ “GPS is everywhere! Soon you will have GPS built into your smartphone and, you know, you’ll know whether I am in my bathroom or in my bedroom.” (This is not realistic, but remember you are bluffing!)

☒ “It’s a wonderful thought, all those satellites out there monitoring where I am. The GPS Operational Constellation has 24 satellites orbiting Earth every 12 hours. The orbit altitude of those satellites is crazy! And with all those orbital planes equally spaced—60 degrees apart... in fact, they’re inclined at about 55 degrees with respect to the equatorial plane.” (You’re got to speak fast when you’re saying this. Make sure you say the keywords—“orbital planes” and so on—loudly.)

☒ When someone asks you how it’s all controlled, say with a wave of the hand, “It’s all from Colorado. The Schriever Air Force Base is where it’s at.”

☒ Now if someone gets inquisitive and asks how it all works, you’ll need a good memory. Memorise the following: “Position is determined from multiple pseudo-range measurements at a single measurement epoch. The pseudo-range measurements are used together with SV position estimates based on the ephemeris data each SV sends. That’s how they figure out where you are.”

Simple, eh?

Party Time!

You know how it is—life passes you by and you don’t even realise it. Then one day, you find out that you just did not have fun. And by then, it is too late.

At Digit, we would hate it if that were to happen. So, we have an annual jig called the Diwali party, where everyone (and we mean *everyone*) and their dear ones come to Jasubhai Digital Media’s headquarters in Navi Mumbai, and have the blast of a lifetime.

This time was no different. Kabir “the only guy who uses the gym” Malkani, and Digit’s Sachin “one of the remaining 199 guys who don’t use the gym” Kalbag were given the responsibility of organising the party.

Elizabeth, Bela, Riticha, Shailesh, Papiha, Nagesh, the Events telecalling team, Garfield, Ronak, Nilanjan, Chetan,

Pratap Singh, Aanand, Vijay, Ashwin, Rohini, Shyam, Viren, Ambarish, Kruttika, Deepika, Robert, and the list goes on—just about everyone pitched in to make it a grand success. People sang, people danced, jugglers ate swords, clowns danced, skeletons scared people, Scooby-Do, Popeye, and Noddy enthralled the kids, and expectedly, the audience clapped.

The team from Indian Architect and Builder then

had the most heartwarming event of the day—one candle was lit, and flame was then passed on to every single Jasubhai group team member to signify the commitment, the unity and the passion that each individual possesses.

Elizabeth says she has already begun practising for the next year’s party. Until reports last came in, others were about to follow.

DIGIT DIARY

stick. Then there was the bow and arrow, black powder, smokeless power and optics. Maybe this is the next technological step out there.”



One impediment, though, is that not everyone has the kind of broadband required for the virtual shooting to happen. So, Underwood’s cashing in on his scheme, as well as the fate of several species of wildlife, now depends on the widespread deployment of ADSL.

2.5 BILLION PIXELS IN A PIC

World’s Largest Digi-pic!

The Netherlands Organisation for Applied Scientific Research

claims to have produced the largest digital panoramic photo in the world. At 2.5 billion pixels, the picture is 500 times larger than what a modern five-megapixel consumer-grade camera can produce.

Shot from the top of the Electrical Engineering faculty of Delft University, at a height of about 100 metres, using an ordinary Nikon D1x and a 400 mm lens, the photograph shows the town of Delft and its surroundings in the autumn of 2004. If this photo were to be printed, the photographers say, it would measure 6.67 m by 2.67 m at 300 dpi.

MS STOLE YOGA GAME

Pulp Fiction Writer Sues Microsoft

Roger Avary, who won an Oscar for writing *Pulp Fiction* with Quentin Tarantino, is suing the software giant alleging it stole his idea for a yoga game. Avary claims Microsoft used his ideas in a Yoga game for the Xbox designed with ResponDesign called

Yoursell!Fitness.

Avary, who offers consultantancy services to games makers, claims he had a series of meetings with Microsoft in late 2002 and 2003 to attract more young women to playing games on the Xbox. Avary outlined his idea for a yoga game to them. He handed over notes but heard nothing back until he was asked to sign away his rights to the idea. He claims Microsoft executives loved his idea for a yoga workout game and described it as “the next killer app for Xbox.”

Ted Spooner, chief executive at ResponDesign, discounts Avary’s claim, and says that the idea was a wholly original creation of his company and made before Avary met Microsoft.

FIRE AT KENNEDY’S MOTORCADE

JFK’s Family Condemns Murder Game

A new computer game, *JFK: Reloaded*, in which players assume the role of

whatweretheythinking.com



Not everyone is excited by technology. Some people will do anything to get away from it, especially the pests disguised as mobile devices. Smart phones and dumb, the latest to the dated, from Nokias to Siemens, phones will always ring. Like sadistic children, they will always disturb you when you least want them to. Even if you turn the darn things on silent, they will vibrate so violently in

your pocket that people start calling you Elvis.

Bet you are wishing you could take a sledge hammer to your mobile right now, right? Hang on, not so fast...

What's gorgeous, has long legs, a beautiful smile, and for the right price, will let you watch as she does your bidding? All right, *STOP!* Get that mind out of the gutter! We are talking about the models at smashmyphone.com. Anyone can break their own phones—and many have; but nothing beats sending your phone to smashmyphone.com, choosing one of the exquisite female “technicians” and then waiting for your video clip and photographs. You will get the pleasure of watching your phone get “fixed” (for good!) by the gorgeous technician! Actually there is something that beats that—getting your colleagues’ or wife’s or nagging relative’s phone “fixed” would be a lot more fun. Remember, you can also make special requests, like asking the model to drive her sports car over your irritating phone, or stamping it with her heels, using hammers, etc.

Robert Sovereign-Smith

Lee Harvey Oswald and fire at President Kennedy’s motorcade, has been condemned as “despicable” by the former US President’s family. The player who most accurately recreates Oswald’s three fatal shots will win a \$100,000 competition.

The game was released on the Net to coincide with the 41st anniversary of JFK’s assassination in Dallas. Software company Traffic, which created the game, claims it will help dispel the conspiracy theories that surround JFK’s death.

ONLINE CREMATION

Indian Site To Screen Funerals Online

Designers of an Indian high-tech crematorium say they will soon screen funerals online, so that

non-resident Gujaratis in the US, the UK, and other places, who can’t make it, will be able to watch the last rites of their loved ones. The Web site will be called www.mokshadham.org. The site is expected to be live by June.

The scheme is part of a high tech crematorium to be built in Vadodara and funded by Indian Petrochemicals. The other undertakers are the Vadodara Municipal Corporation (VMC) and the local Rotary Club.

Funerals will be broadcast on the Web only upon the request of relatives. A fee will be charged, and only registered users will be allowed to watch the cremation. Users can also e-mail condolence messages and chat with relatives. The facilities would be offered to non-resident Gujaratis and their family members locally for a nominal fee, said a VMC official. ■

Compiled by Ram Mohan Rao

Blog WATCH

Here’s taking a look at a few riveting posts from the world of blogs. This month, there’s stuff about “Robust Statistics”—which, some say, is a technique that was able to predict the US election results with almost 100 per cent accuracy. Then there’s something about *Amar Chitra Katha*—if you are old enough, you probably know the series. We also take a look at two serious privacy concerns.

BoingBoing

<http://snipurl.com/awtn>

The Ramayana in comic-book form

Avi Solomon says, “*Ramayana*, the classic Indian epic, is online in ‘graphic novel’ form! This is part of the *Amar Chitra Katha* series conceived by Anant Pai, who was the pioneer in using comics to reintroduce India’s mythological and historical treasures to its alienated youth.

BoingBoing reader Suresh Venkat says, “Many Indians of a certain age—myself included—grew up devouring *Amar Chitra Katha*. I didn’t realize that they count as ‘graphic novels.’ I guess I was on the cutting edge even then ...”

Suresh

<http://snipurl.com/awto>

A victory for robust statistics?

In all the brouhaha over election predictions, it is worth observing that robust statistics scored a clear victory. According to Wes Colley and J. Richard Gott, merely taking the median of all polls in the last month was good enough to predict the election outcome with almost 100 per cent accuracy.

So what is a robust statistic? One way of defining it is that it is a statistic on a set of numbers that requires at least a constant fraction of the input to go to infinity before the statistic itself goes to infinity. For the median, this number is 50 per cent; however, only one number needs to go to infinity to pull the mean along with it.

John Battelle

<http://snipurl.com/awtp>

As Search History Develops, an Implication or Two

The Palo Alto Medical Foundation is warning against the use of Google Desktop. The Foundation even published a FAQ about it. From that document:

“How does this affect me? If this tool has been installed on a PC that you are using, it is possible for your private health information viewed through PAMFOnline to be cached on the computer’s hard drive and retrieved later by someone else.

“What can I do about it? If you uncheck the “Include Secure Pages (HTTPS)” option, the tool will no longer be able to retrieve secure PAMFOnline pages.

This is one example of what I am sure will be a long, slow awakening to the power and potential of having search history in our lives.”

BoingBoing

<http://snipurl.com/awtp>

Color laser printers add hidden ID number to printouts

Colour laser printer manufacturers encode each printout with the printer’s serial number so they can trace it back to you if you are counterfeiting bills. They can trace it back to you for anything else as well. How long have they been doing this? Why isn’t it common knowledge? What other ways to track our lives have been implemented without a big announcement?



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build such kind of software at such a low price, they told me that if the local hardware vendor could give it to them for free, why did I charge so high? I did not know how to react. Public awareness of piracy, I have realised, is almost zero in many places in India.

The truth is that our government and big MNCs have not given any option to our citizens, but to use pirated software. After all, how many people are able to afford the right software at the exorbitant prices?

Maybe the government in collaboration with software giants like Microsoft, Oracle, Adobe, etc, could build a software centre in every Indian city that helps people buy software at reasonable rates so that piracy is minimised.

Pratik Dutta
Burdwan

The Editor replies:

Dear Pratik,

It is sad, but true, that a majority of software used in India is pirated. This is the same case in China, south-east Asia, and Africa, where developing economies find it difficult to come to terms with high cost of software.

Software cost is a piquant issue—developing companies say they price software based on the amount invested, manhours spent, the intellectual capital invested in developing the software, the royalties, etc. On the other hand, customers say the same software could be priced much lower to make it accessible to several more people.

It is a debate that will rage for quite some time to come. Having said that, let me congratulate you on the stand you took against piracy, even if it meant you lost a couple of customers.

The Blame Game

Your November editorial 'How Broad Is Your Broadband?' asked the ISPs the right questions. However, I wish to share and highlight some of my broadband experiences. It is not that broadband

speeds of more than 256 Kbps are not available. In Hyderabad, where I stay, I have two connections at home, both being data transfer packages. Both these services have given me no cause for complaint, and typical speeds on the Sify connection is around 240-250 Kbps, whereas my other service provider Beam gives me speeds of up to 400 Kbps.

These are speeds I checked with McAfee Speedometer, CNET Bandwidth Meter, and a couple of other sites.

The problem with broadband is not that ISPs do not have bandwidth, but that customers themselves do not want broadband at the rates offered by them. For instance, when I called up my local broadband ISP, the person told me that only one in 20 customers ask for high speed connections. Most customers want a flat-fee (lowest price) package, and are willing to settle for 32 to 48 Kbps for unlimited usage!

Quality of connections also vary from point to point even within the same city. Besides, I do not think speeds beyond 512 Kbps would add any value to most home users, except if they are watching movies on pay-per-view Web sites that stream data at a rate of 512 Kbps.

Indians, being price-conscious, are wary of high-speed connections because of high bandwidth costs. Compare this with Singapore where ISPs routinely offer 3 Mbps connections for home users. In Malaysia, it is common for cyber cafes to host at least 40 simultaneous persons playing online games.

Therefore, I do not think that ISPs alone are to blame for the broadband mess in India.

Saketh Ram
Via e-mail

The Editor replies:

Dear Saketh,

That was a very perceptive analysis. While I agree that ISPs alone are not responsible for the broadband mess in India, I also feel they have a great role to play in evangelising this service. In a price-sensitive market like India, both the ISPs and the government should realise that freeing up bandwidth will only lead to greater usage of broadband, and over a period, reduce costs.

A good example would be the use cellular services in India. When they were first launched, India had the most expensive telecommunications costs. Now India has one of the cheapest cellular services in the world.

SMS Spk—A Boon Or A Curse

I am an e-mail and SMS addict, and an early adopter of technology innovations. Therefore, I can identify well with the article, "The Bending of the Rules" (Digit, November 2004).

Examples of 'SMS-speak' should not be classified as works of art, right now. Purely because we do not use SMS-speak while conversing with each other (and I suspect it would be rather difficult to do that!). More importantly, body language itself is an integral part of one-to-one human communication. As Dr Jill Walker puts it, "SMS-speak should stay the way it is—another mode of communication." She also says that 'SMS-speak' is "creative, sophisticated and can have poetic beauty when used well."

My perspective is that the creativity, sophistication and poetic beauty be attributed to the thought rather than the mode of expression.

Let me elucidate. I have a friend who composes great limericks, and is an SMS-junkie to boot. These days he sends me his creative gems via 'SMS-speak'. The beauty of the verse is not lost in 'translation' to SMS-speak, if you quickly understand what the verse is like in 'proper' English. But to a layman, the entire message could be mindless gibberish.

The moot point here, I suppose, is communication, and on that point 'SMS-speak' wins hands down. But if it were to be taken as an art, we need to answer a few pertinent questions:

Chinese writer Qian Fuchang's novel way of publishing a novel on SMS raises the question whether this work should be preserved in 'SMS-speak', and be considered a novelty, or 'deciphered' into 'proper' English and saved for posterity?

Academics should also be kept free of 'SMS-speak', except while communicating informally. If not, we need to ask whether we want our future generations to converse succinctly, or in code.

Thirdly, 'proper' English should be encouraged in face-to-face communications, as a person who speaks the language properly would have less chance of learning 'wrong' English from SMS-speak.

Abhik Sen
Kolkata

LETTER
OF THE
MONTH

Editorial

How Broad Is Your Broadband?

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Tabloid TECH

People And Events That Grabbed Headlines—For Better Or For Worse

Are They For Real?

Busty Dutch actress Georgina Verbaan has posted X-rays of her bodily assets on her Web site to prove they are real and not silicone. She wants to disprove claims that she's had implants, and what's more, she warns that she will sue anyone who says otherwise. The X-rays are at www2.georginaverbaan.nl. You'll need to know a little bit of

Dutch to navigate through the site, but you are sure to find the photos—just look for the word “X-ray.”

Verbaan shot to stardom in Holland as the 16-year-old star of soap-opera “Goede Tijden Slechte Tijden,” or “Good Times Bad Times,” in the 1990s.

A recent model shoot by the now 25-year-old Verbaan sparked speculation over whether her assets were real.

EBay Mailing Out Snail-mail

Now this one has us foxed. Why does EBay need to send out catalogues via postal mail? But that's what the company has been doing recently. It has mailed out “several million” holiday catalogues, a spokesperson said.

They are also doing TV and newspaper ads.

The idea is to introduce online auctions to people who have never used the Internet. But how many such people exist in the United States? And even considering the few folks who have never been online, how many of them are likely to go online after being egged on by catalogues from EBay? This is a real tricky one.



Georgina Verbaan has used the Web to tell the world her assets are real

Umm..., Does MS Use Firefox?

Late November, Israeli Web site NRG Maariv filed a story claiming Microsoft uses the Firefox browser. The article, by Ido Kenan, said that in an Associated Press story about the MSN Search beta, the credit for a screenshot goes to AP/Photo/HO/Microsoft. “HO,” means “hand out.”

There seems to be proof, available at www.nrg.co.il/online/10/ART/825/507.html. The site says: “Alert reader Dror

Levin read a review of the new MSN Search on the *Seattle Post Intelligencer*.

He noticed something strange about the screenshot in the article, found a larger version of it and was surprised to find out that while the OS was Windows XP, the browser used was Firefox.

The photo credit says ‘(AP Photo/HO /Microsoft),’ which means it was distributed to AP by Microsoft.”

MS And Piracy In Bangladesh

What has prompted Microsoft to sink to the level of demanding that piracy be curtailed in—of all places—Bangladesh, one of the poorest countries in the world? The fact is that CDs of Microsoft software are available for less than a dollar in Bangladesh, but the authorities there have enough on their plates already. Think floods and famines.

However, Feroz Mahmud, Microsoft's new country manager for Bangladesh, will be seeing government officials about the problem, and demand that something be done to arrest piracy suspects.

Microsoft Bangladesh, by the way, has a staff of 14. And if we remember the chain e-mail correctly, wasn't Bill Gates worth more than the GDP of Bangladesh?

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