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digit

YOUR TECHNOLOGY NAVIGATOR



2008 COLLECTOR'S EDITION

2008
collector's
edition

2008

2008
collector's
edition

2008
collector's
edition

2008
collector's
edition

Editorial

Never Judge A Book...

YES, I KNOW it's corny; but just like everything else that sounds hackneyed, this cliché is also very true.

There's a little story behind every detail of *Digit*, from the planning process to the printing, packaging and finally the dispatch, when it reaches hundreds of cities and towns across India, and abroad. Although we have this tiny little section in *Escape* called *Digit Diary* that tries to give you a little insight into our lives here at *Digit*, that is mostly about the funny stuff that happens every month. However, it's not all fun and games here, and we put in some very serious work to bring out your favourite technology magazine — a lot earlier, over the past few months, I might add.

So what makes this cover so special? Why am I writing about magazine covers, when I could be writing something witty, informative and jargon filled (according to a reader's letter) instead?

After days of looking at options and yet more options for the cover, trying to cram everything possible that's in this issue on to the cover and the packaging, we got nowhere. It wasn't until a quite frustrated publishing director blurted out, "Let's just leave it blank!" that we had our light-bulb moment. Although the idea stems from the frustration of unsuccessfully trying to cram in too much, it's not the reason for our simple cover. Instead it's a reinforcement of our ideology.

The colour white, is generally associated with simplicity, honesty, loyalty, love and inspiration.

As long-term *Digit* readers will testify, whether it's our language or our visuals, we aim to take the complex world of technology, and simplify it for you every month.

Through our monthly tests, we also aim to cut through all the hype and jargon, and give you honest advice, to help you make the right buying decisions. We also strive to give you as much as we can for your hard-earned money, and promise to do even more in the future.

We wanted to put something clean and uncluttered on the stands, at a time when the norm for magazines seems to be to cover themselves in bling — gaudy colours and in-your-face headings. Let us know what you think, because this is also our way of telling you that we will consistently innovate and change, but remain true to your needs and listen to your suggestions.

After all, it's your love for technology, and for *Digit*, that has helped us to convincingly thrash any would-be claimants to the number one position that we've consistently held since our launch. It's your letters, feedback on the forum, and obviously the large numbers of you,



Robert Sovereign-Smith, Editor

“it's not what's on covers that matter, but what's between them...”

the silent majority that buys *Digit* regularly, who inspire us to consistently better ourselves.

In my view, it's not what's on covers that matter, but what's between them, and *Digit* will continue to serve up the very best content — hot, fresh, and tasty. And yes, as one of the chefs of this delectable buffet, I'm always available at the email address below; so send in any suggestions, brickbats or bouquets about the changes that will happen over the coming months, and I will be sure to respond, and take heed of your thoughts.

A handwritten signature in black ink, which appears to read 'Robert Sovereign-Smith'.

editor@thinkdigit.com

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Managing Director **Dr Pramath Raj Sinha**
Printer and Publisher **Kanak Ghosh**
Publishing Director **Asheesh Gupta**

Editorial

Editor-in-Chief **Edward Henning**
Editor **Robert Sovereign-Smith**
Writer **Aditya Madanapalle**

Test Centre

Manager - Test Development and Sourcing
Michael Browne
Manager - Testing and Processes
Rossi Fernandes
Reviewer **Kumar Jhuremalani**
Product Co-ordinators
KP Nambiar, Yogendra Bagle

Design

Creative Head **Kabir Malkani**
Art Director **Rohit A Chandwaskar**
Senior Designers **Vijay Padaya, MV Sajeer,**
U Ravindranathan
Illustrators **Shrikrishna Patkar,**
Ashwini Baviskar
Sr. Photographer **Jiten Gandhi**

Multimedia

Project Head **Robert Sovereign-Smith**
Content Co-ordination **Aditya Madanapalle**

Sales and Marketing

VP Sales and Marketing **Naveen Chand Singh**
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Production and Logistics

Senior GM - Operations **Shivshankar Hiremath**
Production Executive **Vilas Mhatre**
Logistics **M P Singh, Mohd. Ansari,**
Shashi Shekhar Singh

Circulation and Subscription – Sales

GM Circulation **Milind Prabhugate**
Co-ordinator **Pramod Patil**
Customer Service **Prerana Panchal,**
Vrushali Londhe

Head Office: Editorial, Marketing and Customer Service

Nine Dot Nine Interactive Pvt. Ltd
C/o KPT House, Plot 41/13, Sector 30
Near Sanpada Railway Station, Vashi,
Navi Mumbai 400703
Phone: 40789666
Fax: 022-40789540, 022-40789640

Customer Service:
022-40789612/13/14

Cover Credits

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Navi Mumbai 400703

Editor: **Sujay Nair**
C/o KPT House, Plot 41/13, Sector 30, Near Sanpada
Railway Station, Vashi Navi Mumbai 400703

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Tell Us What You Feel About Digit

Each month, *Digit* walks through the technology maze to bring you the most relevant, most researched stories. If you have an opinion about anything published in *Digit*, or about technology in general, please write to editor@thinkdigit.com



Product Testing

Want your product reviewed by *Digit*?
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Apple MacBook	Altec Lansing MX5021	Dell XPS M1330	Palit Radeon HD 4870 SONIC
Apple MacBook Pro	Altec Lansing VS3251	Epson EMP S5	Palit Radeon HD 4870
Blackberry Bold	Apple iPod Classic 5.5G 80 GB	EVGA 9600 GT	SONIC 1 GB
Canon PowerShot A1000 IS	Apple iPod Classic 6G 120 GB	FreeCom Network Drive	Samsung T10
Canon PowerShot SX 110 IS	Apple iPod Touch 8 / 16 GB	500 GB	Samsung T220
Cooler Master Cosmos S	Apple MacBook 2008	Fujitsu Esprimo U9200	Samsung U900
Corsair Voyager GT 16GB	ASUS Crosshair II Formula	Fujitsu Esprimo U9200	SanDisk Ducati Edition 4 GB
Cowon Q5W	Canon Digital IXUS 85 IS	Fujitsu LifeBook P8020	Seagate 7200.11
Dell XPS 1730	Canon MP 610	HCL Z24 C2D	ST3500320AS
HP TouchSmart IQ 508D	Canon MX 308	HCL Z24 C2D	Sony Ericsson W380
N85 8 GB	Canon PowerShot A470	HP P1505	Sony Vaio VGN SR26GN
Nokia E66	Canon PowerShot A590 IS	Intel Core 2 Duo E8400	Sony VPL-EX 5
Samsung Omnia	Canon PowerShot SX110	Intel Core 2 Q8200	Transcend JetFlash V60 4 GB
Satguide GPS Logger	Corsair Voyager 8 GB	Intel i7 965 Extreme	WD Passport Studio 320 GB
Seagate FreeAgent XTreme	Corsair Voyager GT 16 GB	Jetway HA06	Western Digital Velociraptor
1000 GB	Cowon D2	Lacie Rugged 500 GB	300 GB
Sony Ericsson Xperia X1	Cowon D2	Lenovo IdeaPad U110	XFX GX-280-ZDD9
Sony Vaio VGN-SR26GN	Cowon O2	LG 246wP	ZOTAC 9800 GTX AMP!
	Cowon Q5W	LG KG195	Edition
	Dell 1708 FP	Logitech Z-5500	ZOTAC GeForce 9300
	Dell SP 2208 WFP	MSI P7NGM DIGITAL	

To Advertise

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Sanjay Bhan
E-mail: sanjay.bhan@9dot9.in
Mobile: +91 9341829285,
Phone: (080) 25546370-73
Fax: 41518330
Phone: (044) 28235186/88
Fax: 28230731
Phone: (040) 27894167/ 55221051
Fax: 27720205

West

Arvind Ambo
E-mail: arvind.ambo@9dot9.in
Mobile: +91 9819904050
Phone: (022) 40373636/
40373626/24494572/24467130/1
Fax: 24482059/24481123

East

Jayanta Bhattacharyya
E-mail: jayanta.bhattacharyya@9dot9.in
Phone: +91 9331829284
(033) 22317344/46

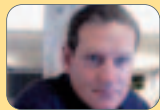
North

Pranav Saran
E-mail: pranav.saran@9dot9.in
Phone: +91 09331829284,
(011) 41608655/56/57/58

International

Navin Chand Singh
E-mail: nc.singh@9dot9.in
Mobile: +91 99013 00772

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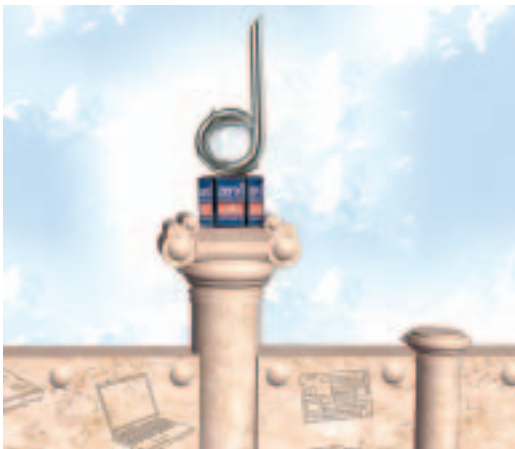
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Drool Maal



Digital Business



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A Solid UTM System

UTM solutions can provide an all-in-one security architecture with features equivalent to those offered by multiple security appliances

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Securing your Portal

The following tips are designed to assist you in securing your portals and protecting both your network and your customers

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The future of MAID Storage

MAID is expected to be a part of the long-term it strategy of organisations because it has the highest density, lowest power consumption, and longest drive life of any disk-based technology.

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Understanding WiFi Security

Recent events have raised concerns around the usage of wifi. If you know the fundamentals of the technology, it can be a safe and useful tool.

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DIGITAL TOOLS



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Main Story War at the store: SSD VS HDD

So, SSD or HDD? The two storage technologies one an old timer and survival expert; the other the cocky newcomer slug it out.

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- Remote Access For Your PC
- Organise Tasks With ToDoList

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Mini Software Tests Email Clients

What's the best free email client out there? If you want to know, keep reading...

Feed readers: Taming the Internet

Why go to the news when you can have the news come to you?

Download Managers

Download managers will help reduce your blood pressure problems, which are caused by unreliable Internet connectivity

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We test the latest hardware and software products available in the market



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Stalker: Clear Sky

Innovation is only good if properly implemented



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Dead Space

Lousy Name, Great Game



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Fallout

An embarrassment of choices



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Tools

MULTIMEDIA

Album Art Downloader 0.24



The Album Art Downloader is a program designed to make life easier for anyone who wishes to find and update their album art for their music collection. The sources for the pictures can be defined by creating plugin scripts.

Weather Watcher Live 6.0.0.61

Weather Watcher Live is your personal, real-time Windows desktop weather station. View real-time weather conditions in your neighborhood from WeatherBug weather stations, or as reported by NWS.

- Active Web Reader 2.49
- Digsby Build 34
- ePrompter 2.0
- Flock Browser 2.0

- COMODO Internet Security
- CursorFX 2.01
- GPU Caps Viewer
- Intel Chipset Software Installation Utility 9.0.0.1011
- Microsoft Debugging Tools 6.9.3.113
- RyanVM's Windows XP Post-SP3 Update Pack
- Sysinternals Suite
- Wireshark
- CounterSpy 3.1.2416
- eConceal Pro for Windows
- eScan Internet Security Suite
- Kaspersky 2009 Antivirus
- MailScan for SMTP Servers
- WinXP Manager 5.2.9

- µTorrent 1.8.1
- Avast Home Edition 4.8
- Comodo Firewall Pro 3.0.25.378
- Foxit Reader 2.3
- Free Download Manager 2.5 build 758
- Irfan View 4.20
- Java(TM) 2 Runtime
- K-Lite Mega Codec Pack FULL 4.2.5
- Opera 9.6
- Silverlight
- Spybot Search and Destroy 1.6.0
- VLC Player 0.9.4
- WinRAR 3.80

PhotoFilmStrip

PhotoFilmStrip creates movies out of your pictures in just 3 steps. First select your photos, customize the motion path and render the video. There are several output possibilities for VCD, SVCD, DVD up to FULL-HD.

- Album Shaper 2.1
- Camera Life 2.6.2
- coverJuke 1.44
- DVDfab HD Decrypter 5.1.1.0
- FinalBurner FREE 2.5.0.139
- GrolMP 0.9.8
- Krut Computer Recorder
- Microsoft Photosynth 2.0.1403.12
- Microsoft Pro Photo Tools version 2
- Moldeo 0.71
- Movica
- Photormin 0.9.5
- PhotoScape 3.2
- QtPfsGui
- Rendera 0.5
- Scan Tailor
- Structure Synth 0.8
- Varilcons Icon Editor
- Visions 0.4.2.1481 Beta
- Zoom Player Premium 6.00 Final
- Nero 9 9.0.9.4
- Virtual DJ

INTERNET

Ace Explorer 2

Ace Explorer incorporates a large collection of powerful features, such as a built-in pop-up killer, a skinnable window frame, a form filler, site groups, quick search, autologin, hidden sites, built-in commands and scripting, online translation, script-error suppression, blacklist/whitelist filtering, and URL aliases. It brings you



- Google Talk
- Instantbird for Windows 0.1.2.1
- Miranda IM 0.7.10
- Mozilla Firefox
- PaltalkScene 9.5
- ParentalControl Bar 4.0.3.344
- Refresher 1.2
- Skype 3.8.0.180
- Songbird 1 RC 1
- Star Downloader Free 1.45
- Vuze
- WebcamMax Effects Package 4.1.2.2
- Yahoo! Messenger 9.0
- AV Voice Changer Software 6.0.31
- CamTrack 2 2.5
- LIVECHAT Communicator 5.5.0.1
- PimpFish 2007 0.9
- RealTime Cookie & Cache Cleaner 3

SYSTEM

RyanVM Addon Pack

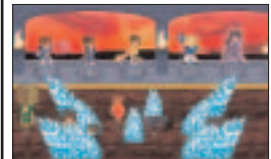
Ryan VM addon pack for windows XP, has updates or addons for basic tools in XP like calculator and installer.



Gaming

GAMES

Little Fighter 2.5



A standalone mode for LF2, featuring all-new characters and more

- Tomb Raider Underworld Demo
- Virtua Tennis 3
- MAME 0.126
- Crazy Kart

MODS

- Crysis Natural Mod v2.0.2
- Horror Mod [ver 3] for GTA:SA
- S.T.A.L.K.E.R. Ultra Graphics Mode v1.1
- Urban Terror for Q3

TRAILERS

- Command & Conquer: Red Alert 3
- Far Cry 2
- Mirrors Edge
- Sonic Unleashed

Entertainment

HD TRAILERS

Angels & Demons

The team behind the global



phenomenon The Da Vinci Code returns for the highly anticipated Angels & Demons, based upon the bestselling novel by Dan Brown. Tom Hanks reprises his role as Harvard religious expert Robert Langdon, who once again finds that forces with ancient roots are willing to stop at nothing, even murder, to advance their goals. Langdon discovers evidence of the resurgence of an ancient secret brotherhood known as the Illuminati - the most powerful underground organization in history - he also faces a deadly threat to the existence of the secret organization's most despised enemy: the Catholic Church.

- Australia
- Fuel
- Slumdog Millionaire
- Special
- The Unborn
- Underworld: Rise of the Lycans

MUSIC

- Cool Cavemen - All cool hits
- Dreamweaver - Only Time
- Fresh Body Shop - Make this end
- Inesperado - Maqueta Inesperada
- paniq - Last Known Good Configuration
- Weirdland - Curse of Ice

ESSENTIALS

.net Framework 2.0

You'll need the .net Framework to run many .net-based applications, including the Digit Software Archive

µTorrent 1.8.1

µTorrent is an efficient and feature rich BitTorrent client for Windows sporting a very small footprint. It was designed to use as little cpu, memory and space as possible while offering all the functionality expected from advanced clients.

UPDATES AND ADD-ONS

Adobe Shockwave

Shockwave Player is the web standard for powerful multimedia playback. The Shockwave Player allows you to view interactive web content like games, business presentations, and advertisements from your web browser.

- Avast Update
- AVG Update
- Java runtime update
- Kaspersky definition Update
- Norton Internet security update
- Spybot updates

Productivity

- OFFICE**

 - Lotus Symphony for Windows 1.1
 - Microsoft Network Monitor 3.2
 - Office 2000/XP/2003/2007 Slipstreamer 1.71
- VMware Workstation

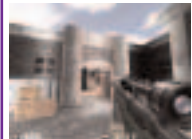
CREATE

 - Construct 0.96.2
 - Microsoft Expression Web 2 Trial
 - Microsoft Visual J# V 2.0
 - Silex 1.1

Gaming

GAMES

AssaultCube



AssaultCube, formerly ActionCube, is a free first-person-shooter based on the game Cube. Set in a realistic looking environment, while gameplay stays fast and arcade. This game is all about team oriented multiplayer fun.

Neverball



Tilt the floor to roll a ball through an obstacle course before time runs out. Neverball is part puzzle game, part action game, and entirely a test of skill.

- Blood Frontier
- D2X-XL
- Egoboo
- Fictional Air Combat
- Frozen Bubble
- Open Frag
- Open Transport Tycoon Deluxe
- Palomino flight simulator
- Pingus
- Police Forces - free Ego Shooter
- The Battle for Wesnoth

DEVELOPMENT

Crystal Space 3D SDK

Crystal Space is an Free 3D SDK. It renders with OpenGL or software and features curved surfaces, volumetric fog, dynamic colored lighting, terrain engine, LOD, procedural textures, portals, etc.

- The EDGE Project
- The Quake Army Knife (QuArK)
- MILT: Matlab Imitation Learning Toolbox

Distros

MEGA

dyne:bolic



dyne:bolic is shaped on the needs of media activists, artists and creatives as a practical tool for multimedia production: you can manipulate and broadcast both sound and video with tools to record, edit, encode and stream, having automatically recognized most device

and peripherals: audio, video, TV, network cards, firewire, usb and more; all using only free software!

- eAR OS
- Dreamlinux
- Parsix Linux
- Ubuntu 8.10
- Sabayon 3.5

MINI

Arch Linux

Arch Linux, a lightweight and flexible Linux distribution that tries to Keep It Simple.

- Feather Linux
- Wolvix Cub
- TinyMe
- ZenWalk

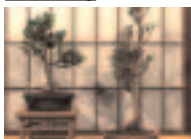
Tools

MULTIMEDIA

Cenon

Cenon is a graphical tool of a special kind. Build upon a modular graphical core, Cenon offers a wide variety of possibilities and applications. The best of all, the Cenon core is free software, available with full source codes, and at home on many computer platforms.

POV Ray



The Persistence of Vision Raytracer is a high-quality, totally free tool for creating stunning three-dimensional graphics. It is available in official versions for Windows, Mac OS/Mac OS X and i86 Linux. The source code is available for those wanting to do their own ports.

INTERNET

Serendipity 1.1.2



Serendipity is a PHP-powered weblog application which gives the user an easy way to maintain an online diary, weblog or even a complete homepage. While the default package is designed for the casual blogger, Serendipity offers a flexible, expandable and easy-to-

use framework with the power for professional applications.

Zimbra Desktop Alpha 0.53

Zimbra Desktop is the next generation leap forward for Web 2.0 applications.

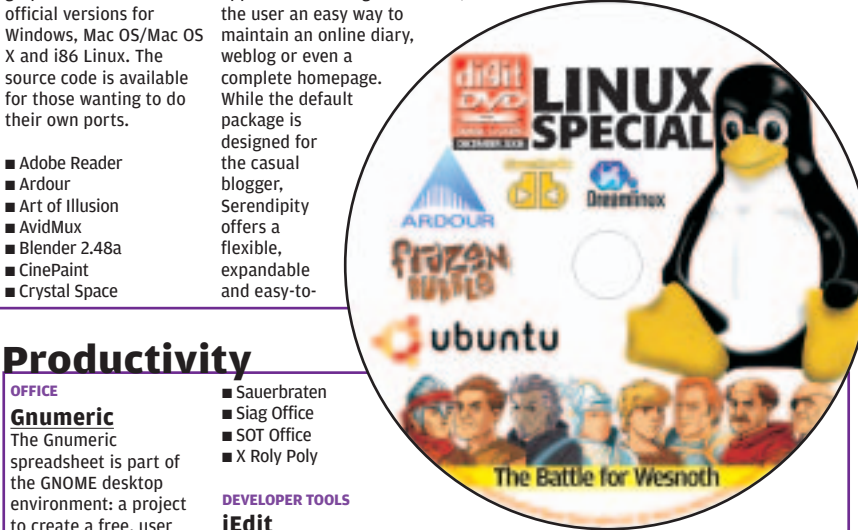
- Beonex Communicator 0.8.2
- Deluge
- EJBCA 3.4.5
- JAlbum 7.2.1
- Opera
- SSL-Explorer 1.0
- TinyMCE
- Vuze
- Mozilla Firefox

SYSTEM

Mondo Rescue

Mondo is reliable. It backs up your GNU/Linux server or workstation to tape, CD-R, CD-RW,

DVD-R[W], DVD+R[W], NFS or hard disk partition. In the event of catastrophic data loss, you will be able to restore all of your data [or as much as you want], from bare metal if necessary. Mondo is in use by Lockheed-Martin, Nortel Networks,



Productivity

OFFICE

Gnumeric

The Gnumeric spreadsheet is part of the GNOME desktop environment: a project to create a free, user friendly desktop environment.

- Custom
- Dicole MimerDesk
- Gnumeric
- Lyx Document Processor
- Magic Point
- MinDia
- Open Office 3

DEVELOPER TOOLS

jEdit

jEdit is a mature programmer's text editor with hundreds (counting the time developing plugins) of person-years of development behind it.

- Geany
- Gobby
- Netbeans
- Quanta Plus

FINANCE

Grisbi

Grisbi is a personal accounting application

running under GNU/Linux and Windows, released under the GPL licence.

- GnuCash
- Calamar
- CMP Gestco

Fast Track To Windows Vista: Tips, Tricks And Secrets

A collection of useful software applications for Windows Vista to help boost your productivity, system performance and more...





A quick and easy registration process that gives you access to all the goodness on offer



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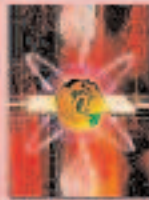


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FEATURED REVIEW FROM THE DIGIT FORUM (www.thinkdigit.com/forum)



My review of Brothers In Arms : Hell's Highway

BULLZT

In The Zone
Join Date:
Jun 2007
Location:
Ichapore,
West Bengal
Posts: 469

Quote:

Originally Posted by PaulScholes18

"I like to use sniper rifles. Where should I hide when I want to use .Most of the times I get caught"

For using awps, u need high skills.as u know,u hv only got 1 shot to hit, so u must be very precise.

abt hiding place,tht ll differ from map to map. bt 1 thing, why ll you like to hide if 1 shot of u can take the enemy down??

just avoid places where the enemies usually rush(exp.- de_dust2 stairs/ramp).

if u fall in such situations,use

ur flashes well.

u have to think about ur positioning so tht u can pick ur enemy before he/she can.

i m giving some normal positions according to maps.try them out.

[note:-positions are clan specific.playing in frag servers online may not match with these].

de_dust2 :- bombsite B (go on the platform inside n take position behind the boxes)

mid double doors (make someone boost u just in front of the green box n u can hv a clear shot to the players running through stairs/ramp)

bombsite A (u can go to side

doors bt in clan matches thts not a good choice as flashes will make u blind n u can hardly take a shot.if u wanna go,take an assaulter as ur backup who ll help u to fall back if u miss ur shot or there are a number of enemies).
bombsite a (u can take position on the green box at bombsite a to take down enemies entering the bombsite through ramp/stairs.)

in all cases u hv to avoid flashes at all costs.

de_inferno:- bombsite a (take a flash and just going outside of bombsite a,

throw the flash in the wall in front of u.there s a lamp post.u hv

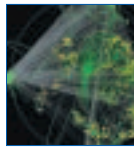
to throw the flash in such a way tht it bounces from the wall in front of the boxes outside

.u wont get flashed bt the terrorists rushing towards the bombsite will definitely be flashed.now take positin behind the boxes n nail them down).

bombsite b (just moving out from ct spawn towards b,u can take position under the arch.bt ur reflex must be good enough to shoot down the t's running along the ramp n entering the bombsite).

Internet, Redux

The Internet is a bunch of new technologies slapped on to old, which makes it too inefficient to last for long. The US National Science Foundation has commissioned scientists to “rethink” the Internet, and turn it faster, more efficient and more secure – into the Manhattan Project. But could this, too, blow up?



Microsoft Launches Online Store...

...but no one really cares. The company didn't make a big deal about its new Microsoft Store. After looking at it, we know why. Just your regular, run-of-the-mill online store here. However, instead of worrying about Vista DVDs, you can now download the OS once you've bought it.



Enter



Bruno Sargeant
Autodesk Sr Manager, TV and Broadcasting

Bruno Sargeant was recently in Mumbai. We caught up with him during his tour.

One of your recent acquisitions has been Mudbox. Why was that move necessary and was it to fend off any possible competition?

We're building a suite of tools for modeling and and Mudbox fits in well. It's a software perfect for users who aren't used to 3d modeling tools. The interface is simple and modeling in it is like playing with clay.

Has Autodesk considered entering the image editing space?

Autodesk's core-competency is 3D and post-processing. Image editing and 2D graphics applications in general is a market that has already well served so we do not see the need to go there

Is Autodesk being too aggressive by buying out possible competition? What do you think of free CG software like Blender or Wings3D?

Our products co-exist with all others. We've never shut down any software – we've only improved them. We are fine with free software in the market. For those who want to learn, we have a free Maya Learning Edition on our site.

What does the Indian television market mean for Autodesk?

India's television channel market is easily one of the fastest growing ones in the world. We already have a big client list of our products. High-definition television is something new and is definitely coming. Media houses have already started upgrading to the latest HD-ready Autodesk products.

THE PIRACY PROFIT PLAN

MTV Goes Gold-digging

The Great Copyright Infringement Lawsuit has become a symbol of fear, at least in the US. Organisations fear it – the last thing they want to do is to have to pay millions for the silliest indiscretion. Other organisations thrive on it – “Ah, so we made some crappy content. Let's see if we can sue someone and make up for our losses.” And the Little People – the Joe the Plumbers, as it were, must delete that collection of MP3s, or live with the fear that the RIAA will come a-knocking one day, and take them for every last penny, and some more.

Even with the so-called crackdown, piracy refuses to quit. Obviously, the content creators are fuming at the thought of all that money they aren't making. And then MTV had their “aha” moment – could it be that there is money to be made even from piracy?

Henceforth, when MySpace users post any content that infringes on MTV's copyrights, they won't demand that it be taken down. Instead, they'll slap an ad on it, and hopefully make some money there. This isn't a new idea, though – Google's been there too. If content owners find their copyrights being infringed on YouTube, they can choose to either pull that



content, or put an ad on it.

Yes, you hate ads. But would you rather be watching a real music video with ads, or an ad-free video of some idiot lip-syncing in front of a webcam (though they're not always mutually exclusive)? The bottom line is that if companies think they can make money off your desire to share with people, they might sit back and not bother you so much about your “crimes.” This means there will be more content for all and though we may be hoping for too much, may be they'll even encourage file-sharing.

TWICE AS NICE

Piracy 4 The People

It isn't just the content creators who are bothered about piracy – our poor ISPs, too, must deal with the strain we're putting on their networks. Bandwidth costs money, and ISPs in the US are now coming face to face with

the monster they created (“6 Mbps Unlimited for just \$33 (Rs 1,500)? What were we thinking?”). So Comcast, one of the nation's biggest ISPs, decided to introduce a term we love to hate – the download limit. Comcast subscribers will now be limited to downloading only 250 GB a month.

How horrifying.

Obviously, most people won't hit that limit – even at 6 Mbps – so it doesn't really matter. But that also means that piracy is still straining Comcast's networks. So instead of throttling P2P traffic like they originally planned, they've given P4P a try, and the results are amazing.

P4P – Proactive network Provider Participation for P2P – uses a technology called iTracker to find you as many peers on the ISP's network as possible. It's great for you, because if your ISP is using P4P, you will download at speeds that are around 80 per cent faster. And it's great for the ISP, because it doesn't increase their costs. Every time you download data from an international server (which you usually are), you're accessing your ISP's international link, and that access costs them money and hence costs you money. If you stick to downloading from servers that are in India, you're



Security Watch

WPA Not So Protected

The Problem

Two German graduate students have discovered a way to break Wi-Fi Protected Access (WPA) in about 15 minutes.

The Solution

Switch your router to use WPA2 protection. If your router doesn't support it, upgrade its firmware and try again.

Facebook Enemies

The Problem

According to a new Websense alert, spammers have started sending out emails that seem to come from Facebook, and tell you that one of your friends has approved you. This email comes with a ZIP attachment, which installs an assortment of nastiness on your PC. However, now you'll more likely get an email with a link to what you'd think is your friend's profile, but will install more malware.

The Solution

First, check where the email really comes from. In Gmail, click on Show Details, or click on the little arrow next to Reply and choose Show Original.

Acrobatic Trick

The Problem

Hackers can now use a specially made PDF that causes a stack overflow in Adobe Acrobat and/or Reader, and gives them the same rights to your PC as you have.

The Solution

No solution has been released for this problem. You can bet that you'll be safer if you didn't open PDFs you didn't ask for.

using local bandwidth, which your ISP pays much less for. If the server is on the ISP's own network, they pay almost nothing and in turn you pay almost nothing.

We may need to wait a while before we have Indian mirrors for the sites we access every day, but if our ISPs implement P4P, there will be little to separate us from our pirated (and some legal) content, and they can't whine about how much we're costing them. Now, we just have to get rid of that download limit.

ZTICING IT TO HACKERS

IBM Keeps Your Identity Safe

Do you get nervous when you shop online? Did you say, "No, thank you" when your bank asked you if you wanted netbanking? Are you worried that there's someone out there just waiting for you to mess up and release your credit card information online? Well, there is. If IBM has their way, though, they'll be waiting a long time.

Viruses have come and gone, but no security breach has had the kind of mileage that phishing, and the subsequent identity theft has. You can't be safe from your own gullibility, so it's ridiculously easy to fall for a phishing attack. At

the same time, though, we can't really afford to go back to the days of standing in queues at our local bank branches (well, maybe, but do we want to?). Now, IBM's Zurich lab has come up with a solution to all our woes, and it's called ZTIC — Zone Trusted Information Channel, and pronounced "stick." The ZTIC will protect you from a *man-in-the-middle* attack, where you think you're talking directly to your bank's server, but you're really talking to a hacker's machine, and that machine is talking to the bank's server. So you could be requesting a transfer of Rs 2,000, but the hacker can transfer Rs 20,000, and still make it seem to you that everything's all right.

Here's how the ZTIC protects you: you ztic it into your USB port, and it starts communicating directly with your bank's server using a secure connection. Meanwhile, you use your browser for netbanking, just as you would in any other circumstances. While you're going about your transactions, the ZTIC will show you the amounts that the bank's servers are receiving, so if there's a difference between what you see on screen and what the ZTIC shows you, you'll know that it's a *man-in-the-middle* attack, and hit the big red button to kill the transaction. It's like the SMS you get after you use your credit card, only in real time.

There are, however, many ways that the determined hacker could get past the ZTIC — most obviously, get the ZTIC to talk to his *man-in-the-middle* server



HOT

Android
It's got swipes, a Webkit-based browser, it's open source, and it's the first real competitor for the iPhone's OS. Also bundled: all the Google-y goodness you'll ever need. In your pocket.

NOT

One Phone?
The G1 is probably the ugliest and most ungainly phone on the market. Period. If Android is open source, why didn't more manufacturers want to use it on their new phones? All we can do now is wait for Motorola to come up with their Android phone.

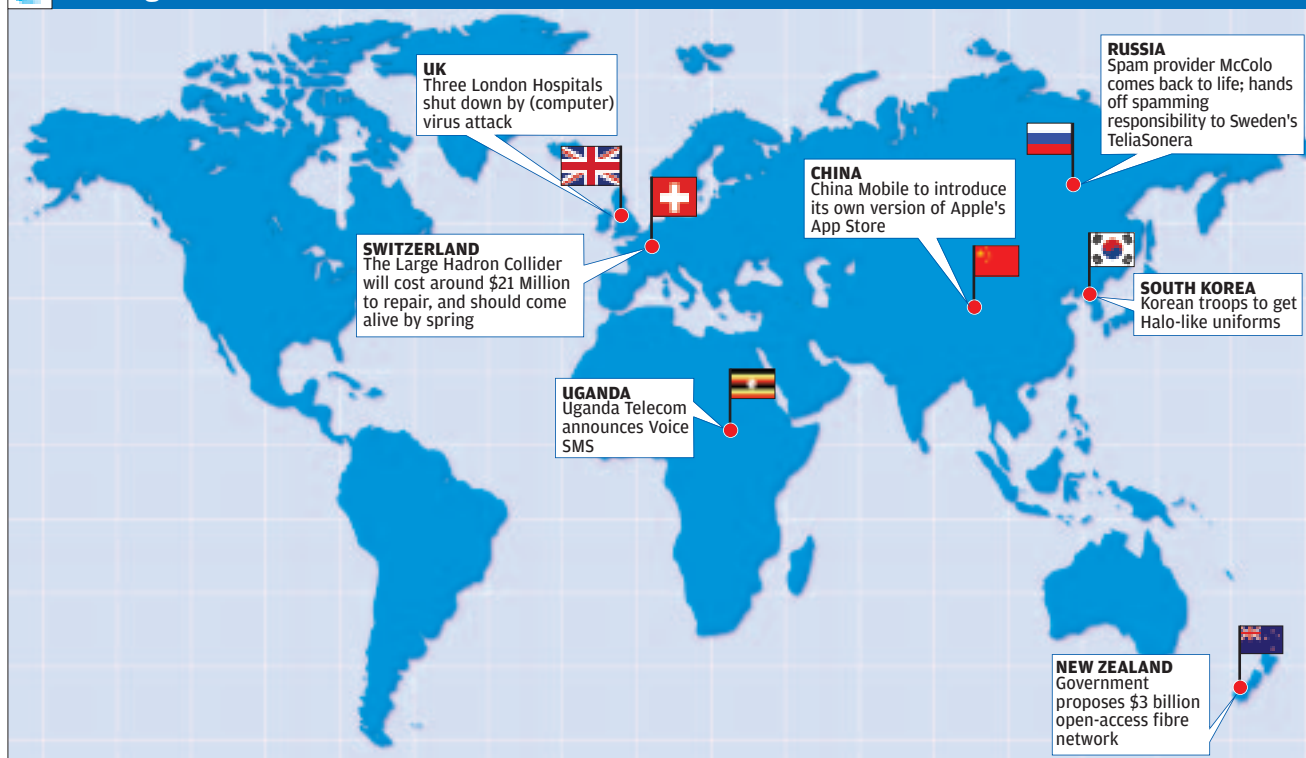
as well. Secondly, the ZTIC doesn't protect you if you've got key-loggers installed on your system, and may even lull you into a false sense of security.

If your bank gives you an RSA SecurID (a little keychain that generates a random number every minute or so), you probably don't have to worry about needing the ZTIC — in fact, the SecurID can't be fooled by a *man-in-the-middle* attack. What we really need our banks to do before anything else is to stop writing bad, IE-specific code. Then bring on the SecurID.

NO TV FOR YOU!

Gadgetry That Cuts Your Bills

No, we're not going to blather about new, green technologies that consume less energy and more money — not in the sense you'd expect, anyway. While "green" tech



is on the rise, it's obvious that some of the appliances we use at home will inevitably consume a lot of electricity — air conditioners, for example. So to cut your electricity bill, and to save the environment, you must use your stuff judiciously. Which is tough, because the energy meters that calculate your monthly bill likely hide in a dark corner of your building.

Now, GE wants to get your appliances and your energy meter talking — instead of having you judge your own energy use, GE plans to release appliances that will show you the price you pay for using them. You'll also be able to program them to turn off or turn down when you hit a certain budget. It goes beyond your house, too — these appliances will also be able to talk to your electricity supplier and ultimately lead to a smarter power grid that will optimise the way your city

(and then the whole world) uses power.

The big picture is to reduce peak power usage — the most electricity that an entire power grid demands during the day, and the leading cause of power-related pollution. Many power companies save their most powerful (and hence most polluting) plants for peak times, so when you turn on an air conditioner during peak hours, you're doing a more damage to the environment than you would if you turned it on during the off-peak hours. More importantly, you pay a lot more for consuming electricity during peak hours, simply because it's costing your supplier more to give you that electricity.

By distributing power use over the day, a smart power grid will ensure that the most polluting plants never get used, which means less pollution, and less horrifying bills — even

if the total power you use during the day doesn't change much.

With GE's plan, your fridge, for example, will be able to talk to your supplier and find out if it's a good time to run a defrost cycle — if not, it'll just postpone the cycle to a time when the grid isn't as loaded.

There is another hidden benefit to GE's plan — studies have shown that people whose energy meters are in plain sight tend to use electricity more judiciously, so if your stuff is telling you how much you're paying to keep it on, you're more likely to turn it off.

And finally, this plan might just revive that old alive-again-dead-again plan of broadband over power lines (BPL), for it'll be crucial to getting this smart grid plan under way. Right now, at least, it sounds much better than the paint-everything-white plan to fight global warming.

THERE AND BACK AGAIN

The Way Of WebKit

Ah, the browser wars. What would these pages be without them? With the launch of Chrome, Google joins Apple as a strong advocate for WebKit, the open source browser engine that combines fast rendering with plenty of standards-compliant goodness. Now, thanks to a really cheeky developer, WebKit might garner some support from a very unlikely source — good ol' M-dollar.

It all started during a propaganda session by Steve Ballmer. A young developer, as yet untainted by said propaganda, asked the exalted CEO, "Why is IE still relevant and why is it worth spending money on rendering engines when there are open source ones available that can respond to changes in Web standards

faster?" Ordinarily, this would have elicited a reaction that would rise through the YouTube ranks like nothing before it. However, the response was even stranger: "Open source is interesting. Apple has embraced WebKit and we may look at that, but we will continue to build extensions for IE 8."

Before you head out into the streets cheering, note that last bit: "build extensions for IE 8." Which means that even if IE 8 uses WebKit, Microsoft will continue to make IE-specific features, which means that it won't end the messy era of IE-specific code. Soon after, Ballmer confirmed that Microsoft hasn't suddenly gone soft — the company will stick to its current Trident rendering engine, because "there will continue to be a lot of proprietary innovation by us, and other people, inside the browser itself."

Had Microsoft decided to the WebKit way, however, there would have been a lot to look forward to. Firstly, with the growing number of Macs, Web developers need to make sure that their applications work with Safari, which uses WebKit. Secondly, and more importantly, a WebKit-powered IE on Windows Mobile devices wouldn't be nearly as awful. Android phones use WebKit as well, so a site designed for WebKit will work well with IE and Chrome on your PC, Safari on your Mac, IE on your Windows Mobile phone, and the browser on your Android phone. Finally, the WebKit-powered Safari 4 beta is the only browser engine to pass the ACID 3 test so far. The WebKit Way would have brought us a Web that we've all dreamed of: one that is standards compliant, and runs everywhere.

And, of course, it had to be Microsoft who ruined it.

YOUR OWN LITTLE MELTDOWN

Personal Nuclear Reactors

In his Foundation series, Isaac Asimov reveals his love for tiny nuclear reactors — they power everything, from guns to personal shields to costume jewellery. In the present, however, we see two huge towers and an accident waiting to happen. Somewhere in between, you'll find the upcoming Hyperion Hybride Reactor.

Built by the Arizona-based Hyperion, the Hybride reactor is about the size of a Jacuzzi, is completely sealed, is practically maintenance-free, has no moving parts, and will power up to 20,000 homes. Much though we like the picture of a glowy, throbbing reactor in the middle of our localities, this is not to be. The Hybride will be buried underground, and will need to be dug up every seven years or so for refuelling.

The company has already received a hundred orders from various industries and developing countries, and there's already a six-year waiting list. And all this for something that's still five years away.

Toshiba is working on its own miniature nuclear reactor as well — the 4S (super-safe, small and simple), which will be ready for its first field test in 2012. It'll be smaller than the Hybride, and will last 30-40 years without refuelling.

The possibilities for something like this in India are wonderful: no longer will our small cities and villages have to suffer power outages so that the big cities keep ticking. They could become self-contained units, independent of the power grid. In countries worse off than ours, these reactors could go where no power source has ever gone before. Most importantly, it'll all be clean power — right now, nuclear power has almost no carbon footprint. There is, however, the matter of getting organisations like Greenpeace to stop ruining its good name.



CRACK A BIG :-)

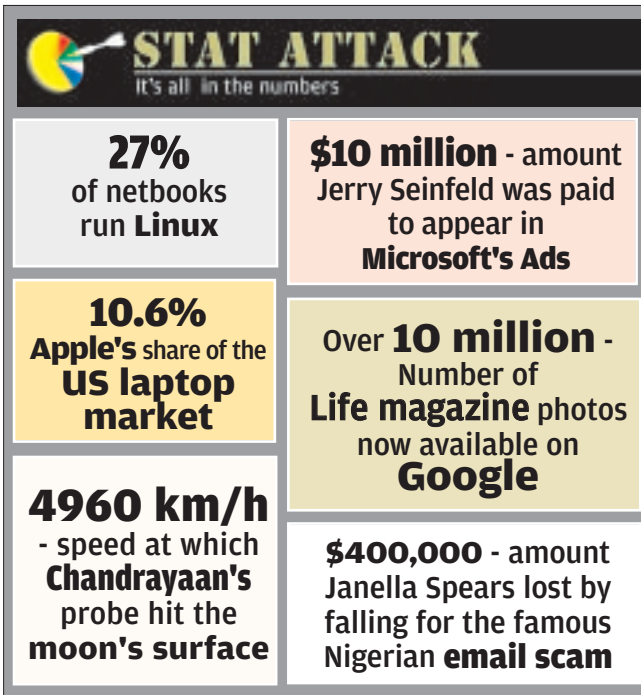
Emotion And IM

As writers, we've loathed what instant messaging has done to people. While we meticulously craft our sentences and use whole words, there's usually an idiot at the other end *tryn 2 tlk lk ths*. Of course, that doesn't mean we don't love the medium.

There are many who believe that IM throws sand in the face of the statement that you lose about 85 per cent of communication when you're not face-to-face. That idea would make sense when we're talking about letters, but this is instant messaging we're talking about. IM isn't writing, it's speaking. In text. And now, it's been proved that IM is just as successful at communicating emotion as regular interaction.

Jeffery Hancock at Cornell University asked 44 volunteers to chat with a partner for about 20 minutes, find out more about each other and discuss their woes. Before the chat, one partner from each pair was shown either a particularly depressing scene from *Sophie's Choice*, or a boring video of a small talk. After the chat, the participants were asked to comment on their partners' mood, and surprisingly enough, all of them were dead accurate. Even more surprising, people who were paired with partners who had watched *Sophie's Choice* actually felt sadder than they did before the chat.

Of course, there will be many who disagree — face-to-face is the only way, they'll say. And that's



understandable. For many of us, IM has become second nature, but we can't really see ourselves saying "OMG!" to our parents, who would likely not be as comfortable with IM as we are. We're willing to wager that most of, if not all, the participants were young, and have grown up IM-ing. As we've used the medium, so have we adapted to it, and made it almost as good as personal interaction.

ENTER DAVID

ARMs In Your Hand?

Even as Intel pummels its competition in every processor category, there is another

voice that comes a-challenging.

ARM — the processor that has been powering our smartphones and PDAs and PMPs and miscellaneous pocket-sized devices — will now poke its head into the booming netbook market, which has thus far been dominated by Intel's Atom. The company will work with Canonical to build a flavour of Ubuntu optimised for the new ARMv7 architecture, and is targeting netbooks of all shapes and sizes.

There is much to be said in favour of this move. Firstly, as you might have doubtless noticed, your (ARM-based) smartphones can last for a goodish while before needing a charge. If ARM does it right, they are better poised to give us a

netbook with spectacular battery life than anyone else. For, you see, while Intel's trying to get its x86 chips to consume less power, the ARM architecture was designed with power consumption in mind right from the beginning. Secondly, there's video. ARM's mastered the art of playing high-quality video without consuming too much power, and a souped-up ARM might even be able to handle HD video with more finesse than the Atom. Finally, there's the fact that ARM's RISC (Reduced Instruction Set Computing) architecture is inherently more efficient than the x86 architecture, so in the right hands, the ARM could potentially outperform the Atom.

The same RISC that makes the ARM so great, could also be its undoing. A badly written block of code could throw off its performance considerably, thrashing all our dreams of a fast netbook that lasts a whole day on a single charge. And you know you don't want that.

BEEP BEEP

Jaguar Overtakes Roadrunner

Just as so many gamers must compare 3DMark scores to validate their gamer-hood, research labs must spend their time

building supercomputers that can do more stuff per second than anything else. In June, IBM's Roadrunner became the first supercomputer to cross the petaflop barrier, performing 1.026 quadrillion floating-point operations per second (flops), making it the fastest supercomputer in the world.

Back in 2004, Cray started adding more processors to their extensible Jaguar XT supercomputer, taking it from 84 cabinets to 284. They've built one that they can add on to whenever they feel like. Today, the Jaguar runs on 45,000 quad-core Opterons, making that a total of 180,000 cores, and hits a peak performance of 1.64 petaflops, clearly unseating the Roadrunner.

The Jaguar will give scientists all the computing power they need to figure out the weather, nuclear fusion, and generally anything that perplexes them. And here we are, just talking when there's science to do.

THE JIG IS UP

LCD Prices All Show

There's nothing like a good economic crisis to get people to do desperate things. AIG, for example, begged for a government bailout so their

Buzzword of the MONTH

Bhuvan

Now that the ISRO has somewhat conquered the moon, they're ready to take on even more space-related projects. The first off the block will likely be Bhuvan, our own answer to Google Earth. Like Google Earth, Bhuvan will use a network of satellites to watch the world, and let us zoom into areas around 10 metres wide, as compared to Google Earth's 200. And just like Google

Earth has cities in the US so wonderfully mapped, Bhuvan is likely to give us that same goodness right at home.

But why build a competitor to Google Earth in the first place? Apart from the fact that the pictures for India aren't as detailed as those for the US, Google Earth also updates only every two or three years. Bhuvan, on the other hand, will update once a year.



The LHC

What is the LHC?

The LHC, or Large Hadron Collider, is the world's largest particle accelerator, which will make proton beams collide with each other at nearly the speed of light.

How does this matter?

Scientists believe that by colliding these beams, they will be able to verify the existence of the Higgs Boson, a particle that might tell us more about how the universe started. Other scientists—notably Stephen Hawking—believe that all we will know is that there is no Higgs Boson.

Why is it popular?

The LHC has been in the news for many reasons, the most significant being the possibility that when activated, it will end the universe. It will create "big-bang-like" conditions, and to some, that means that we'll all vanish in a big bang. This was supposed to happen in October, but due to a malfunction (that will cost around \$21 million to repair, incidentally), the LHC is now offline till next summer.

Where does one put a particle accelerator?

This particular accelerator occupies an underground tunnel, which has a circumference of 27 km, at the border between France and Switzerland.

Who is behind this madness?

The LHC is a joint effort by scientists from across the world - 10,000 scientists from over 100 countries, to be more specific - under the umbrella of the European Organisation for Nuclear Research (CERN).

When did all this come about?

The LHC was approved way back in 1995, and was supposed to have been completed by 2005. That became April 2007, which finally became September 2008.

executives could get a much-needed \$440,000 (Rs 2.06 crore) vacation. Some others, however, decided that all the bailout begging is beneath them, so they took matters into their own dirty hands.

Turns out that the top three LCD manufacturers in the world — LG, Sharp and Chunghwa Picture Tubes — belong to the latter group. Early in November, they pled guilty to a price-fixing scam — they've all been selling LCD panels at much higher prices than they're really worth. Apparently, the companies hated that the price of LCD panels were dropping at such an alarming rate, so they decided to slow that decline to keep their earnings up.

If you've been watching LCD prices lately, you'll have noticed that they've continued to fall at an alarming rate, even with the price-fixing madness. According to iSuppli, a market research firm, the price of a 15.4-inch laptop screen has dropped from \$97 (Rs 4,600) to \$63 (Rs 2,961) in just the last six months. And remember, this is after the LCD makers have played their mischief. Take away the price fixing, and we're talking much lower prices for your TVs, monitors and laptops. Or, at least, a bigger profit for the companies that sell you these products.

For their indiscretions, the three companies will receive more than just a rap on the knuckles. The US Justice Department has fined them a total of \$585 million (Rs 2750 crore); LG alone will have to cough up \$400 million (Rs 1880 crore). Obviously, an irate



American public won't stand for being gypped (not when there's money to be made), and class action lawsuits have cropped up all over the landscape. It's also likely that the companies who have been buying these LCDs — Dell, Apple and Motorola, for instance — might want some revenge.

MOVING PICTURES

Photos That Follow The Sun

Even though we've gone from the intimate detail of the film photo to the grainy disappointment of the digital photo to the intimate detail of the multi-megapixel (gigapixel, even) photo, the photograph itself hasn't changed. It captures just a single moment in time, and remains the same forever.

Now, Martin Fuchs at the Max Planck Institute for Informatics wants to change that. Instead of having you look at an unchanging photo, he wants you to see it evolve over the day. Despite that, as you look at it, you'll see shadows move, lights

come on, and other such goodness that you're only used to in movies.

The setup comprises a lens array and focuses light on a transparent photo film. You see the image on a diffuser. The photograph on the film is really a composite of hundreds of photographs taken all through the day.

When the light from the lens array falls on a hexagon, you'll see only one source image at a given time. As the sun moves behind the photo, a different photo is illuminated, so it looks like the photo is changing with time.

It's a great idea for billboards, but we doubt we'll be taking any such photos for our personal collections. Firstly, there's the matter of being patient enough to wait while your camera spends all day taking pictures. Secondly, the procedure doesn't seem like one that your local photo shop can accomplish. And finally, the fact that the sun needs to be behind the photo restricts our choices of placement. Designer window? Yes, that seems to be an option with this innovation. Photo frame on the coffee table, probably not. Still, 'twould be a great idea to break away from just any other photo. ■



28 Zero 1 Awards



55 Visual Buying Guide

Digital Passion

Fuelling The Pursuit Of Technology Knowledge

Drool Maal

AirCurve

The AirCurve from Griffin technologies is an acoustic amplifier for an iPhone. The beauty of this translucent cube that is not apparent is that it drains zero battery from the device, as the audio boosting technology used is completely analogue with no electronics involved. A waveguide horn is used to collect the sound from the speaker of the iPhone and the sound is amplified by ten decibels for all to hear. If this is not a steal at \$19 (Rs 950), we don't know what is



Ovalia

Remember Will Smith being confounded by that egg shaped chair in *MIB*? Don't pretend you have forgotten already. The chair is called the Ovalia and was designed by a guy called Henrik Thor-Larsen way back in 1968. The chair is timeless for its design, but the 21st century edition, 40 years after the original came out is pimped with JBL speakers, is made up of polished aluminium and is available in 20 different colours. Only 900 of these are ever going to be made, and they are yours for the taking, if you have \$7,700 – Rs 3,85,000 – that is



Nikon Media Port UP300x

The Nikon Media Port UP300x is a strange device. It is basically a headphone with a screen for viewing videos, Wi-Fi capability and 8GB of memory. You can move and shake your head in different ways if you don't want to control the Media Port or surf the Net with the controllers on one of the cans. The screen simulates a 50-inch screen at a distance of 30 meters, and has features like a white wiper line to draw attention to the screen if there are a lot of moving objects around. You can see the screen only with the right eye; buy it only in Japan, and only for 69,800 Yen (Rs 35,871)



Motorola Aura

Motorola launched Aura – a slider phone for the high-end market. We'll throw around some phrases associated with it – 62 carat sapphire crystal lens, electro and hand polished, chemically-etched stainless steel, tungsten carbide coated gears, quad-band GSM, 130 precision ball bearings and a Swiss made rotating mechanism. The Aura sports the world's first circular display, and a 16 million colours 300 dpi one at that. Yours for a mere \$1,999 (Rs 99,950)

Space-suits

There is a bunch of really cool space gear available at thespacestore.com. Along with helmets, backpacks and boots, you can buy these space-suits. The suits are made from authentic materials, are museum quality, and come in large and extra large sizes. For \$875 (Rs 43,750), you can strut around like you just walked off the sets of Armageddon or for \$9500 (Rs 4,75,000) you can fake your own moon landings.



Nooka Zirc GD Gold

Nooka is famous for making uber geeky time pieces. Binary watches, horizontal time bars and vertical time bars are some of their more exotic watch designs. The Zirc GD Gold however beats them all with a circular face for counting the hours and a horizontal bar for the minutes. The watch is also available in black, white and silver. The Zirc GD costs \$350 (Rs 17,500)



Sennheiser HD 650

The HD 650 is at the top of the range in the HD audiophile line up of Sennheiser headphones. The headphones are precision engineered all the way from the voice coils (lightweight aluminium) to the fabric on the cans (specially designed acoustic silk). The headphones throw out high-fidelity sound from 20 Hz to 20,000 Hz with a natural feel. Finished in a special titanium-silver alloy, the headphones have a list price of \$600 (Rs 30,000)

Veho USB Turntable

The guys at Veho offer a stylish black turntable with a belt drive and a diamond stylus that interfaces with your computer via a USB drive. That's right; you are looking at a turntable that rips vinyls. The turntable can handle 7-, 10- and 12-inch records. Also in the box are recording and editing software for clearing up the sound from old and mouldy records. The turntable costs \$105 (Rs 5,250)



Pico-C Eloquence

The Pico-C Eloquence from Super Talent is an 18K solid gold flash drive. Each drive can be customized with text or a corporate logo, and comes with a serialized certificate of authenticity. The drive packs in 8 GB of data and ships in a black jewel box. Despite the gold, the drive is made for rugged use and is water resistant. The drive is available by pre-order for a limited time only, for \$599 (Rs 29,950).

Sharp 108-inch LCD TV

Say hello to the grand daddy of all LCD TVs. At a full HD resolution of 1920 x 1080 and a high contrast propriety TFT screen, all those holding on to plasmas are given a run for their money. The television has three HDMI inputs and two HD inputs.

The world's largest plasma TV ships for \$148,995 (Rs 74,49,750)



The Very Best Products Of 2008

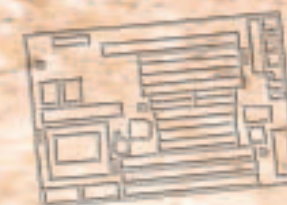
It's that time of the year again. December; the one time we do not conduct any comparison tests. This is the time to contemplate; on the year that has gone. It's *Zero1 Awards* time. This is the time we reward the best products of the year in each category with a much coveted *Zero1 Award*. Since we already give awards to our comparison test winners, one might question the need for another reward. The fact is that our reward system as selective and thorough as it is; is far from perfect. Allow us to explain. We test a particular product category a few times a year — at the most. However, manufacturers refresh product lines several times a year. In fact it's a common occurrence for us to just finish with a test based on a product category, only to find a slew of new products releasing a few weeks later.

Digit's Zero1 Award is one of India's most coveted trophies; find out which products walk away as the true champions of 2008

For us *Zero1* represents the pinnacle of our testing endeavours; and the podium belongs only to the best. This is one award we take doubly seriously; with utmost commitment to quality. And the reason behind this is you — our devoted readers; who deserve the very best of our efforts. As a labour of love and our devotion to our reader, in addition to our challenge to remain the very best when it comes to providing informed product reviews, we undertake

the daunting task of conducting a thorough market survey. We study each of the product categories that are covered under the *Zero1* umbrella. We compare the best products, as per our reviews, in each category to any new products that were not in market at the time of our comparison test, and try to ascertain for ourselves if the newcomer has a chance of besting the reigning champion. We consider features, performance and price here.

If we feel a new product stands a good chance of displacing the winner, we call for the product for review. Once in our test labs, we submit it to the same gamut of tests that we use in our comparison test. The answer as they say; is in the scores, and if the results are positive, we have a new winner; and thus a *Zero1 Award* winner is born. In case the products we tested remain the best available to date, then they're rewarded with a shiny trophy of their own. Our awards ceremony (to be announced soon) is the time when a trophy is actually presented to the manufacturer. This is our way of saluting the best product available for the current year. The manufacturer gets a shiny accolade to decorate his mantle, our readers are informed about the best products; and we have the distinct pleasure of knowing that our sleepless nights have benefitted somebody.



CELL PHONES

Cellphones are a product category which sees constant upheaval as new models are continuously pushed towards market; and product lines are refreshed every three months or so. This year has seen the entry of several lower-priced PDA cellphones in the market giving users with smaller budgets the chance to dabble with higher-end phones that were previously unaffordable. Smartphones have also trickled down to the masses and cameras, good screens and decent music capabilities are now available at previously unheard of prices. This year also marks the entry of GPS into cellphones as a much coveted feature; irrespective of its usage. We've also seen the entry of a large number of three plus megapixel head-phones in the market and at very competitive and sensible price points.

Cell Phones Up To Rs 8,000

REIGNING CHAMPION (BEST BUY)
LG KG195

LG's little KG195 impressed us with its set of features for the price. With solid build quality, a camera and memory expansion along with a decent colour screen this phone is priced at Rs 3,990. For someone looking for something on a shoestring budget this is it.



LG KG195



BEST PERFORMER
Nokia N95 8 GB

Nokia's previous generation flagship is just the best phone around. Although Nokia has gone ahead with the N96 we figure they've missed out on a trick or two, particularly with the performance of the music player and the phone's battery life. The fact that the N95 8 GB also has a faster processor than its successor is also of importance to quite a few people. The N95 8 GB remains one of those few devices that approached being perfect in most ways.

CHALLENGER(S)
None

AND THE WINNER IS
LG KG195

LG has a winner that is unbeatable for its ratio of features to value for money. To add to its value it's a good cellphone with decent signal quality and a good keypad. At this price point we could not find anything better.

Cell Phones Between Rs 8,001 And Rs 15,000

REIGNING CHAMPION (BEST BUY)
Sony Ericsson W380

Sony Ericsson's W380 is a solid multimedia phone at a superb price point. For starters it's

super cute with jazzy colours and a nice solid feeling clamshell form factor. The second display is embedded in the fibre body which we discovered is actually translucent. With a very decent display, 1.3 megapixel camera, memory expansion and immeasurable style the W380 was our best buy in this category.

CHALLENGER(S)
None



AND THE WINNER IS
Sony Ericsson's W380 walks away with our Zero1 award. A superb looking phone designed to appeal to both sexes that's reasonably feature rich as well.

Cell Phones Above Rs 20,000

REIGNING CHAMPION
Samsung U900

The U900 also known as the *Soul* is a beautiful cellphone. Its slider is ultra slick, the backlit touch buttons work flawlessly and it is superbly well-built phone to boot. The keypad is nice and spaced out; and the shortcut buttons well placed. The fact that the phone has a very funky backlit feather touch menu buttons are just a novelty. Samsung has dropped in a very clear and crisp screen; in addition to this the five megapixel camera and great sound quality is something everyone will like. Priced at Rs 20,000 this phone is just right for the features it offers.



CHALLENGER(S)
Nokia N85

The Nokia N85 is the latest from their N8x series. An OLED screen which is a first from Nokia for their high-end phones should help with battery life as well. This phone looks very neat and is solidly built. A heavy duty 1200 mAh battery provides good talk time while connectivity options like WLAN and Bluetooth along with A-GPS support mean you're well covered for any usage pattern.

Oh, and it's a double slider as well; which is a rarity and grants additional flaunt value. The only possible minus is the slightly steep price of Rs 27,299; however this is to be expected from such a feature-rich phone.

AND THE WINNER IS
Samsung U900s

For its flaunt value, sheer usability, excellently laidout keypad and the heavy duty, slick slider Samsungs U900 is unbeatable for the price. It's a feature-rich phone that's built to last; and it is our choice for a high-end smartphone.



STORAGE

Storage drives haven't been left lagging behind as technology moves on. Drives have been getting faster, more compact and cheaper than ever before. Storage devices come in all kinds of shapes and sizes depending on the needs of the user. We've tested all kinds of drives over the past year — internal hard drives, external hard drives of all sizes, portable external laptop drives and even Flash drives. We've had a few new drives come in for testing and we've had new winners as some of the comparison tests were held early in the year.

Internal Drives



REIGNING CHAMPION

Seagate 7200.11 ST3500320AS

The fastest internal hard drive we tested last year was the Seagate ST3500320AS, a 500 GB drive. Although not the fastest of all the drives of its time, it still impressed us by its performance. The 7200.11 came with 32 MB cache which one of the few drives of its time to do so. With the cache, it was able to bypass drives of much larger capacities that would be expected to be faster.

CHALLENGER

Western Digital Velociraptor 300 GB

The all new WD Velociraptor is one of the newest drives to strike back at a time when SSD's (solid state drives) threaten to nibble away at the market with claims of extremely high speeds. The WD Velociraptor with its unusual design with a tiny drive in a large cooling casing breaks all barriers. Speeds once thought unachievable were reached



BEST PERFORMER

Intel 80 GB Solid State Drive

Intel intrusion into the solid state market has taken everyone by surprise. The drive was expected to be really fast but no-one really expected it to be this fast. In write speeds, it wasn't as fast as the Western Digital Velociraptor 300 GB, and was actually about 20 MBps slower. The read speeds, on the other hand, were much more impressive. With the drives put into RAID, unbelievable speeds were reached. The random access speed was also impressive. Even though, writing data isn't its strongest point, it makes up for it in read speeds. Let's not forget that the Intel SSD is low on power and runs cool as well.

when we pitted it against the Intel SSD earlier this month. The WD Velociraptor doesn't come cheap though. This 300 GB drive is available for you at a high price tag of Rs 16,500.

AND THE WINNER IS

Seagate 7200.11 ST3500320AS

The Best Buy awards are given not only for performance but also for what makes the best sense to buy and has the best bang for the buck. The Seagate 7200.11 ST3500320AS is



to this date one of the well known drives to buy. At just Rs 3,200, it still makes excellent value for money. 500 GB is still a lot of space and that too being available at such low prices make it one of the best drives around.

External storage

REIGNING CHAMPION

FreeCom Network Drive 500 GB
WD Passport Studio 320 GB

The *Best Buy* award for external storage drives is a tie between the WD Passport Studio 320 GB and the FreeCom Network Drive 500 GB.



The WD Passport Studio was the better looking drive. The Freecom was a plain box and the more function-oriented of the two. The WD Passport Studio 320 GB makes excellent sense for those who want portability. The Freecom Network Drive on the other hand is for those who want capacity at a sensible rate. It's not as compact as the Passport Studio 320 but it has something that the WD Passport Studio 320 GB doesn't — network support. This allows the somewhat portable Freecom drive to be used as a network storage device

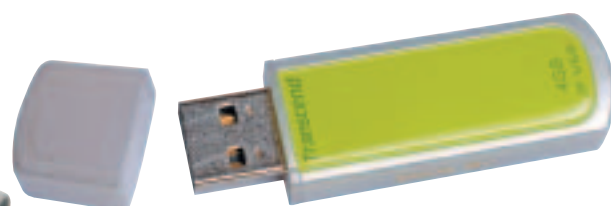
as well. The performance on the network is also pretty amazing. The WD Passport Studio 320 GB comes with a Firewire port which allows even faster transfer rates.

Flash storage

REIGNING CHAMPION

Transcend JetFlash V60 4 GB

The 4 GB Transcend JetFlash V60 was one of the cheaper drives during the comparison test in the January issue of *Digit*, yet it managed to score a lot better than other drives in its price bracket.



CHALLENGER

Corsair Voyager 8 GB

The new Corsair Voyager 8 GB we tested churned far better numbers than the JetFlash V60 4 GB. The price for this flash drive is also cheaper than what the V60 4 GB was back then.

AND THE WINNER IS

Corsair Voyager 8 GB

A drive priced as little as Rs 875 performs more than two times better in some benchmarks. The price drops have made Flash drives so affordable that even performance oriented drives are now available at throw away prices. The Corsair Voyager 8 GB is the perfect example of this which is why it gets the award for *Best Buy* in the flash drive category.



BEST PERFORMER

SanDisk Ducati Edition (4 GB)

SanDisk's Ducati branded flash drive was designed and even shaped to be fast. It turned out to be the best performer of all the flash drives that we tested in January. Back then, it was priced at close to five times the price of a standard 4 GB flash drive. It was faster by a couple of times as well which made us award it the winner of the best overall performer in its category.

CHALLENGER

Corsair Voyager GT 16 GB

The new Corsair Voyager 2 GB visited the Test Centre early this year and now with price drops in the flash market; a 16 GB version of the same drive has arrived in time. It's called the Corsair Voyager GT 16 GB. Priced at around Rs 2,200, it's a little more than what 4 GB value flash drives were priced at.

AND THE WINNER IS

Corsair Voyager GT 16 GB

The Corsair Voyager GT 16 GB might not have the same fancy looks as the SanDisk Ducati Edition but it effortlessly beats its record. The performance from all the tests shows that the Corsair drive was faster than the SanDisk Ducati Edition. To make matters worse, the SanDisk Ducati 4 GB is still costlier than the faster Corsair Voyager GT 16 GB. The Voyager GT 16 GB is for all these reasons our choice for Best Overall Performer drive for its category.



LCD MONITORS

LCD monitors have become synonymous with most desktop PCs; their flexibility in terms of placement, compactness and the fact that their prices have been steadily diminishing assured them steady market demand. To be honest the last six months has actually seen stagnation in terms of demand; the period of sharp growth was only till mid-2008. Prices that were tumbling have suddenly stabilised; it seems manufacturers have realised that demand will sustain itself; and price need not be any lower to ensure steady consumption.

The way the market stands today, the 22-inch category is the sweet spot between price and screen size at the moment. 19-inch and 17-inch LCDs still sell a lot more; but these are the new value category. 15-inch monitors have largely become obsolete except for non-Internet and multimedia tasks. The 24-inch category offers the most performance in terms of screen size; as these monitors typically support a full HD resolution of 1920 x 1200 pixels; which means they are more for those into gaming at maximum resolutions and movie buffs than regular multimedia users.

22-inch Monitors

REIGNING CHAMPION

Dell SP 2208 WFP

This monitor is based on a glossy, TN panel and besides this we could hardly find any fault. Its got a good contrast ratio and brightness levels will not disappoint unless you are really discerning. We found it good for movies and games except when the glossy panel causes reflections. The presence of an integrated 2.0 megapixel webcam is just sweet; especially for a price of Rs 15,000. It's got an HDMI port too; so it can be used with a home entertainment system as well.



BEST PERFORMER

LG 246WP

With a static contrast ratio of 1000:1, the 246WP is based on an eight-bit MVA panel and offers a matte finished panel that doesn't cause distractions due to reflections. This monitor has a superb brightness level and the contrast ratio is good enough for it to top the DisplayMate suite of tests. Its great for movies with a resolution of 1920 x 1200 pixels. In fact any user will appreciate the huge desktop size available; once you work with 24-inches of desktop you will never want to downgrade. Movies and games are fun; and this includes dark atmospheric games like S.T.A.L.K.E.R. and F.E.A.R.; you will see the darkest of scenes in proper detail; something that a TN panel-based LCD can never give you.

It's the best monitor for any sort of multimedia usage; and the best part is its price — Rs 24,000; which we feel is a steal for a monitor that provides amazing performance and a plethora of connectivity options that includes HDMI and Component connects.

CHALLENGERS

Samsung T220

The Samsung T220 represents the best of the design elements from their Bordeaux series of



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large screen LCD displays. This is a beautiful monitor that is a decent performer. It scores in the looks department mainly although gamers will not find anything serious to complain about. However its contrast ratio is not as good as the Dell SP 2208 WFP.

AND THE WINNER IS

Dell SP 2208 WFP



Dells 22-inch LCD is a winner in more ways than one. Good connectivity options, excellent performance for a TN panel, a great price all coupled with a good webcam makes it a killer deal.

17-inch Monitors

REIGNING CHAMPION

Dell 1708 FP

This monitor is superbly built monitor with a height, swivel and angle adjust stand; this in



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itself is a feature that is unheard of in the 17-inch category which is usually considered one for users on a shoestring budget. It's a TN panel so it didn't ace our DisplayMate tests; but very few 17-inch monitors based on TN panels usually do. The best part is, it's experienced a price drop; from Rs 11,500 to Rs 9,500. Which makes it a decent deal for someone looking for a monitor that will tilt and even swivel.

CHALLENGER(S)

None

AND THE WINNER IS

Dell 1708 FP



Dell scores in the 17-inch segment as well. This monitor is very well built; it performs rather decently and has a juicy price tag that may be hard to ignore when you look at the attention to detail in the stand among other parts.



DIGITAL CAMERAS

Developments to digital cameras in the past year continue, and prices also continue to dip. What this means is that you get better and newer features added to cameras at a certain price point. We saw some of the most unique designs and capabilities from all the participating brands in 2008 — with even cameras that were waterproof and shockproof with rugged bodies.

Like every other category of products, cameras also seem to keep getting better by the minute. Although we'd tested cameras as recently as September, we wanted to make sure that the right camera won our awards, and called for newer revisions to test.

Over 10,000

REIGNING CHAMPION

Canon Digital IXUS 85 IS

Digital IXUS is part of Canon's premium line of products. The IXUS 85 IS is one of the most compact cameras we tested in the September Digital Camera Test, and also one of the best in terms of quality. At its heart, lies a 10 MP sensor. It is a simple camera to use and its speciality is its size and design. The buttons have the right feel and the interface is easy and straight-forward to use. One complaint is that this camera lacks manual focus. The flash is strong but does not wipe out important details from the photos.

Compact camera has its own set of drawbacks and the other missing feature on this camera is a good zoom lens. The camera only comes with a 3x optical zoom lens. The pricing of the IXUS 85 IS was also a bit on the higher side but it was a lot cheaper than the other cameras of its category. It also had features matching the costlier cameras.



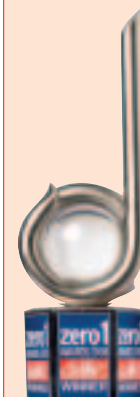
BEST PERFORMER / CHALLENGER

Canon PowerShot SX110

The Canon PowerShot SX110 is an improvement over the older SX100. It's also our new challenger for the Over 10,000 bracket. The SX100 was a great camera with a plethora of features. It is fair to say that it has an edge over the IXUS 85 IS in features. The SX100 was bulky and its average quality was the reason it was

n't the winning camera in the test. The new SX110 has some improvements in that aspect. It is well built and everything on the body, although made of plastic, has a sturdy feel. It also has a good quality 3-inch screen. The SX110 thus becomes an ideal contender for cameras priced over Rs 10,000. It's even more worthy as its 10x optical zoom capability takes it to the edge of the ultrazoom camera domain in a fairly compact form factor.

Other than being the Best Buy award winner of the all the point and shoot cameras we've tested, it also is the best performing one with the best of features.



great either. Even if this is an entry-level camera, some of features such as face detection have been incorporated into it.

CHALLENGER(S)

Canon PowerShot A590 IS

The Canon PowerShot A590 IS was one of the best cameras which just about fell into the high-

er price bracket with cameras priced upto Rs 16,000. The cost of an A590 IS back then was Rs 10,995 but now has dropped to just under



AND THE WINNER IS

Canon PowerShot SX110

The Canon PowerShot SX110 is the absolute winner of this award. The previous SX110 would also have been a winner if it wasn't for the below-par quality and performance. The improvements in this new version are great. At its very sensible price of just Rs 16,995, it makes both a very good performer and good value for money. Let's also remember that there are no compromises in this product

Up To Rs 10,000

REIGNING CHAMPION

Canon PowerShot A470

The Canon PowerShot A470 is part of the PowerShot 400 series which has always the entry level cameras. The A470 was the best we had under the Rs 10,000 bracket. With a price of so low, it surpasses many other cameras in its class when it comes to features and quality. Macro photography especially is simple with his camera. Whats not so great with the A470 is its age-old blocky design and a slightly outdated user interface and the video recording performance isn't so

Rs 10,000. For this price, it makes even better sense than it did back during the comparison test. In specifications, it's a lot like the A470 but has been built and designed better. It looks and feels like a point and shoot should. Some of the additional features such as manual come into his camera which the A470 lacks. In short, it's a lot better than the A470 but not the best point and shoot of all the cameras. The video recording functionality has been handicapped and the build quality is not top notch either.

AND THE WINNER IS

Canon PowerShot A590 IS

For anyone looking for a point and shoot for under Rs 10,000, there is really no need to look at anything other than the A590 IS. With its neutral colours, good crispness of photos and advanced features only found in cameras costing Rs 2,000 or so more than it. If the A470 is too simple for you and the SX100 IS too costly, then the A590 fits your requirements perfectly.



GRAPHICS CARDS

Most of our readers who've been clamouring about DX 10 will know by now that Microsoft has duped us. The famed next generation graphics platform was nothing more than a technology changeover for them and a prepping platform for DX 11, which will be the next graphics standard. The few game developers who used the DX 10 standard in developing their games were rewarded with slightly better visuals and a whole lot more abuse from the gaming fraternity who more often than not experienced flagging frame rates from these new games. However, your DX 10 ready card is far from useless. At least MS got ATI and NVIDIA back to their drawing boards to come out with unified shaders, which has been the biggest shot in the arm for 3D gaming since *Doom*.

The biggest plus point for us has been the availability of cheaper, faster graphics cards. The previous generation high-end become the next generations' mid-range and the mid-range products become entry-level; all this in terms of pricing of course. The best example is NVIDIA's GeForce 9800 GTX. Cards based on this GPU were initially priced at around Rs 25,000; and this was touted as the replacement for the 8800 GTX.

Today, post the debut of the GTX 280 and a mere eight months later the 9800 GTX is priced at Rs 10,000. Its abilities haven't diminished, but better and faster cards have pushed it to the mid-range price bracket, which it rules, owing to its high-end origins.

High-End

REIGNING CHAMPION

Palit Radeon HD 4870 SONIC

Palit's Radeon HD 4870 has been an impressive performer since its inception and owing to superb pricing it's actually able to compete



BEST PERFORMER

XFX GX-280-ZDD9

This graphics card was based on an over-clocked version of NVIDIA's GeForce GTX 280 GPU. With 240 stream processors clocked at 670 MHz and a mighty 512-bit wide memory bus that feeds a massive 1 GB of GDDR3 memory clocked at 2430 MHz the XFX GX-280-ZDD9 is all about speed and raw power. With the exception of *Crysis* on DX 10 at maximum settings, which kills all graphics cards anyway, the XFX GX-280-ZDD9 can handle any game you throw at it. NVIDIA has managed to deliver a healthy 50 to 60 per cent performance increase with the GTX 280 series from their previous generation 8800 Ultras. The only possible downside we can think of is the price — this card commands a price tag of Rs 45,000.

with the GTX 260 at a lower price point. This card features a unique looking cooling solution with two large fans that really keep things cool; it never crossed 65 degrees on load — impressive. The card itself is lightweight and a superb performer, which makes it a sensible buy in the high-end category. Equipped with 800 stream processors and 512 MB of ultra fast GDDR5 memory the HD 4870 SONIC will easily run all your games at maximum detail levels and remain cool in the process.

CHALLENGER(S)

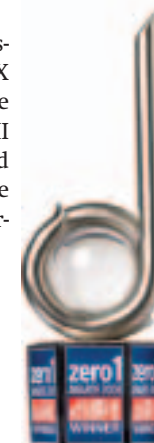
Palit Radeon HD 4870 SONIC 1 GB

What's better than a Palit HD 4870 SONIC with 512 MB of GDDR 5? The 1 GB version of course. Palit gave this card a much needed extra 512 MB of GDDR 5 memory. Priced at Rs 18,500, the Palit HD 4870 SONIC 1 GB is a gamers' dream

come true that manages to displace the much costlier GTX 280 in some benchmarks. The fact that this card has HDMI and DisplayPort connects and comes with a really effective cooling solution is the proverbial icing on the cake.

AND THE WINNER IS

Palit Radeon HD 4870 SONIC 1 GB



If you need a really fast card and you have anywhere near Rs 20,000 to spend on the same, the HD 4870 SONIC 1 GB should be at the top of your shopping list. Its as simple as that; and there is nothing more that you really have to consider. A card whose performance is at par, (for the most part), with the fastest card on the planet; at a price that is 40 per cent lower, makes buying this virtually a no-brainer.

Mid-Range

REIGNING CHAMPION

ZOTAC 9800 GTX AMP! Edition

This card is a gem. ZOTAC took a 9800 GTX GPU and overclocked it to an insane 756 MHz, up from the default speed of 675 MHz. At a price of Rs 10,555 this card is a superb mid-range piece of gaming equipment. It'll run most games at high resolutions and not pant in the process. It



also received our *Editors Pick* award and was the fastest mid-range graphics card in our test. On a budget of Rs 10,000 or so, do not even bother to look elsewhere.

CHALLENGER(S)

None

AND THE WINNER IS

ZOTAC 9800 GTX AMP! Edition

Nobody was able to challenge this card for a shot at our Zero 1 Award. We're awarding ZOTAC with this award, and we await even more superb products from this relative newcomer to our markets.

Entry-Level

REIGNING CHAMPION

EVGA 9600 GT

The entry level category is always fiercely competitive as all vendors look to offer best bang-for-buck. This card stood out for a number of reasons. It was a fraction slower than the fastest card in the category but was significantly cheaper. This card also featured a single slot cooling solution, very suitable for powerful HTPCs or a computer where space is restricted, or in case you need a PCI slot vacant for a sound card. The bundle was sparse, but in terms of performance and price EVGA's 9600 GT is unbeatable.

CHALLENGER(S)

None

AND THE WINNER IS

EVGA 9600 GT

A sweet card, for a sweet price of Rs 8,750; you may actually be able to get this card for a lot less, especially since NVIDIA has announced price drops recently. Although the price cuts haven't reflected in the Indian markets yet, it should have by the time you read this. If you want an introduction to gaming and this is your first PC, this card is just the thing to get.



LAPTOPS

Notebooks are one of the hottest product categories in 2008. We've seen a lot more compact models this year. It seems people are moving away from the large, desktop replacement notebooks and demanding portability more. We're pleased to see this trend. Additional technologies are now focussing on extending battery life which is another element that affects true portability. After all what good is a 12.1-inch, ultra compact notebook with a battery life of just over an hour? Intel's Atom processors have delivered extremely low power consumption which favourably affects battery performance. The newer Centrino 2 platform codenamed *Montevina* is also available on some notebooks from the bigger brands.

Elements like ergonomics, biometric devices, multimedia buttons and HDMI ports are becoming important aspects to consider that users should start expecting on their notebooks since this allows a flexibility of use that is a serious benefit to anyone buying such a product. Discrete video solutions are also making their way into notebooks in the sub Rs 50,000 price range; this is a significant because the earlier misconception was that discrete video solutions are only for those looking to play 3D games on their notebooks. However we've seen video solutions helping with video decoding and playback and freeing up valuable memory resources that integrated graphics solutions would otherwise hog.

Workhorses Up To Rs 40,000

REIGNING CHAMPION

HCL Z24 C2D

This 14.1-inch notebook was the most impressive for its price. We also liked the fact that despite its compact size (as compared to a 15.4-inch notebook), it was priced similarly. A solid body meant this notebook was rather rugged, and the keypad was large and nicely laid out. Its got enough of processing grunt to serve as an office and surfing desktop replacement.

ment. Priced at Rs 38,490 the Z24 C2D is a good notebook for anyone looking at a notebook under Rs 40,000.

CHALLENGER(S)

None

BEST PERFORMER

Dell XPS 1730

Only expletives, of the good kind, come to mind when we think of the mighty XPS 1730. It's bulky, at nearly five kilograms, and is as thick as an Oxford dictionary, but that's where the criticism ends. It's fast, furiously so, and has class leading components that put most desktops around to shame. How does a Core 2 Duo X9000 CPU running at 2.8 GHz sound? Add to that 3 GB of DDR 2 800 MHz memory and the option of a 320 GB, 7200 rpm hard drive and you know the storage system is going to be faster than other notebooks. Then comes the video solution and you'll gasp after reading this — dual GeForce 8800 GTX graphics solutions configured in SLI. Each of these graphics cards has a dedicated 512 MB of 256-bit GDDR3 memory. So its much faster than your desktop; it also has a 17-inch screen that supports a whopping 1920 x 1200 pixels; so 1080p is natively possible. You can also opt for a RAID 0 hard drive array which will add to the benchmark figures. With great inbuilt speakers and a well laid out keypad the XPS 1730 can also serve as a mundane notebook, should the need arise. It's also got enough lighting to make you, err, your notebook the centre of attention at most LAN parties.

At Rs 2,00,000, the XPS 1730 isn't exactly affordable or even reasonably priced; but its the fastest notebook your money can buy. Its also well built enough to last for ages.



AND THE WINNER IS

HCL Z24 C2D

While 14.1-inch notebooks are available from HP/Compaq, these models are priced at slightly above the Rs 40,000 mark. Very few notebooks offer the kind of rugged build along with simple, usable ergonomics that HCL possesses.

Ultra Compacts

REIGNING CHAMPION

Dell XPS M1330

Dells XPS M1330 is a marvellous conglomerate of performance, features, compactness and price. Never before have we seen this on a notebook at this price point. The fact that the XPS M1330 is fully configurable means that you can actually opt for a better processor or more memory or even a larger hard drive. In terms of usability the 13.3-inches strikes the right balance between power, screen size and portability. It also has the best components for the price; and Dell's warranty is iron clad.

CHALLENGERS

Sony Vaio VGN SR26GN,
Lenovo IdeaPad U110,
Apple Macbook 2008



Sony's latest SR26GN is a feature-rich notebook. Unfortunately we do not like its build quality which is tacky at best and definitely not something we'd expect from a product endorsed by the Vaio brand name.

Lenovo's Ideapad U110 is a really compact 11.1-inch notebook that looks a little mediocre in terms of its external body and unattractive, large keys. But it's a feature-rich notebook not to mention a good performer.

Apple's new Macbook is perhaps the best addition to the 13.3-inch line of notebooks; its fast, has got a new processor (Intel's P series) under the hood and Mac OSX is quite fast. The fact that Office 2008 for Mac is also thrown in makes the package a lot sweeter, but the notebook has a substandard screen, which we feel should not be part of any Macbook.



AND THE WINNER IS

Dell XPS M1330

At its price point the Dell XPS M1330 makes the best possible buy. Its fast and the best part is you can configure yours thereby scaling up the performance or cutting down on its price, according to your needs. Its quite slim when configured with a white LED display and is built quite well. If you're looking at a good performer at a very good price point in a compact notebook the XPS M1330 is the one to get.

Business Notebooks

REIGNING CHAMPION

Fujitsu Esprimo U9200

With a 12.1-inch screen and a good processor (Intel Core 2 Duo T7500), the Esprimo U9200 is a capable business tool. Its rugged build and good choice of components make it a delight for business users. It has a decent screen as well. Although it's a little heavy but at a price of Rs 43,500 this notebook is hard to beat; most laptops with similar screen sizes are priced at well above the Rs 50,000 mark.

CHALLENGER(S)

None

AND THE WINNER IS

Fujitsu Esprimo U9200

For a price tag of under Rs 45,000, the Esprimo U9200 is a serious notebook for the corporate. Its powerful, fast and best of all ultra compact. The rugged industry grade finish makes it a delight to lug around; no flashy lights here; just a pure notebook experience that's hard to beat unless you are willing to spend a lot more.



MOTHERBOARDS

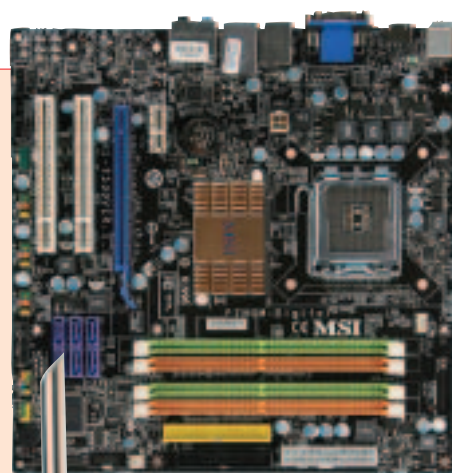
The yearly motherboard comparison tests are one of the most important categories of hardware tested. The last test was conducted for the November 2008 issue just after the new chipset releases over the past months. Motherboards with integrated graphics solutions in this test and another test for motherboards with no integrated graphics shall be coming up in the January 2009 issue. The motherboards had to split up into two big groups for the two platforms – Intel and AMD. As this test was conducted just a month ago, there are obviously no “Contenders” for any of the categories.

Motherboards For Intel Processors

REIGNING CHAMPION

ZOTAC GeForce 9300

The ZOTAC GeForce 9300 was our winner for the Best Buy mainly for its price. It performed very close to the MSI P7NGM Digital. It didn't have the same build quality as the MSI board, but it was a good Rs 700 cheaper as well. There were no big compromises either – this is a board that comes with a fan for the chipset, which is a GeForce 9300 board that can hold up 16 GB of DDR2 RAM. With the same performance and features at a cheaper price, it makes excellent sense. For people who want a cheap HTPC solution based on an Intel system, this motherboard is the one to buy.



Motherboards For Intel processors

BEST PERFORMER

MSI P7NGM DIGITAL

There were plenty of new chipset releases for the Intel platform. The most number of updates came from Intel and manufacturers were

quick to make new boards. Some of the new graphics chipsets from Intel were G43 and the G45. The other big lot of chipsets were developed by NVIDIA and the latest being the GeForce 9300 series for Intel processors.

The MSI P7NGM DIGITAL was one such motherboard that clearly had the edge over its competition. The only problem with this GeForce 9300 like the others was the inability to overclock. The BIOS lacked decent overclocking features and the northbridge also already runs too hot to overclock. As a solution, it makes excellent sense. The MSI P7NGM is without doubt the best onboard graphics solution that you can find for the Intel platform. All the necessary features were present and the performance in desktop applications benchmarks in general was also good. Games ran a lot faster than the Intel-based boards but more or less the same as the other GeForce 9300 boards that we tested.

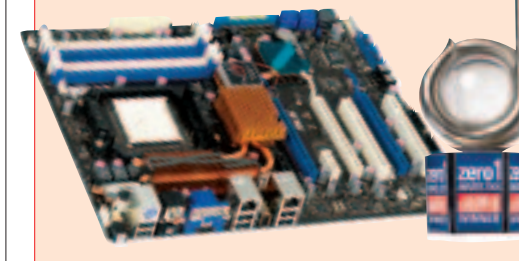
Even though this was one the first GeForce 9300 boards to come out in the market, it's still designed pretty well and also one of the few GeForce 9300 ones to be built with solid state capacitors. The price tag of Rs 5,500 was definitely a little expensive as compared as compared to the other boards but it made a well worth purchase anyway.

Motherboards For AMD

BEST PERFORMER

ASUS Crosshair II Formula

The ASUS Crosshair II Formula is the perfect performance board for enthusiasts. It gets the award for Best performer in the category for motherboards for the AMD platform. The board was based on the nForce 780a SLI chipset. The Crosshair II Formula performed exactly the same as the other ASUS board – M3N-HT Deluxe. The Crosshair II Formula came with two gigabit network ports. The package even contained the game *Company of Heroes - Opposing Fronts* and an LED poster. Priced at Rs 15,450, it was expensive, but is one of those products where you get what you pay for.



Motherboards For AMD Processors

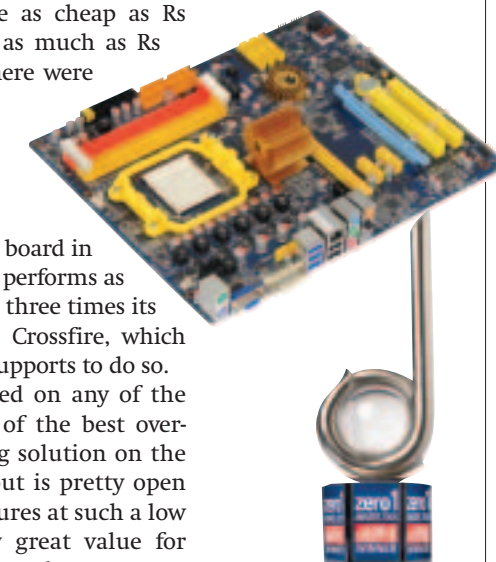
Motherboards for the AMD platform came in larger numbers. They were plenty of AMD based chipsets and even some NVIDIA chipsets. The motherboards we tested were as cheap as Rs 3,700 and prices went up to as much as Rs 15,000. Like any other test, there were the select few that stood out.

REIGNING CHAMPION

Jetway HA06

The Jetway HA06 is the perfect board in that aspect. At just Rs 5,500, it performs as good as boards that are two to three times its price. It also supports AMD's Crossfire, which makes it one of the cheapest supports to do so.

Jetway hasn't compromised on any of the features either. It has some of the best over-clocking features. The cooling solution on the board is sketchy but the layout is pretty open and spaced out. All these features at such a low price make it an absolutely great value for money motherboard. It's the only reason we give it the award for best Jetway HA06.



Cool Performance

The gold winner, the Corsair Flash Voyager, is fast, has sturdy build quality, and offers a good software bundle. To top it all, Corsair offers a 10-year warranty and on-the-spot replacement, no questions asked.

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Survivor USB

Gaming Memory

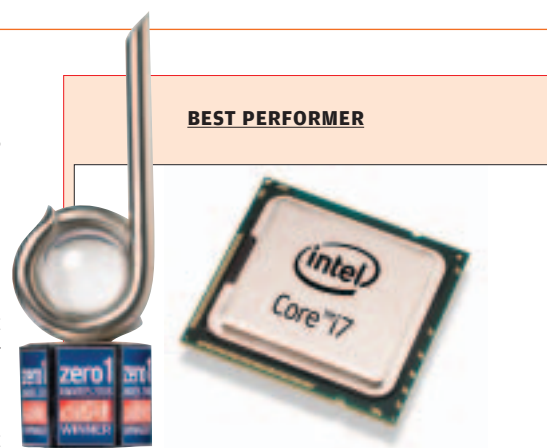
Security USB

Mainstream Memory

CPUs

Processors are the ramp models of the computing world. Nobody makes as much a splash entry as a new processor and although in our estimation much of the attention is overrated, one cannot deny the appeal of the latest and fastest dual- and quad-cores. Parallelism is the theme of the future for Intel and AMD as their CPUs have grown extra cores progressively. You needn't worry about your CPU behaving sluggishly anymore; the latest dual- and quad-cores are veritable powerhouses and can tackle the heaviest of applications with ease. The fact that most applications aren't multithreaded to begin with doesn't faze these manufacturers one bit; they've decided to approach the problem with brute force. Add an extra core, enlarge the cache and bump up the clock speeds, all while shrinking the die manufacturing process to cut costs.

Intel has shifted to a 45nm process while AMD is in the process of making the transition to 45nm. We've seen Intel move to DDR2 in the past and it seems history is about to repeat itself with the latest Intel CPU codenamed Nehalem. This time DDR3 is being adopted in lieu of DDR2. Although AMD hasn't planned such a move they may well have to consider integrating DDR3 support on their next generation Deneb CPUs; which are scheduled for an early 2009 release. AMD's own Phenom CPUs have done little to steal Intel's thunder in the performance arena and these remain budget options compared to Core 2 Duos and Core 2 Quads. Intel's quad-cores, also called Yorkfield CPUs, have served their purpose well and while they're still top performers it seems Nehalem is the CPU to watch. This CPU has an integrated memory controller which is a first for Intel; as they've totally relied on their FSB for memory to CPU communication. This has been identified as a bottleneck by us some years back, and it seems to be a logical move to an integrated memory controller. With the Nehalem, Intel shifts to an integrated memory controller, so the Northbridge no longer has memory communication to worry about. The Nehalem has grown in terms of pin count; from an LGA 775 to an LGA 1366-contact configuration. In addition Nehalem also has an L3 cache, although the L2 caches are much smaller than previous dual- and quad-cores. So now both AMD and Intel are on somewhat levelled playing fields in terms of technology.



BEST PERFORMER

Intel i7 965 Extreme (3.2 GHz)

A long name for such a mighty CPU and is not to be confused with the P965 motherboard chipset of yesteryear. Our performance winner in our test last month was initially the Intel Core 2 Extreme QX 9775 which ran at a mighty 3.2 GHz. This CPU supports an FSB of 1600 MHz and 12 MB of L2 cache. As impressive as that may seem, it pales in comparison to the newcomer who manages to outdo it in 90 per cent of all benchmarks. Bear in mind that the i7 965 Extreme was running slower memory with slower timings and the platform itself was in its initial stages; this is bound to get faster as support and drivers improve. In short Nehalem will get faster. This CPU also supports hyper-threading; which means Windows actually recognises it as an eight core processor — cool and immeasurable flaunt value. With an L2 cache of 1 MB, L3 cache of 8 MB and an HTT link that runs at a speed of 6.4 Gbps the i7 965 Extreme has a superb set of on-paper specifications

Whatever the application be it 3D modelling and rendering, video encoding, file compression/decompression, image editing or benchmarking the i7 965 Extreme is blazingly fast. Games aren't really optimised for multi-cores as yet but that should change in the future; yet we saw a definite upward scaling with shifting from a QX 9770 to the i7 965 Extreme, and barring a single bug while benchmarking *Unreal Tournament 3*, this is the CPU to get if you really want speed and aren't afraid to pay for it. The i7 965 Extreme should debut at a price of Rs 50,000 and will spawn a host of cheaper variants in the future.



REIGNING CHAMPION

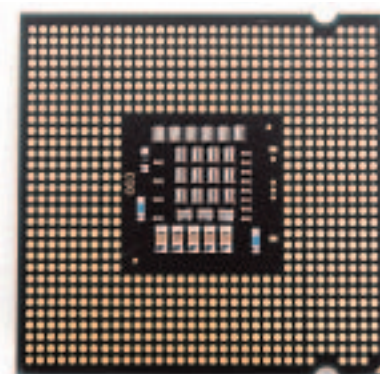
Intel Core 2 Q8200

Intel's quad-cores have been the object of desire by most performance junkies right from the time of their launch. Prices have fallen, better models have come out and in general buying a quad core is not an expensive proposition and one that even mid-range spenders can afford. All this started with the Q6600 (2.4 GHz), which was a bestseller for Intel. The Q8200 is an entry level quad core. At 2.33 GHz it features a meagre four megabytes of L2 cache (other quad cores have either eight or 12 MB of L2 cache). However, there's nothing entry-level about its performance and it lays the top-end AMD Phenom processors to rest rather easily. With a 1,333 MHz FSB this CPU is built around a cool running 45nm fabrication process and is very suitable for gamers and 3D professionals alike who want something powerful within price constraints. At Rs 10,950 or thereabouts the Q8200 is a superb buy for anyone looking for a powerful solution. So what is our only beef with Intel? The fact that they follow a global pricing structure and this CPU has got more expensive as the rupee falls further behind the dollar.

CHALLENGER(S)

Intel Core 2 Duo E8400

Intel had to try to beat themselves and the Core 2 Duo E8400 represents the best of that effort.



We'd tested the E8500 (3.16 GHz) earlier and at Rs 10,000 we thought that it was a little too expensive for a dual core, especially with the Q8200 and Q6600 lurking around. The E8400 is priced sensibly at Rs 8,500 and is a superb option for someone looking for a powerful PC or gamers. Given that games aren't multi-core optimised and respond to clock speed increments more, the E8400 is able to outpace some much costlier quad-cores that have slower clock speeds. This Wofdale CPU has 6 MB of L2 cache and runs at an FSB of 1333 MHz; the best part is that it's a 45nm part and runs very cool.

AND THE WINNER IS

Intel Core 2 Q8200



Despite the high clock speed on the Core 2 Duo E8400, the Core 2 Quad E8200 manages to steal its thunder. Having a PC with four cores is so much more future proof than a PC with two cores and the Core 2 Quad Q8200 is a solid choice for a powerful home PC. We reckon only gamers will really have any use for the higher clock speeds and opt for the E8400 over the Q8200. Even people working with 3D rendering will opt for the sheer parallel processing that four cores offer and the Q8200 is a superb choice.

PORTABLE MEDIA PLAYERS

PMPs have finally broken cover in India; and stepped boldly into the consumer space. Previously anyone who wanted a PMP went for a cellphone with music playback abilities and dumped the idea of a discrete gadget for music and movies. Convergence is a term we use all too frequently, even at *Digit*, but it bears remembering that there are no true substitutes for some devices. Just tell someone who has a good PMP from the likes of Apple, Cowon or Creative to switch to listening to music on his cellphone. Even if he has an N95, chances are he'll go "yuck".

PMPs have moved on from being just MP3 players to being a lot more multi-purpose. Many of them feature touch screens that are clear and crisp enough for a satisfying movie experience. You will also find a lot of other useful add-ons like a calculator, alarm clock, stopwatch, PIM (Personal Information Manager), contact book and so on. In fact many PMPs are full-fledged PDAs. Some like Apple's iPod Touch also have WiFi that allows you to access the Internet on the device via a built in browser. The most common feature is, of course, music and video playback and a few devices support multiple formats for both audio and video components. In short, PMPs are becoming all-in-one mobile entertainment stations.



BEST PERFORMER

Apple iPod Touch 8 / 16 GB

A lot of PMPs were excellent options and it was tough to choose a purist winner solely on the basis of performance. Most people still buy PMPs for their music abilities; after all you just cannot watch videos on your PMP on a crowded local or bus. Audiophiles demand the best; and Apple delivers. Whichever capacity you opt for, your ears are guaranteed a treat. Revealing, accurate highs;

to the point of being bright at times, they will serenade you. The mid-range is rich, with nary a hint of recession. The bass is clean, goes down low but is precise with no flabbiness whatsoever. Extreme bass heads may be a little disappointed; but we mentioned audiophiles, and flabby bass-boom has no place here.

Flash Based PMPs Up To Rs 10,000

REIGNING CHAMPION

Samsung T10

CHALLENGER(S)

Cowon D2

Cowon's D2 has been a sweetheart in our test labs this past year. It's very compact, and offers

unmatched features. The performance is right up there with the best of the PMPs and the touch interface adds a bit of pizzazz to an already attractive product. Our tests revealed its battery life to be a superb 37 hours while playing music; simply amazing. In terms of video quality the D2 has a superb albeit small screen that puts some of the larger screen based PMPs to shame. Music quality is superb; with just a hint of rounding off in the upper highs though to be honest this blemish won't even be noticeable to 99 per cent of users. The bass and mids are spot on, absolute tonal accuracy and the D2 is very suitable for audiophiles. It's available in two and four GB capacities, but thanks to the SD expansion you can get a lot more storage. Price reductions of the D2 now see it below the Rs 10,000 mark.

AND THE WINNER IS

Cowon D2

Cowon's intrepid D2 drops to under Rs 10,000 and ends up dominating proceedings in that category. If you're shopping for a PMP with strong video playback capabilities

and compactness is a factor then the D2 is the one for you. It's very feature rich and a very good performer as well and at a price of below Rs 10,000



Flash Based PMPs Above Rs 10,000

REIGNING CHAMPION

Apple iPod Touch 8 GB

Apple has really upped the ante with their iPod Touch series. The iPod Touch 8 GB is a beautiful piece of hardware. Apple's touch interface is beautiful, the finger swipe works flawlessly and is miles ahead of all the copy cats that spawned later; which makes you wonder why Touch clones even bother trying to duplicate Apples genius. The Touch is a full-fledged audio and video PMP and its 3.5-inch screen is crisp enough for a good portable movie experience. The audio component is excellent; the iPod Touch 8 GB is untouchable in terms of sound quality and while others like the Cowon D2 and Apples own Nano are nearly as good, there is a slight detailing in the highs which is absent from the others. The fact that its very compact and sleek just makes the Touch that much more appealing an option for nearly everyone who can spend more than Rs 10,000 on a PMP.

CHALLENGER(S)

Cowon Q2

AND THE WINNER IS

Apple iPod Touch 8 GB

Apple gets the glory here. Their Touch is a terrific performer that doesn't demand too much of in terms of price.

HDD-based PMPs

BEST BUY

Apple iPod Classic 5.5G 80 GB

Apple's iPod Classic 80 GB belongs to their 5.5 generation of HDD based PMPs. With a massive 80 gigabytes of storage you know you can cart around all your music with ease. It also plays video, courtesy the 2.5-inch screen that is bright and ultra clear. The fact that it's a great music player and provides a quality listening experience is just the icing on the cake.

CHALLENGER(S)

Apple iPod Classic 6G 120 GB, Cowon Q5W

Apples best gets a little better. Or rather bigger; the new iPod Classic sixth generation features a massive 120 GB of storage. The new iPod Classic 120 GB is largely the same device with a few minor changes in the firmware interface. The sound quality that Apple remains famous for is unchanged as are its video capabilities.

The Cowon Q5W is a device that needs little introduction. A huge five inch touchscreen, Windows Mobile 5.0, inbuilt Wi-Fi and Bluetooth, inbuilt loudspeaker and even a remote control unit makes the Q5W a premium PMP in any company. The screen is simply excellent, and the music playback is very good. For someone looking at a totally converged device with all the features the Cowon Q5W is worth looking at. The fact that it plays more video and audio formats than all the other players around itself speaks volumes for its achievements.

AND THE WINNER IS

Apple iPod Classic 120 GB

When it comes to sheer value nothing beats the performance coupled with the storage space of the iPod Classic 120 GB; especially not at a price of just Rs 13,000. Cowon's Q5W is a superb PMP; with far more capabilities than the iPod Classic; but at Rs 32,000 for the 80 GB model; its hard to justify paying so much for a PMP. Apple walks away with gold here; and deservedly so.



PRINTING SOLUTIONS

Printing solutions are a big part of computing and are so many branches of it. Firstly, there are the printers which are then further branched out to inkjet and laser printers. Then, there are the MFDs which can do pretty much everything – print, scan, copy, send faxes and so on.

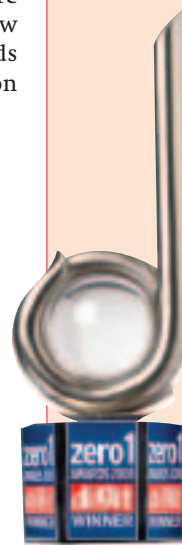
The two categories relevant to Indian users were laser printers and inkjet MFDs. Cost of ink and the running costs in general were also a big factor. The Zero 1 awards for printing solutions were to be given to the categories best suited for home and also SoHo users. Inkjet MFDs allow users to take photo quality prints while on a budget and at the same time be able to use its other functions such as copying and faxing. With prices so low already, it's possible to get MFDs with good quality and performance for affordable rates – somewhat like what inkjet printers used to be. Laser printers were the other big category where speed and low running costs were essential. We tested loads of such devices and this was our conclusion at the end of the year.

Inkjet MFDs

BEST PERFORMER

Canon MP 610

The Canon MP 610 was one of the most promising MFDs during the test this year. It was one of the costlier MFDs at the beginning of the year and is now just Rs 2,000 cheaper at the end of the year. The MP 610 has all the features including the inbuilt screen, memory card reader that allows you to print photos directly on the MFD. The most impressive part about the MP 610 was its speed. The scanning unit supported very high resolution scans but the quality wasn't the best as expected. The scanning quality suffered but the printing performance was astonishing. For the kind of performance that the Canon MP 610 exhibits, Digit awards it the Best Performer award for the Inkjet MFDs category. It is to this day the best performing MFD we've come across. Even if were to be used as a printer for the most, it still makes a very good purchase. It is our overall winner for Best Performer in the Printing Solutions category.



REIGNING CHAMPION

Canon MX 308

The Canon MP 610 was one of the fastest MFDs in the test. The Canon MX 308 on the other hand was one of the cheaper MFDs. It makes a very good choice for the *Best Buy* award. At Rs 6,595, it has a lot of the features of the MP 610. The performance wasn't so bad either in the tests. It led all the MFDs of its category in all of the tests. A newer version of the MX 308 – the MX 318 was also present for the test. The performance of the MX 318 matched that of the MX 308. The reason it didn't win was because MX 318 came with an ADF feature but was priced a lot more than the MX 308. The *Best Buy* award for the test was awarded to the Canon MX 308 for this very reason. The only complaint that we had was its weight. For an entry level MFD that would most likely be used by a home user, it was too bulky.



Laser Printers

REIGNING CHAMPION

HP P1505

The HP P1505 was a printer for the category of small work group category. The 1505 was clearly the fastest of all the printers in its category. Fast prints speeds didn't result in poor quality. The prints in the tests were crisp and accurate. The HP P1505 is then a winner for not just its brute force performance but also for consistent quality prints. If you think that the memory onboard the HP P1505 isn't sufficient, then more can be added. How many more printers in its price bracket can you do that with? For its speed and reliable quality prints, we award it the *Overall Best Performer* award for just laser printers.

The HP P1505 also wins the *Best Buy* award. It not only is one of the fastest printers in the category but also one of the cheapest. Feature-wise, it has a network port which is a big bonus for a printer and perfect for a small office scenario. The only complaint that one could have with the HP P1505 is the lack of double-sided printing. The P1505n was a slight different variant of the same HP P1505. The additional money you paid was for the 8 MB of cache on the device as well as the Ethernet con-

nectivity which allowed you to use the P1505n as a network device. For most home users, the network connectivity wouldn't be so useful. The price of the P1505 today is Rs 9,999 which might seem like quite a bit of money but for the kind of performance you get, it's worth it.



SPEAKERS

Speakers have been around for a very long time and development has stabilised of late. We've tested all that we could get our hands on and in the process, we've seen many brands and various kinds of models of all shapes and sizes. Customers want more of everything - more of quality, more power, more features and more style. To keep things organised and to make choosing simple for our readers, speakers were split into two groups - 2.1 and 5.1 speakers. In many of the categories, we've had some products which turn to be better than the winners of the tests. In the speaker test, nothing like this happened. The Audioengine A2s were a good set of stereo desktop speakers without any separate subwoofer unit so they did not fall into the categories we tested.

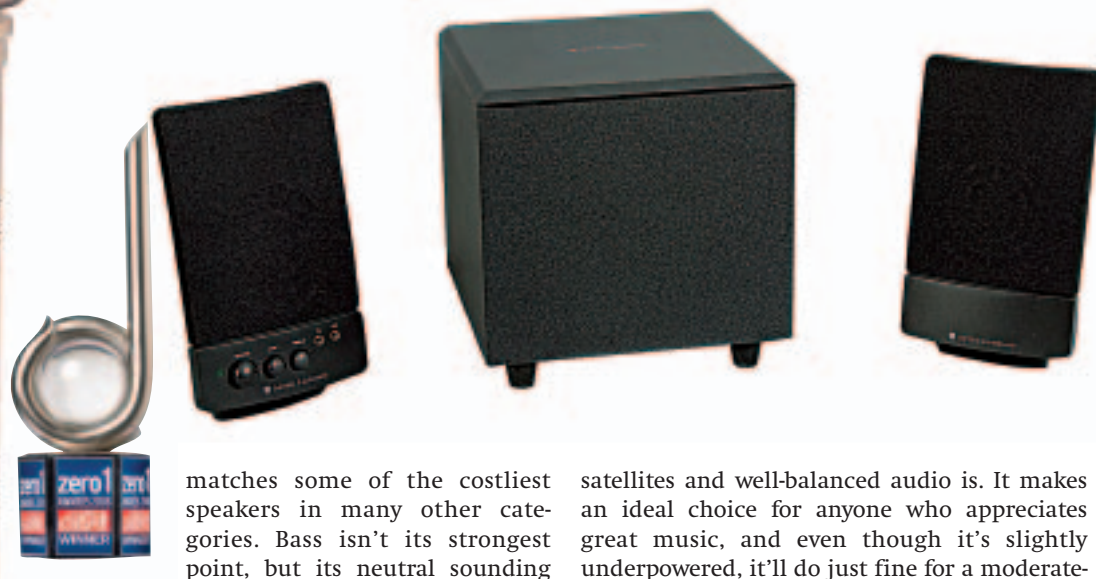
2.1 Speakers

The 2.1 speakers category has always been suited to true music enthusiasts. These are the speakers with two satellites and a woofer. Price hasn't been an issue so far as all of the speakers are priced sensibly.

BEST BUY

Altec Lansing BXR1121

The Altec Lansing BXR1121 is available for just Rs 1,199. At this price, what you get is great quality despite not being the most powerful speaker of the lot. The quality



matches some of the costliest speakers in many other categories. Bass isn't its strongest point, but its neutral sounding



BEST PERFORMER (2.1)

Altec Lansing MX5021

The Altec Lansing MX5021 was one of the speakers that impressed within moments of listening to. These speakers were a lot better than the others we tested. The woofer is most sturdy and produces the tightest bass and when you need it to, it can pump out some smoothened boomy bass as well. The satellites are excel-

lent on the high end frequencies. The speakers had a very crisp and accurate character to them - something that wasn't so clear in every other speaker set. This 90 W speaker set is among the most powerful ones of the lot. The MX5021 comes with great cables and a stylish and a very usable remote control. There's even a wireless remote control!



BEST PERFORMER (5.1)

Logitech Z-5500

The Logitech Z-5500 is some of the largest and the most powerful speakers of the ones we tested through the year. At 500 W, these were by-far the most powerful. They come as a set of five huge satellite speakers and one gigantic subwoofer. Everything about these speakers is about size. Cables are long. There's a huge console for changing the settings for the speakers. A huge heatsink at the rear of the subwoofer keeps it cool. All kinds of sound effects and standards are supported to give you the most accurate replication of sound as possible. If tightness of the bass is to be compared, then it's not as hard as the Altec Lansing MX5021 from the group of 2.1 speakers. That's about the only real complaint that we have.

We love the Z-5000's but at Rs 27,995 back in April, they're still overly expensive for everyone to buy but they are the best for surround sound.

ly sized room. The Altec Lansing BXR1121 demonstrates that quality doesn't have to be unaffordable.

BEST BUY

Altec Lansing VS3251

The Altec Lansing VS3251 is a great option for those who don't want to spend on the Logitech Z-5500. The VS3251 can be bought for just Rs 4,490. The VS3251 although meant for movies is very good for music playback as well. The sound is warm. The bass isn't really strong so it's not very ideal for movie buffs. The speakers went through all our tests perfectly fine. There was hardly any distortion when the volume was turned up high. The speakers are well built, and a large chunky remote comes with them.

5.1 Speakers

5.1 speakers on the other hand are best for movies and games. Surround sound is most important and has almost no meaning for the stereo music that we all listen to. All the tests we did were similar to 2.1 speakers but movie quality and experience were given more priority.



PROJECTORS

Projectors have become more multi-purpose and even more affordable. No longer are they considered to be the sole domain of the business sphere that needs a large display for presentations, training programmes and such. We're looking at sub-Rs 50,000 projectors making a splash in India and these are aimed at those wanting a home cinema system. Obviously if you want greater quality you pay for it and while a projector costing Rs 1 lakh will outperform a Rs. 50,000 projector the fact that you can buy a projector and screen for under Rs 50,000 today itself is good news. The high-end projectors have also become a lot more affordable meaning you will pay around Rs 1 lakh for a projector that was priced at around the Rs 1.5 lakh region.

Projectors Up To Rs 50,000

REIGNING CHAMPION

Epson EMP S5

This projector was exceptional under the price of Rs 50,000. In fact with current price revisions it manages to crack the sub-Rs 40,000 price barrier and delivers good performance to boot. We found this projector to produce good, clear text and decent colours; which makes it suitable for small business houses who want something compact that performs well. Its very sturdily built too; the only possible shortcoming we could think of is the very boxy shape, which will not appeal to most.

CHALLENGER(S)

None

AND THE WINNER IS

Epson EMP S5



Epson has a winner on its hands. Even though Sharp's XR-30X was slightly better a performer, one cannot deny the Rs 9,000 price difference between the two which pushes things strongly in favour of Epson. If you're looking for a projector that exemplifies bang for buck; this is it.



BEST PERFORMER

NEC NP 4000

The NP 4000 is the biggest projector we've ever had in our labs. With an XGA resolution that should be good enough for most users this projector boasts of a real contrast ratio of 2100:1 which is nothing short of superb. The brightness is a dazzling 5200 lumens. It performs flawlessly in DisplayMate, and is very suitable for any kind of text or presentation usage. Multimedia users and gamers will also like the good contrast ratio. Priced at an astronomical Rs. 3,65,000 the NP 4000 demolishes anything we've ever tested.



Rs 50,000 To Rs 1 Lakh

REIGNING CHAMPION

Sony VPL-EX 5

This projector impressed us with its superb build quality and pristine piano white finish. The body shape is equally attractive and this projector will draw looks from just about anyone. Its very good at producing text, and photos look amazing with Sony's slight tendency to produce rich, vibrant colours. This projector is good for watching movies and playing games; it handles both applications with equal ease.

CHALLENGER(S)

None

AND THE WINNER IS

Sony VPL-EX 5

Sony wins, hands down in this price category. We could not find a better projector for this price point. For its style, looks, features and performance you will not be disappointed for odd the Rs 60,000 that you spend on it; and it outperforms many projectors that cost 25 per cent more.

We mentioned repetition. For example, if we were to advise you on what to look for when buying hard drives we would probably talk about the elements that need to be analysed

Visual Buying Guides

before fixing on a particular model. We could take about interfaces, cost per GB, perpendicular recording, hybrid hard drives, SSDs, areal density, buffer size among others. But the information about these technologies would largely remain the same; with very few exceptions. While our buying guides have always been informative to say the least; it is for us, in a word, boring to write. And we thank you for putting up with us and our buying guides. If you loved them; thanks two times.

This year we decided to do something new; something we've never done before. Our buying guides are no more the text heavy, rhetoric articles of yesteryear. We've spruced them up; added lots of images, explained them *briefly* and the text has gone the [Ctrl] + [A] + [Del] way — well, somewhat. You will find everything represented pictorially. Because a picture does really speak a thousand words; and we've got so much to say.





LCD Monitors



LCD monitors are the *de facto* choice today for most system integrators and vendors and buying one with a new PC is more an automatic occurrence rather than conscious choice. Most people who want something sleek and for whom workspace is a premium, have no choice but to go LCD as CRT monitors are Jurassic these days.

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Connects

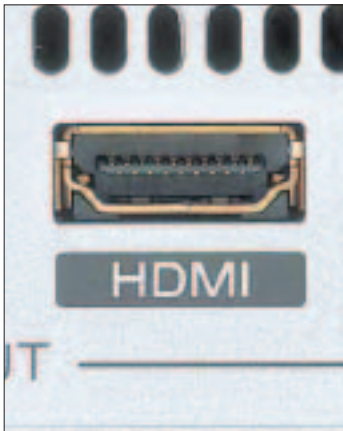
Most LCDs sport DVI connectivity and this is a must. Some older or entry level LCD monitors may only have D-Sub connectivity, avoid these. If a monitor has both D-Sub and DVI all the better. Some monitors may also have HDMI connectivity – a plus when connecting them to DVD/Blu-ray players, not to mention gaming consoles like the X-Box 360 and the PS 3. Likewise Component connectivity is also a plus since some gaming consoles support this standard.



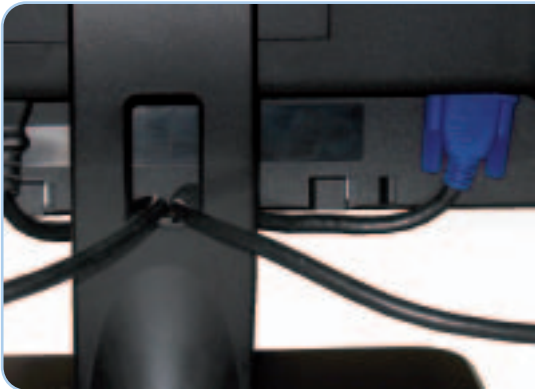
DVI and D-Subconnectors



Component connectors



An HDMI connector



Concealable Cables

Some LCDs have sleek covers with runners inbuilt into the stand which can handle the power and data cables thereby adding to the aesthetic appeal as visible cables are plain ugly. Check if the monitor you're considering has this; it is a useful step in ensuring your desktop has a professional, clutter-free look.

Wall Mounting

Most LCD monitors come with wall mounting capabilities. This is something to look for especially if you're going for a largescreen monitor which can double as a display for a home entertainment system. Although a wall mounting kit is usually sold separately your monitor should have the necessary mounting holes as shown.



Swivel Stand

This is important to ensure the accurate viewing angle. Most monitors have vertical adjustments for screen orientation but very few have a stand that can adjust height or swivel horizontally.



Stand Stability

A monitor is usually a long term purchase so choosing something that has good aesthetics as well as ergonomics is essential. Ideally choose a monitor with a sleek but stable stand. We have seen some monitors with stands that are so unstable so as to allow movement even with a minimal disturbance like a table fan. The monitor should stand firm without any sort of shake. This is essential for everyday use; the stand itself should have no play, but affix firmly to the monitor body.

COLOR YOUR SUCCESS STORY.

Myst 732MW (17)
• Unique Bezelless Design
• Fast Response Time 8ms

Touch-e 543NWX (19)
• Dynamic Contrast Ratio: 8000:1
• Feather-touch Buttons

Hayden 923MW (19)
• 16.7 Million Color Support
• Contrast Ratio: 1000:1 (typical)

T Monitor T220 (22)
• Crystal Design
• Dynamic Contrast Ratio: 20000:1

3 Years Warranty
1 Year On-Site Service

SAMSUNG
LCD MONITORS

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Screen Sizes

The most obvious thing to look at is the screen size. The larger the screen the better your experience; obviously you pay more for a larger screen. In general a resolution of 1400 x 900 pixels should be enough for most users and this translates to a screen size of 19-inches. Movie buffs should look at a screen size of 22-inches; this translates to a resolution of 1680 x 1050 pixels.



17-inch LCD
Resolution : 1280x1024



19-inch Widescreen LCD
Resolution : 1440x900



20-inch Widescreen LCD
Resolution : 1680x1050

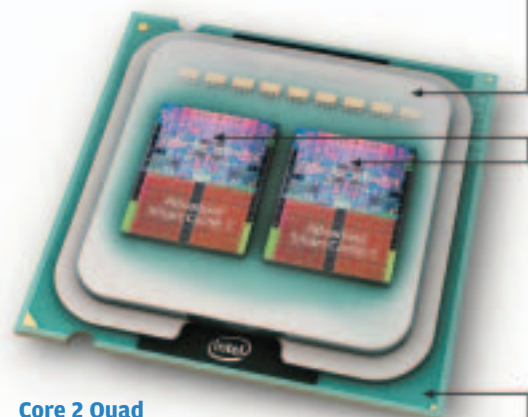


22-inch Widescreen LCD
Resolution : 1680x1050



CPUs

Number of Cores



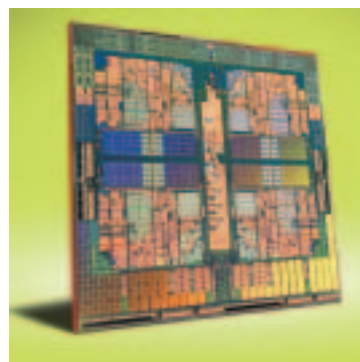
Integrated Heat Spreader (IHS): The integrated metal heat spreader spreads heat from the silicon chips therefore aiding dissipation and protects the die from damage

Silicon chips (dies): The two dies inside the Intel Core 2 quad-core CPU are 143mm squared in size and utilise a whopping 291 million transistors each.

Substrate: The dies are mounted directly to the substrate which facilitates the contact to the motherboard and chipset of the PC via 775 contacts and electrical connections.

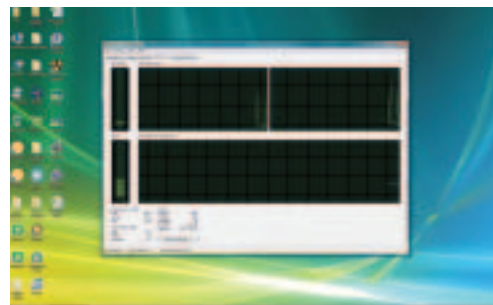
Core 2 Quad

The most powerful desktop processors around; with the exception of Nehalem of course



AMD Phenom

Native quad cores, the Phenom processors are amazing value for money

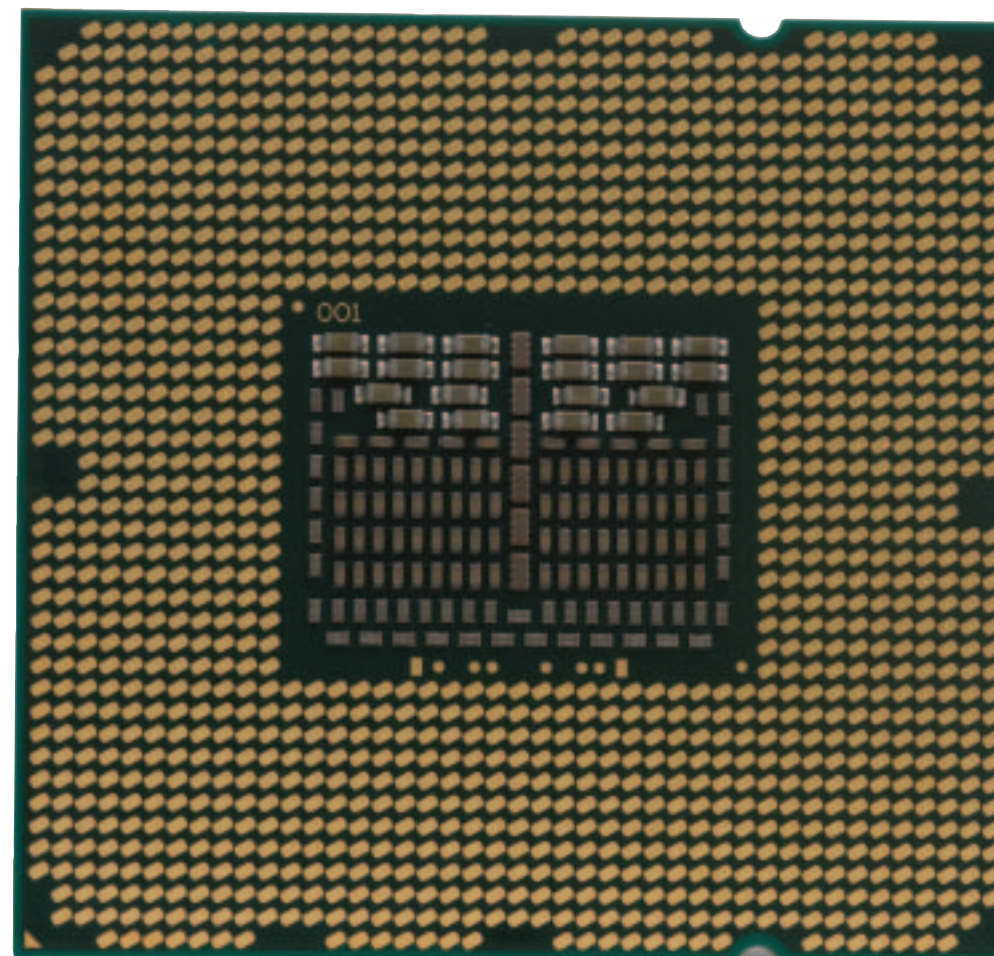
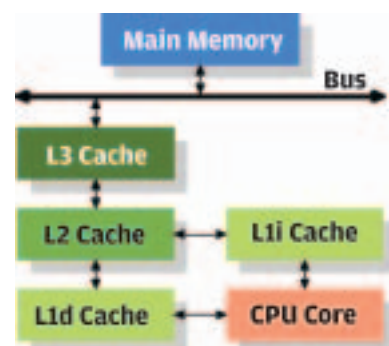


Windows Task Manager

The windows task manager clearly shows how many processing cores your CPU has. There will be four individual panes for a quad core, eight for an octo-core and so on...

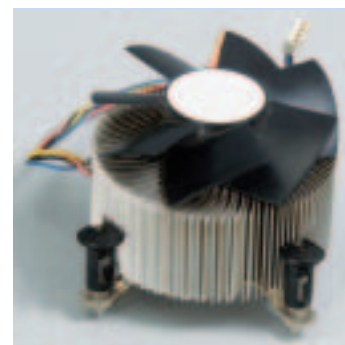
Cache

A processors cache is an important part of its performance. CPU Cache is a small amount of storage space that is embedded on the CPU itself to speed up CPU operations by saving it the time to look for the information in main memory. CPUs have L1 and L2 caches. Some may have an L3 cache as well.



Cooling Solutions

Add-on cooling is a must for some processors that run hot or for overclockers who run their CPUs at higher clock speeds and feed them with higher voltages



Intel's stock cooling solution. Its effective; but the retention is horrible



Basic heat-pipe solutions are essential for those looking to run their systems for hours on end



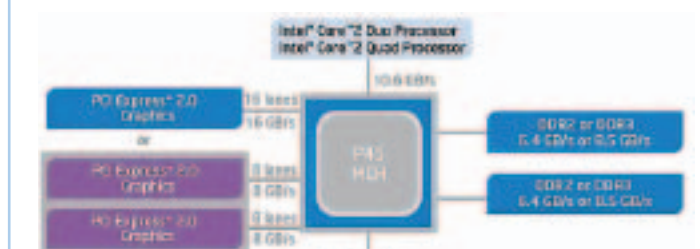
Heatinks like this Thermalright Ultra 120 Extreme are for enthusiasts who are into serious overclocking

Processors are, by far, the most hyped (sometimes admittedly over-hyped) components in any desktop PC or notebook. Clock speeds are on the rise, and coupled with shrinking fabrication processes desktop and laptop computing has become way more powerful than ever before.

Today Intel builds CPUs on a 45nm process while AMD is still sticking to their older, tested 65nm process. AMD plans to move to 45nm soon and we're told this move will begin with their upcoming processors codenamed Deneb. Intel's latest dual cores codenamed Wolfdale and their quad cores which are codenamed Yorkfield will eventually be phased out in lieu of Nehalem, which is an entirely new architecture for them. However, this does not mean that the older Core 2 Duo and Core 2 Quad processors are useless; price reductions will make them even better value for money and everyone who hasn't jumped on the bandwagon for a new processor may well get an irresistible deal.

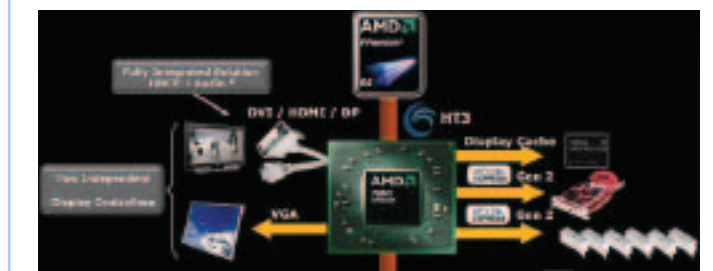
Integrated Memory Controller

The memory controller is a logic chip on a motherboard that controls the flow of data to and from the main memory or RAM. Traditionally the memory controller communicates with both the CPU and the RAM via the Front Side Bus or FSB. This FSB is an expressway with 2-way lanes for data travel. However this expressway is used by the CPU to communicate with other components too; and is prone to data congestion; which leads to bottlenecking as the CPU waits for data to reach it. Moving the memory controller to the CPU die itself is the solution as it eliminates the time taken for the FSB to respond to CPU requests.



Intel

Intel has stuck with the concept of an FSB; which is a high speed interconnect between CPU, Northbridge, memory and GPU



AMD

AMD has innovated with developing the concept of a high speed point to point link called Hyper Transport

Cell Phones



Cellphones are one of the few product categories where dearth of choice is something you will never have to worry about. Manufacturers release handsets in droves. Typically, these spurts of products coincide mostly with festivals, although there are new models available nearly all through the year.

Earlier there were entry-level cellphones for those on shoestring budgets. Then, there were the high-end devices that had all the features that you paid pretty penny for. These two categories were rather segregated. Today, manufacturers realise that variation in choices exist, even in the same price category. For example, one consumer willing to spend Rs 10,000 on a cellphone may be looking for a really good camera, while another may want a lot of storage space. Yet another person may want a phone that doubles as a capable PMP. It's good to know exactly what you want when shopping for a cellphone, lest the sheer volume of choices available overwhelm you.

If you are one of those people looking for an ultra high-end smartphone then a simple list of features just isn't going to cut it. We've always agreed that for such cellphones one needs to consider the usability, intuitiveness and feel of the device in addition to the feature list and performance. Looks are also important for most people and even more so for someone spending a lot; he simply expects more.

Form Factors

Admittedly, some candy-bar phones look good; but the sheer commonness of this shape renders it less desirable. Amongst the ladies clamshells are hot. These cellphones open and fold just like their namesake and owing to the sleekness of the phone they're naturally considered as a female accessory.

This isn't necessary however, but a general consensus. The other hot form factor is the slider. Sliders are slick; and nothing grabs attention more than a resounding *click* as someone opens his slider phone to receive a call or send a message.

Initially we had reservations about extra moving parts on a cellphone since this usually results in mechanical failure over extended use. However, we've seen improvements made across the board by all major brands to prevent this; mechanically stressed parts are built better or reinforced.



Slider

Although mechanical parts are prone to greater wear sliders are undeniably hot. They have immeasurable flaunt value; just try sliding one open in public



Clamshell

If sliders are hot; clamshells are chic and fashionably cool



Candy bar

By far the most common form factor and for good reason. Can be attractive or dull looking; depends on the phone

Camera

This is one (admittedly over hyped) feature that probably sells more cellphones than anything else. Convergence is the name of the game here and everybody wants a camera to tinker around with on their cellphones. Obviously nearly every multimedia cellphone has a camera and while the best of these cameras will not be as good as a digital camera yet the convenience of having a cellphone that can be used to capture the odd photo cannot be dismissed. Usually cellphone cameras range from the mundane one megapixel and 1.3 megapixel peashooters to the high-end 5.0 and 8.0 megapixel cameras. Naturally the settings are what is most important since most cellphone cameras do not offer best results on automatic settings. You will need to check the cameras settings and menus before deciding on a model to buy.



Remember to take a look at the flash, as this is important especially when shooting in dimly lit areas. A dual LED flash is powerful, but not as powerful as a Xenon flash, which really lights up even dim shots; in fact we'd go as far as saying a cellphone camera without a flash unit is pretty much useless except for daylight, outdoor shooting.

Cell Phones

Buttons And Keypad Layout

Although important for almost anyone; the layout of the keypad is really important for SMS junkies and anyone who needs a PDA phone. Although the basic number keypad in conjunction with T9 works wonders for typing out text messages if you're looking at sending emails (which will typically be much longer) than you may need to look for a cellphone with a QWERTY keypad. Regardless of what you choose, keypad layout is tantamount, as a badly laid out QWERTY keypad is much worse than a decently laid out number pad.



Tiny Keys

Some keypads may look cool and funky but may be a nightmare to use. Sometimes tiny keys look neat but they may be an ergonomic nightmare. The best keypads have adequate (not extra) spacing between the pressing the keypad results in a definite feeling of pressing a key; this is called positive feedback



Large keys and bevilling

Some keys are rather close to each other as shown above but they still allow for ergonomic working. The raised portion in the middle is called bevilling and allows your finger to *feel* each key; which is an integral part of properly using the keys



QWERTY keypad

These keypads are suitable for typing out longer SMS' and mails. But the keys should be properly spaced and large enough to operate with both thumbs. Besides this bevilling is also important



Pseudo QWERTY keypad

A new and space saving concept, where one physical key represents two alphabets. Such keys work similar to a rocker switch where pressing on either side results in a different key press. Key size and bevilling are of utmost importance here

Memory

Being highly personal devices we store a lot of data on cellphones. Be it the mundane SMS' or MP3s, videos and photos, storage space is a much desired element of any cellphone. Some of the higher-end cellphones are coming with a lot of memory onboard; to the tune of eight and even 16 gigabytes. Most of the phones do not come with this kind of memory but have expansion in the form of SD, microSD and miniSD.

When buying a multimedia phone please ensure your phone has at least 512 MB of available memory, whether integrated or in the form of memory card expansion. This ensures you can store your collection of photos, music and so on. There is nothing more annoying than running out of space.



SD, miniSD and microSD

The most common flash standards, SD is the oldest and largest form factor. MiniSD and microSD have been spawned and recent advances mean you can get a 16 GB microSD card; which means 16 GB on the size of your thumbnail



Flash and camera cover

Useful additions; a flash makes indoor shooting a little better. Xenon flashes are rare; but worth the premium over even dual LED flashes which are practically useless. A camera cover protects the lens from dust and grime



Laptops

Laptops have moved from being just drool-worthy gadgets restricted to the hands of a few, to devices of mass acceptance. This popularity is due to the notebook being a device of mass appeal; everybody wants a notebook, whether they really need one or not. Its one of those devices that has drool value and for many people being seen with a notebook is read as a status symbol. Falling prices are the other reason behind the sudden surge in market acceptance. Notebooks used to cost upward of Rs 50,000; you paid for the exclusiveness of owning a notebook. Taxes relating to their import have fallen and coupled with the reducing cost of components as market acceptance worldwide increases, a notebook is now much more affordable than you think.

Netbooks, an exciting and special (read cheap) category of notebooks are also available. These are very new entrants in the market and are based primarily on Intel Atom processors which consume hardly any power (2.5 to 4 watts). These netbooks are therefore available in very small sizes — 8.9 inches to 10.1 inches. Netbooks are mighty cheap and although you cannot get the same productivity out of them that a more powerful notebook PC would provide they are a serious option for those on a really small budget. Prices of netbooks range from Rs 20,000 to Rs 26,000.



Ergonomics

Sure a notebook is the sum of all its components but it's much more than that as well. For us, a notebook is as personal as a PMP or cellphone and special attention needs to be paid to the usability and ergonomics of the notebook rather than just its components. In fact the more you use a notebook the more discerning you become towards any ergonomic shortcomings. For example, the inclusion of dedicated switches/buttons to switch on/off WLAN and Bluetooth and dedicated multimedia keys is a real plus point.

A dedicated switch to turn off the track-pad is another plus; since while typing you don't really need to use it and accidental brushes with your wrist can have undesired results. The layout of the keys on the keyboard is also worth mention; obviously this is highly subjective to what your personal tastes are and what you are used to.



Segregated keypads

This design concept is used mainly by Sony and Apple. Such keypads have smaller keys and the bevilling is usually minimal. This is because the adjacent keys have a small gap between each other so false key presses are minimised. Some people find such keypads much easier to work with; others do not. But you have to try which type suits you best and while you will get used to even a bad keypad; you will immediately notice the difference between one that suits your fingers and one that doesn't



Bevilled keypads

Such keypads are used by all other major vendors including Dell, HP, Lenovo, Fujitsu and Toshiba among others. The keys are bevilled and the keys are very close to each other. The bevilling and small depression atop the each key is what allows ou to avoid false key presses. Opinions on comfort and usability differ

Laptops



Multimedia keys

Having buttons for playback, next and previous tracks, stop, pause and volume mute is just so convenient. Even non-multimedia notebooks should have them



Switches and buttons

Buttons are switches should be present for the most common functions like launching your browser, opening the media player or even switching WLAN on and off. Convenience is the name of the game here



Dedicated keys

Some notebooks will have dedicated for some fixed applications and these are usually configurable using software

Screen size



When you choose a notebook one of the first considerations is what screen size do you need. A bigger screen may seem like the obvious choice, but notebooks are supposed to be portable right? Imagine the horror of lugging around a 17-inch laptop. However, there may be those who do not need to carry their notebook with them everywhere and for such people a large notebook is definitely better. Such large-screen, bulky notebooks are called desktop replacements; mainly because they sit still on your desktop. Such notebooks are usually of a screen size of 16-inches and above. 17-inch notebooks are the most common.

A screen size of 15.4-inches is considered a de facto size for notebooks although some people regard this size to be a little too large for enabling true portability. 14.1-inch notebooks are soon becoming the new de facto size category for what strikes a good balance between flexibility in performance and size and weight.

The compact segment (aside from netbooks) is generally the hottest category because such notebooks bring extreme portability along with good performance. Notebooks with screen sizes of 11.1-inches, 12.1-inches and 13.3-inches are the most common ones. Generally the smaller the screen gets, the costlier the notebook tends to become since shrinking of size means more attention to other factors such as heat dissipation and actual fitment of components.

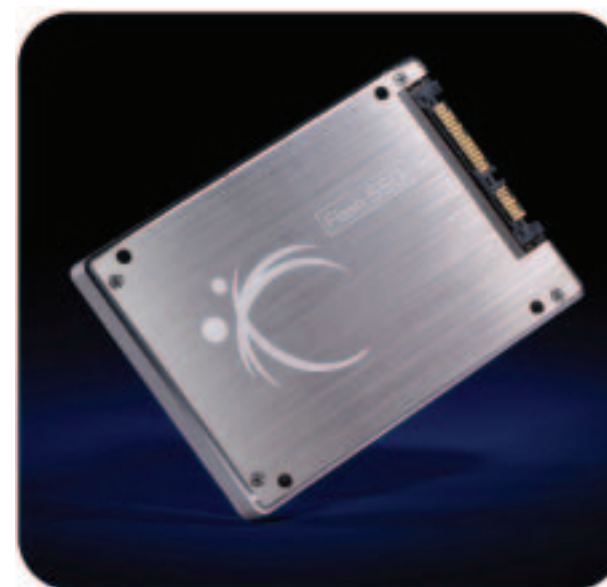
Netbooks are even more compact; although the tradeoff is on component performance and of course a smaller keypad; which may not suit everybody.



Extending battery life

A few notebooks have a dedicated switch for switching between an integrated video solution and the discrete graphics solution. Since an onboard solution will consume one fifth the power this is handy when operating on battery juice.

Laptops



Storage

Notebooks do not use the same hard drives that desktop PCs use. A smaller form factor i.e. 2.5-inches is what is prevalent. Notebook hard drives also come with different spindle speeds; faster speeds mean better performance at the cost of extra heat generation and more importantly possibly lower battery life. The three common speeds are 4200 rpm, 5400 rpm and 7200 rpm. Stay away from 4200 rpm drives; these are a little too slow for most users. 5400 rpm is what you should look at; remember that 7200 rpm drives are better albeit costlier and some very compact notebooks cannot utilise these hard drives for fear of overheating.

Solid State Drives (SSD) is a relatively new technology that has pervaded the notebook space first. The biggest advantage with SSD is the lack of any moving parts which allows SSDs to enjoy very low power consumption and yet have higher performance than any hard disk drive. In fact the read and write speeds of SSDs are three times higher than the fastest HDDs around – a very solid performance increment. The only downside is SSD is a new technology and is very costly. Data density is also not as high as HDDs. The highest capacity SSDs are in the region of 250 GB; these cost fifty times more than a hard drive of the same capacity. However, smaller capacities like 32 GB and 64 GB are a little more affordable and if you want extreme performance and better battery life then you may opt for an SSD storage based notebook. Many manufacturers are offering such drives as optional upgrades on various notebooks.

When it comes to storage there is no ballpoint figure although 160 GB is a good place to start. For real data hogs you may need to invest in a 320 GB hard drive. Opt for a SATA drive if your notebook supports it; Serial ATA is a faster interface. Most notebooks today feature SATA connectivity.

USB Ports

USB ports are important for all notebook users. Although you may initially feel that a couple of USB ports are more than enough a couple of days of use may change your opinion forever. There may be a case where a user may need to simultaneously connect four USB devices such as a USB mouse, printer, thumb drive and their PDA; this means that four USB ports would be required. We figure most regular users will need at least two ports; so given future expansion three ports would be just right.

Almost all notebooks come with memory card readers inbuilt; this is a real boon for anyone looking to hook up their memory cards directly to the notebook as it frees up one USB port. Users wanting to back up a lot of data fast may want to look at a faster alternative to USB; many notebooks come with FireWire ports and although rare, notebooks with E-SATA connects are also available.



Video Connectivity

A notebook will always have some form of video connectivity; depending on your usage this may not be a factor or it may influence the buying decision totally. A D-Sub port is usually de facto for connection to a larger monitor. With large screen LCDs monitors becoming common we figure DVI is one connect your notebook ought to have; this is because many of the newer LCD monitors do not have D-Sub connects at all. Either of these connects can also be used with a projector; useful for presentations. HDMI connectivity is also a huge plus since this allows direct connection with large LCD and plasma panels and is important if you wish your notebook to double as an HTPC.





Printing solutions

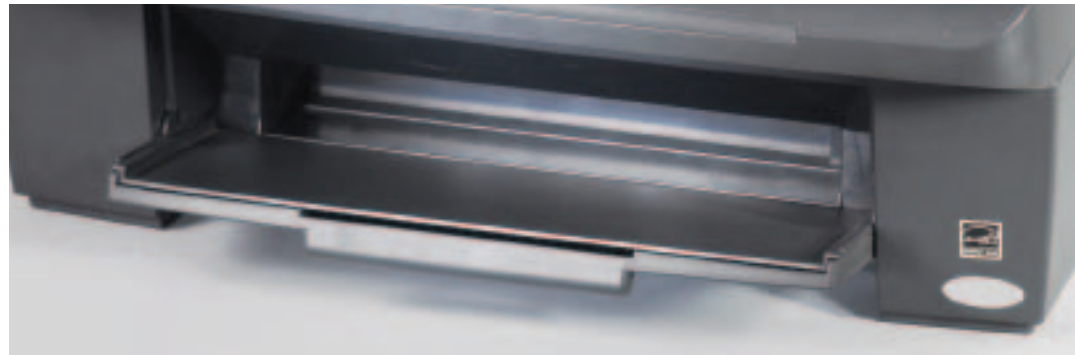
Everyone needs to print documents. However, the purpose and area of application keeps varying. So, it only makes sense that printers should be purchased on the basis of what kind of printing you need the most. In the market, printers are mainly available as inkjet and laser. If you're a photographer or someone with CG related work, then a photo printer is what you need. If you're always travelling and need a printer to use with a laptop, then you're looking for a portable printer. For large offices with even larger demand for quick cheap prints, fast network laser printers are best suited for the job. Similar is the case with MFDs. A colour laser MFD is more economical than an inkjet MFD. The initial cost might be high, but when the running cost is considered, it proves to be practical. Buying a single MFD is often cheaper than buying a separate printer and scanner. However, either performance or quality is compromised.

Powered by:



Paper trays

Look for printers or MFDs that come with large paper holding trays. This way, you won't have to keep refilling the printer or MFD with papers. Remember that both – the input and output tray should have large capacities if the device is to be used in large offices and especially with network printers. These are places where lots of users give multiple print orders and large piles of prints end up in the trays.



Cartridge cost and availability

If you opt for an inkjet printer, then cost has to be one of the biggest concerns. Look out for efficiency numbers as well as the cost of cartridge that are used for that printer or MFD. A printer with separate cartridges is a good option. You can simply replace a single cartridge rather than replacing the entire block. Also, look for printers and schemes where cartridges can be delivered to your office or home. For large offices, look for services that send servicemen to install the cartridges for you.



Colour tank

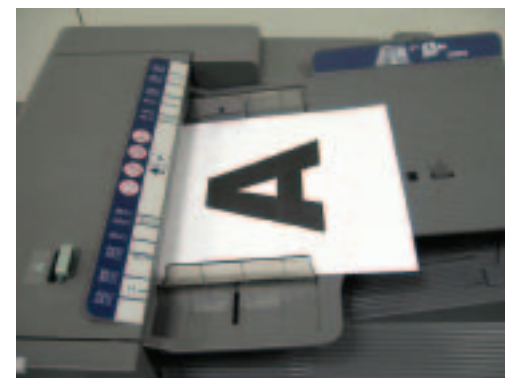


Cartridges



Duplex Printing

Look for printers that allow you to print two sides of a page. This helps significantly reduce printing cost. Evidently, paper forms part of running costs. Therefore, look for printers with dual side printing, and an Automatic Document Feeder (ADF) feature.



Fax functionality

MFDs are designed to handle many roles other than just printing and scanning. Look for MFDs that come with a inbuilt modem. The MFD is then capable of doing more than copying. It can be used to send and receive faxes. This feature is of utmost important to offices of all sizes.

Support for external storage

Photos need not be printed through a computer or via a network. MFDs and some printer come with inbuilt memory card readers. This allows users to connect their USB flash drives and memory cards from their cameras and directly print photographs and documents out of it. Make sure the printer supports all the different kinds of memory cards. It's a must-have feature when you go out to buy a photo printer.



Photo printing

Photo printing is all about quality. Firstly, the cost of the ink should be kept in mind as the best quality of photo prints comes from inkjet MFDs and printers. Look for printers that have a special tray for standard photograph size. This allows you to keep standard photo paper in the tray rather than adjusting the existing

printelligence makes your business recession proof.

ML-2245 | Cost per page: Re.0.83 * | Speed : 22 ppm | MRP : Rs.6999/-

Easy Paper Jam Removal
 Separate Drum & Toner Cartridge
 Toner Save Mode
 Smallest Printings
 One Year Drivethru Warranty
 Smart Panel
 50% off toner

SAMSUNG Laser printers

* Conditions apply.

printelligence makes your business recession proof.

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Screen

Some printers and MFDs come with built-in screens. The screen is useful for previewing photos or setting customised options for the printing. The size of the screen itself is important and so are the user interface and the features. A touchscreen is rare but is very unique and helps not only in previewing images but also operating the device.

Design

The design and shape is the identity of the printer. Anything for a home needs to be small, look good and blend in with the rest of room. An ugly and oversized network printer is not what one needs sitting on a desk at home.



Network support

With networks being used for everything, even MFDs and printers are now part of this grid. Look for devices that have network support. It's important that the printer comes with an easy-to-use yet feature filled Web based interface. This can be used for monitoring and controlling the device. Wireless support for printers in SoHo scenarios can also come handy while sending print orders wireless through a phone or laptop.

Digital Cameras

Cameras are rapidly evolving, and so it's necessary to be up-to-date with the all the features and happenings, and ensure you don't land up with an overpriced camera. Purchasing one has a lot to do with deciding on what kind of camera you need. In this guide, we go through some of the most important points to keep in mind while purchasing a camera.



Lens Parameters

In a Point and shoot (P&S) camera for everyday use, a 3x or 4x optical zoom lens is going to be sufficient for most users. Anything more than that and the camera sizes are bound to increase. There are P&S cameras with 18x and 20x optical zoom as well. These are bulky, but give incredible zoom levels. The sweet spot are the cameras with 6x to 10x optical zoom, which are slightly heavier and bulkier than the standard P&S cameras. The ability to zoom while shooting video is also very important, so be sure that the zoom lens can operate while the video shoots. Some camera manufacturers have lens attachments that can extend the existing lens capability. The cost and availability of these add-ons is worth considering as well.



SLR Lens Comparison

Crop - lens

Zoom lens

Kind Of Cameras

The type of camera you buy solely depends on your needs. If you are a person who carries a camera all the time, then an ultra-compact is what you need. They are typically more stylish, but also expensive. If you like a lot of wildlife shooting or photography in the open of distant objects, then ultrazooms or pseudo-SLRs is what you need. They come with huge optical zooms and are great for shooting distant objects. They also have loads of manual features, and are a good stop before you graduate to a D-SLR. If you want quality and complete control over the camera, then a D-SLR should be considered.

A budget of around Rs 10,000 is sufficient for a decent point-and-shoot camera. If you want something a little more feature-rich, then the budget should be extended up to Rs 15,000. Ultracompact cameras can be priced from Rs 13,000 onwards. Pseudo-SLRs or Ultrazooms start from as low as Rs 13,000. They can go up to as much as Rs 25,000 or so. Full-fledged D-SLR's prices begin from around Rs 29,000.



Ultra-zoom camera



Point-and-shoot camera



Digital SLR

Sensor Size

While image resolutions have kept on increasing, the sensor size has stayed the same. Larger resolutions on the existing sensor sizes lead to gradual degrading of image quality. Larger sensors are expensive. So for the best quality, look for larger sensors in a camera. D-SLRs are known to have larger sensor sizes. In comparison, P&S are much smaller. In that relation, an 8 MP will most likely have inferior quality than a 5 MP D-SLR with a larger sensor.

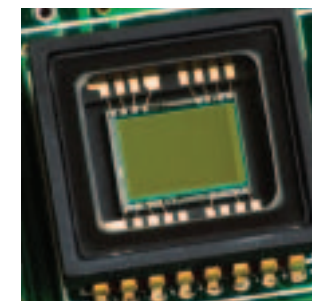
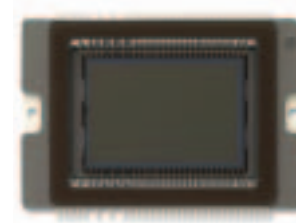


Image quality is linked to the sensor size

Image Stabilisation

Image stabilisation is a must in every camera today, and not something to compromise on. It helps reduce the effects of jerks as much as possible, so you don't get blurry images in low light situations. The feature is also useful while shooting videos.



Megapixel And Resolution

Megapixel is not everything, but is particularly useful if you want to blow up photos or print on large sheets. Any camera more than 5 MP is good enough for most uses — even for large prints. Don't purchase a camera only on the basis of the Megapixel rating for the camera.

Screen

Screen size is important not just for viewing images, but also while zooming and focusing on the camera. The quality of the screen is important too. A 3-inch screen is standard, but anything between 2.5 to 3 inches will suffice. Colour depth of the screen is vital, so look for cameras that have LCD screens supporting 2,30,000 colours. A foldable screen will add bulk and weight to the camera, but they help protect the screen from stains and scratches when not in use. Make sure the hinge mechanism on such cameras is sturdy.



Batteries

Battery choice is personal. AA batteries are cheaper, and are easily available in local shops. So when you drain them, you can go out and buy a new set or at least carry an extra set or two with you. They are heavier than the widely used Lithium-ion batteries. Li-ion are the complete opposite – compact, light, but expensive. If you buy a Li-ion battery camera, try and find the cost of extra battery packs. The capacity of the batteries is also important.



AA batteries



Lithium Ion batteries

Aperture And Shutter Speed Priority Settings

Aperture priority settings allow you to set a fixed aperture size and all the other parameters change accordingly. Similarly, the shutter speed priority allows you to choose a shutter speed. This way, you can be sure that your images are not blurred in low light, or in long exposure shot. In short, these are advanced features that come very handy when you want to do more than just use the Auto mode to shoot photos.

Interface And Button Layout

The user interface should be easy to use. All the features and menus should be accessible with the least number of key-presses. The buttons should be also placed in such a manner that all the important functions can be accessed using a single hand. Look for cameras that have presets and scenery modes so you can simply set the camera to one of these modes and get to the shooting quickly.



Build Quality

While buying a camera, look for a well-built body. Make sure there are no loose battery or memory card doors that can possibly snap over time with rough use. Make sure the batteries don't shake and wobble around in the camera. If the camera has a lens cap, make sure it secures itself firmly to the camera. The quality of buttons on the camera is also important. The trigger and the zoom buttons should be sturdy, but not overly hard to press on. The half-press feel of the trigger for focusing should be distinguishable from the clicking. Any dials and mode selection knobs shouldn't be rigid.

Freebies Supplied

Prices of cameras might drop but don't stop looking for more. Manufacturers have begun bundling extras to go with the camera to try and make offers more attractive. Look for schemes that bundle a free camera pouch, a free charger with batteries and even memory cards. Some of the manufacturers might even offer free online web space for hosting images on their partner sites.



Camera pouch



Battery charger

Tripod Support

Low light shooting requires a stable base or the photos turn out blurred. Tripods come handy in such situations but cheap cameras might not always have a tripod mount. Check the bottom of the camera body to make sure the camera you buy has support for one.



Kind Of Memory Cards

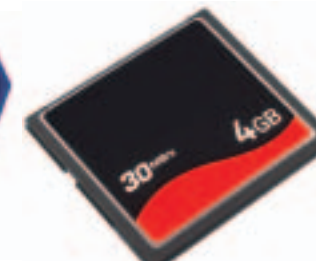
Cameras don't accept all kinds of memory cards. So consider prices of memory cards before you buy them. Certain kinds of memory such as SD are cheap, while proprietary ones are expensive.



Memory Stick



SD Card



Compact Flash

Say No To Digital Zoom!

Don't be impressed by large digital zoom numbers. Digital Zoom works by interpolation and there is massive loss to image quality. It's used mostly as a marketing gimmick. Practically, it's the same as zooming into an image in an image editor.

Flash

Cameras need to have powerful flashes. The flash found on P&S cameras are typically weak. Look for cameras that come with a synchronised or fill flash feature that can mellow down the intensity of the flash during your photo shoot. If possible, look for cameras that come with a mount for an external flash.



Manual Focus

All cameras today can automatically focus on objects with a simple press of a button. For the more creative sorts, one needs to experiment with different focus points. This is where Manual Focus is especially useful. You will not find this feature in lower-end cameras, is definitely something to opt for.



Graphics Cards

Connectors



DVI and D-Sub 15pin

D-Sub (top) was the traditional connect for PC monitors and is an analog connect. DVI (bottom) is the new digital connect for monitors and is mainly found on LCD monitors

HDMI

HDMI (High-Definition Multimedia Interface) is a new interface mainly meant for home entertainment systems. It is a digital interface that is identical to DVI in every way except that it carries both audio and video signals. HDMI is seeing use in large screen plasma and LCD displays and some graphics cards and most integrated graphics solutions these days sport them. Although this standard hasn't seen large scale adoption due to low acceptance and the issues that plague DRM (Digital Rights Management) HDMI should become the standard for high-definition interconnectivity in the future.



Display-Port

DisplayPort is another newer digital interface standard that was approved in May 2006. Its main advantages are its license and royalty free. DisplayPort has hardly pervaded graphics cards today and we see very few cards that support this standard.



S-Video

S-Video is the other video connect that is used. This is an older standard and is analog in nature. It carries two separate video signals luma (luminance) and chroma (colour). It does not carry audio.



The graphics industry does a refresh every six months or so; which is annoying because if you want to play the latest games at highest resolutions and maximum detail levels you should ideally upgrade your graphics card every year. It seems the industry is slowing down, much to the joy of most people who invest upward of Rs 15,000 on a graphics card. However, be prepared for the unexpected flip — where hardware technology has a sudden bump in performance and your ten month old card is little more than a hunk of junk.

We divide our readers and consumers of discrete graphics technology into three main chunks, on the basis of how much they will / can spend on obtaining a graphics card. In India 95 per cent of the PC users use integrated graphics. Out of the five per cent of PC users who purchase graphics cards we estimate 95 per cent of them are willing to spend no more than Rs 5,000; which reinforces the fact that India is still a very price conscious market. The good news is that the number of people spending / willing to spend more than Rs 10,000 on a graphics card has risen sharply over the past two years. As 3D games become a pastime for more people, this number should increase further.

If you're a person making his first foray into the immersive world of discrete graphics you will get intimidated by the sheer number choices around. Terms like stream processors, video memory, GPU clocks and GDDR3 will float around you till you wish someone would build a dictionary filled with explanations of such terms.

Video Memory

Video memory also known as VRAM is one of the most essential performance affecting components inside your graphics card. Video memory is used to hold information necessary for a graphics card to drive a monitor / display device. Although non-gamers need no more than 128 MB of video RAM. For gaming you may need as much as 1 GB of video memory; especially if you are into gaming at high resolutions and at maximum settings. Low-end cards do not do much with more video memory.

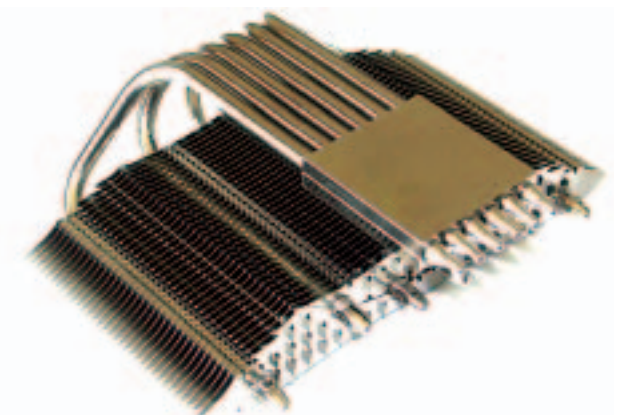


Cooling Solution

Your graphics card generates a lot of heat although the amount of heat generated depends on the GPU core and its power consumption. A high-end GPU would obviously consume more power and therefore generate more heat. There are also third party cooling solutions available that you can slap on to your graphics card if the stock cooler isn't doing its job as well. Heat pipe based solutions generally work well. Brands like Thermalright and CoolerMaster are available in India



GPU cooling



A cooler developed by Artic and meant for older ATI cards

Stream Processors

Previously known as shader units and referred to as SP(s), these refer singularly to a single processing core sitting atop a GPU. A single SP is useless on its own. Collectively these work in cohesion and are what power the display on your PC, think of them as multiple computational units working together on a variety of image and video calculations. So the more SPs (in general) the more powerful a GPU is. Although both players (ATI and NVIDIA) have different approaches to stream processing, the underlying principle remains the same; that is parallelism.



Motherboards

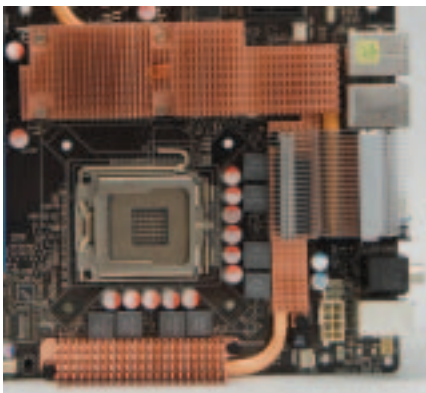
When choosing a motherboard, the most important thing to consider is its price. It's all too easy to fall prey to a bloated list of features you don't need. Boards these days are moving away from the mundane platforms they used to be and some high-end boards have extra features like fancy lighting, heat-pipe cooling solutions among other nifty add-ons. Some of these features may or may not appeal, while some may be useful to you and some may be a total waste of cash.

Video Connectivity



If your motherboard has an onboard graphics solution, it will definitely have some sort of video connectivity. D-Sub or DVI are the usual connects that most motherboards have and most boards will usually have either of the two connects. HDMI is a new standard that allows digital audio and video on a single connect. Some of the newer boards have an HDMI port, which is a plus for anyone in general and HTPC users in particular.

Cooling

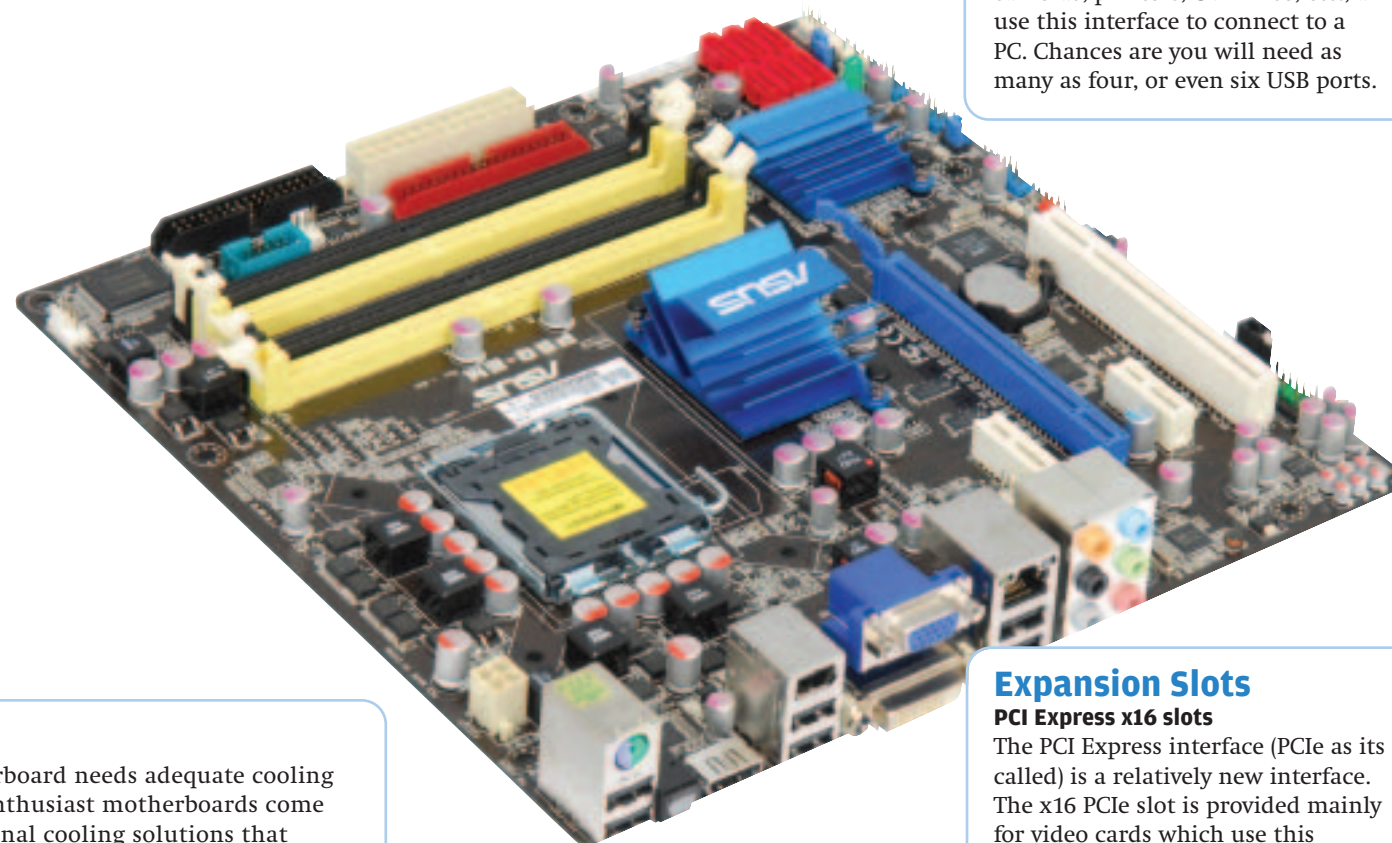


Your motherboard needs adequate cooling too. Some enthusiast motherboards come with additional cooling solutions that utilise heat-pipes to whisk heat away from the hot regions. These may be worth checking out as lower temperatures generally increase both the longevity and stability of your motherboard. Although this feature may not be essential to everyone, if you are building a powerful computer it may be worth looking at.

Addons



Enthusiast motherboards come with some rather unique features. Some of them may have power on / off, reset and clear CMOS switches on the board PCB or the rear I/O panel. These are more than flashy add-ons and of great use to tweekers and overclockers.



Memory Slots

DDR RAM is history these days and its hard to find any in the market. Your motherboard should ideally support DDR2 memory with four memory slots on the board. This gives you the flexibility of opting for lower density, cheaper DIMMs or higher density costlier DIMMs. Some motherboards support both DDR2 and DDR3 — an added plus because DDR3 will become the *de facto* standard within a year and your motherboard will no become obsolete as other DDR2-only boards will be.



USB Ports



USB ports are necessary for external connectivity and are usually found on the rear panel of your motherboard. Digital cameras, printers, USB mice, etc., all use this interface to connect to a PC. Chances are you will need as many as four, or even six USB ports.

SATA Ports

Serial ATA is the existing storage interface for hard drives and motherboards these days. The number of ports you need depends on your storage needs and the number of hard drives you have. It's a good practice in future proofing to look for a motherboard with at least four SATA ports.



Audio

Most motherboards come with either 5.1-channel or 7.1-channel audio connectivity. This is via analog 3.5-mm connects. This is important for every user as your speakers would connect here. A microphone connect is also provided. In addition some boards support digital connects like Co-axial (SPDIF) or optical connectivity. Look out for this as digital connectivity usually means better signal quality and less interference.



Audio Connectors
Analog interface

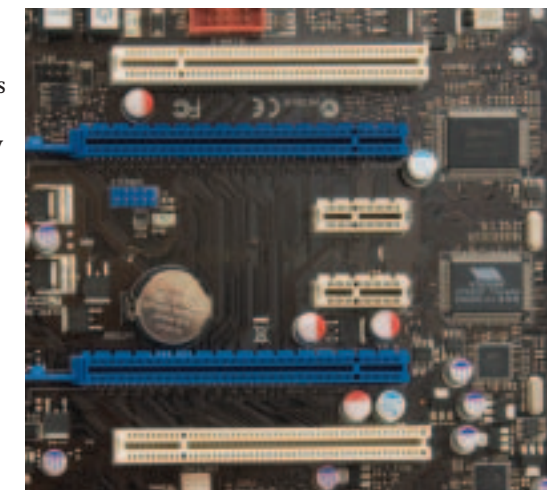


SPDIF/Optical
Digital connectivity

Expansion Slots

PCI Express x16 slots

The PCI Express interface (PCIe as it is called) is a relatively new interface. The x16 PCIe slot is provided mainly for video cards which use this interface as it provides very high bandwidth. A PCI Express slot is of great importance to anyone interested in using a graphics card. Gamers and extreme enthusiasts may want to look at two such slots for using multiple video cards and enabling multi-GPU support technologies like NVIDIA's SLI (Scalable Linked Interface) or ATI's Crossfire.



PCI slots

These are still used in some video mixing cards. PCI slots are typically white. Some motherboards have the PCI slots adjacent to the graphics cards x16 slot, making it unusable.

PCI Express x1/x4 slot

The PCIe X1 slot is hardly in use except by the newer sound cards. However, an X1 slot certainly cannot hurt.



PMPs

Portable Multimedia Players (PMPs) are the new rage and its become rather fashionable to be seen with a set of earplugs stuck in your ears and a PMP clipped on to your belt. As with any personal technology gadgets, PMPs are geared towards becoming more usable and user-friendly from touch screens to PIM (Personal Information Management) features, to the ability to surf the Internet. Modern-day PMPs are highly converged devices. For a PMP to have mass appeal, it's necessary to include a whole mess of features that will satisfy more often than not.

When considering a PMP, it's very necessary to consider your needs. Although this bit of advice may seem at loggerheads with what is mentioned above remember that even the most multi-faceted PMP is aimed at a particular cadre of users more than others. For example, PMPs with larger screens are aimed at people looking for a video player. Such a PMP will compromise on compactness more often than not due to the larger screen. A small PMP would be aimed at someone looking to use it for music, where screen-size is not a criteria, but compactness is. Similarly, a HDD-based PMP would offer more storage than a flash based PMP. Naturally, this is for those whose storage needs are greater.



Bluetooth headphones

These are becoming quite common. Because its a one-to-one connection there is hardly any disturbance



Bluetooth logo/icon

Useful if you have headphones that support Bluetooth or for transferring music



WLAN logo/icon

WLAN is useful for those looking at surfing the internet on their PMPs

Storage

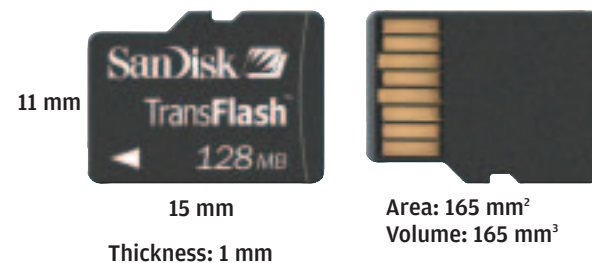
In case you just need something to carry around some 200-odd MP3s, a PMP with 2 GB of storage would be enough for you. There's no sense spending more money on a bigger capacity PMP, and you would be better off spending the extra cash for more features or on a better brand. If you want a video-based PMP, you will obviously need more storage as each movie could take up at least 200 MB. Then there are those who like to cart around their entire MP3 collection. Obviously, you would need a lot of space in order to accomplish this.



Flash

Flash PMPs are available in capacities of up to 32 GB. Generally, the thumb rule is to take into account the total space you need, and search for a PMP offering you exactly double the capacity. 8 GB and 16 GB capacities are the most common and offer the best bang for your buck.

Memory Expansion



11 mm

15 mm

Thickness: 1 mm

Area: 165 mm²Volume: 165 mm³

HDD Storage

The 1.8-inch HDD form factor offers a lot of storage to the tune of 80 GB. Good for those with larger storage needs.

Miscellaneous Features

A few PMPs come with additional goodies like in-built WiFi and Bluetooth. An integrated browser coupled with WLAN capabilities means you can surf the net on your PMP; a nifty addition that may be useless to some but ultra-utilitarian for others.

Bluetooth support means music can be transferred wirelessly from a notebook PC or a Bluetooth enabled desktop PC. Bluetooth with support for A2DP means you can actually invest in a set of Bluetooth headphones and enjoy audio content without the need for wired earphones.

Dimensions

In case you need something unobtrusive that sits in your pocket with minimum fuss, look at something lightweight and really compact. Often, such PMPs will be flash based.

If you're more interested in features like video playback and a touchscreen, then your PMP will also be bulkier and heavier.

A tiny PMP



Earphones

This is an important consideration for a PMP that is typically overlooked. The audio quality of a PMP will largely depend on your choice of earphone. Usually the quality of the earplugs bundled with the PMPs is substandard so you're better off buying a good set of earphones. Earphones can be of two types: In-ear canal earphones that are also called earplugs and in-ear earphones that do not protrude into your ear canal called earbuds.

In general earplugs offer more sound quality than earbuds and they also isolate outside noise better. Due to the fact that they stick into your ear canal they're also tougher to dislodge; which is helpful for joggers, commuters aboard busy public transport and other similar scenarios.

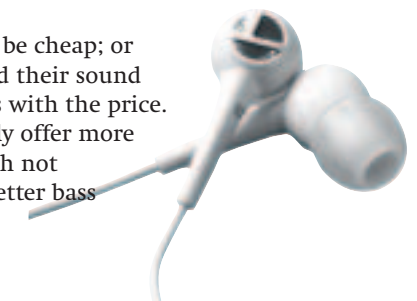


Earbuds

These come with many players. They generally offer strictly decent sound

Earplugs

Earplugs can be cheap; or expensive and their sound quality varies with the price. They generally offer more bass; although not necessarily better bass



Supraaural headphones

These sit on the outer ear. They offer good sound although this differs from brand to brand. Sennheiser and Grado are known for their supra-aural sets





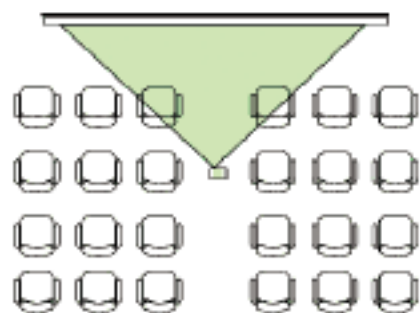
Projectors

If you're among those rare breed of people who opt for a projector over a large screen display as the display component of your home entertainment system; you know the basic merits of a projector so we'll only touch on them here. Business users need the flexibility of a huge screen; especially when conducting group meetings, large presentations and even during employee training sessions. If you're the kind of person who craves a true cinema experience or just needs a very large display for your office an LCD or plasma screen many not be a viable option. As the screen size increases such panels become prohibitively costly; while a 32-inch LCD may cost Rs 50,000, a 90-inch display could cost well over rupees three lakhs. What if you want a 130-inch display? In such cases a projector makes more sense as you can get a much larger image for a smaller price.

We discovered that these units are more multi-purpose than we initially expected; this simplifies the process of choosing one.

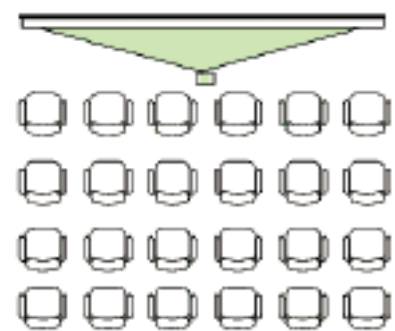
Long Throw Or Short Throw?

One of the important things to consider is what is going to be the distance between your projector and the screen. In case you have a large living room or huge hall the projector may need to be kept more than 30 feet away from the screen. In such cases you need you need a long throw projector lens; which is capable of displaying a smaller image over a longer distance. A short throw projector, on the other hand can display a larger image with a very short distance between its lens and the projector screen. Both long and short throw lenses are available for all projector models but just which one you need depends on the situation. Some users may need both in case their projector is used both inside large halls and cramped spaces.



Long Throw

For those with large rooms where the distance between the projector and screen is more than 20 feet



Short Throw

For smaller living rooms; where the distance between screen and projector is no more than 18 feet



Screens

The choice of screen also plays a significant role in your viewing experience. Generally at least 20 percent of your total budget for the projector should be allocated to the screen. A high-gain screen means the screen reflects more and is therefore perceived as being brighter; but this also results in poorer viewing angles. Lower gain screens are less bright; but viewing angles are better. It is important to reach a balance in terms of gain. Motorised screens are available too; these save you the hassle of unfurling the screen

Connects

When buying a projector please consider the connectivity options that you may need. PC D-Sub and/or DVI connectivity is important in case you need to connect your projector to a PC or notebook and a projector should ideally have at least one PC connect. HDMI is very common on higher home entertainment projectors but you may not find an HDMI port on cheaper projectors or business oriented projectors; as it is primarily a standard meant for home entertainment. Component connects are also useful for someone looking at a high quality analog video signal; give this preference over Composite connects who's output quality is not as good.



Brightness And Contrast

Although we are the first to warn users not to solely look at the manufacturers specifications and make buying decisions on the same brightness and contrast are two characteristics you should take careful notice of. The more the brightness rating (in lumens) of the bulb; the brighter your image on-screen; which is a good thing; especially if you are using a slightly longer throw projector.



High Contrast

Rich, vibrant and bright colours



Lower Contrast

The image may not be as bright, colours won't be as vivid

Resolution

The resolution of your projector is also important especially if you want a cinematic experience at home; if you are working with content at HD resolutions like 720p or 1080p then the resolution becomes even more important. For most users an XGA projector capable of 1024 x 768 pixels should suffice. Remember to look at its native resolution; and not the list of supported resolutions as this is misleading. Projectors, like LCD monitors produce the best results when run at their native resolutions. Stay away from VGA (640 x 480 pixels) or SVGA (800 x 600 pixels). An XGA projector will easily handle HD content; but there are 720p projectors that work with widescreen content (like HD content) better.



SVGA

These projectors are much cheaper than XFGA ones and are mainly for budget conscious audiences

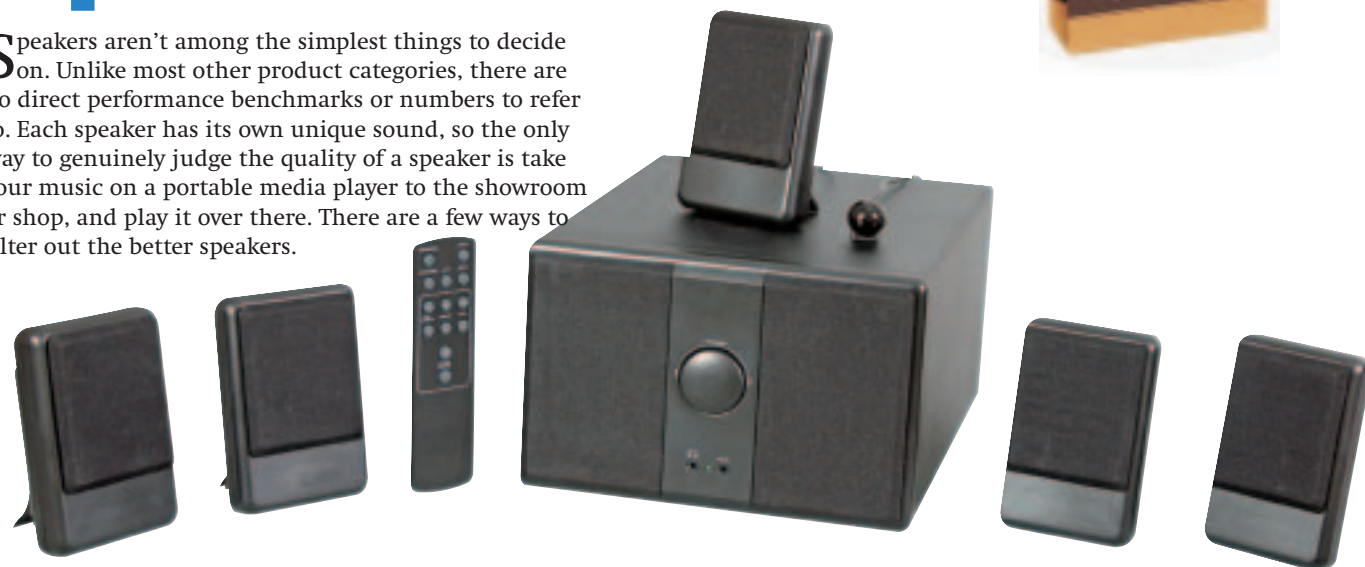


XGA

1024 x 768 pixels is enough for most people. Text images will be a lot crisper

Speakers

Speakers aren't among the simplest things to decide on. Unlike most other product categories, there are no direct performance benchmarks or numbers to refer to. Each speaker has its own unique sound, so the only way to genuinely judge the quality of a speaker is take your music on a portable media player to the showroom or shop, and play it over there. There are a few ways to filter out the better speakers.



What Do You Need?

Everyone needs speakers or at least needs to own a set. Speakers are typically meant for listening to music and watching movies. Gaming is another growing form of entertainment that's best experienced with a good set of speakers. Surround sound speakers — those that come with four or five satellite speakers and a subwoofer are best suited for movie watchers and gamers.



Those who want to listen to just music should stick to 2.1 speakers. The music we listen to is recorded in two channels, so 4.1 and 5.1 sound systems will be a waste.



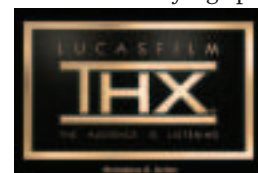
Cables

Speakers come with cables, but the quality of cables is a concern with some speakers. They are too thin, flimsy and are bound to break if tugged on. Look for thick and well insulated cables. Some speakers even come with gold-plated connectors.



Standards And Certifications

Although this isn't the best way to judge the quality of speakers, it's a must while buying speakers.



Speakers with any kind of certification tend to be the safer bet, as they are only certified if they follow set design criteria or their sound meets a specific standard. In this process, however, you will automatically miss out on good models from the lesser known brands.

Drivers

Quality is contributed to by the components in the speaker itself. The driver size can help you get an idea of size. Well-known speaker manufacturers sport their driver sizes. Look for large drivers in your speakers to ensure powerful and good quality sound. Some speakers use a single, full-range speaker, or multiple smaller drivers with each one dedicated to a range of sound frequencies. Here's where the range of frequencies is important. Speakers should go as low as 20 Hz and as high as 20,000 Hz. Look for speakers that support this range or even better.



Connectivity

Speakers should allow the user to connect all kinds of audio sources. A 3.5-mm jack is a must for desktop speakers that are to be used with a computer. If a 3.5-mm jack isn't supported, then be sure to get 3.5-mm to RCA connector converters.



Remote Control

Like a TV, speakers are meant to be kept slightly away and it's bound to get annoying when you have to reach for your computer to increase the volume. A remote is one of those things that skip people's minds. Look for a speaker that comes with a remote control to make things a little simpler. Look for remotes that come with controls for bass and treble as well as the volume control and obviously a mute button. If remotes aren't available at least find speakers that come with a wired console to control the speakers.



Wired-remote



Wireless Remote

Design

Speakers most likely end up in the living room or right next to the computer. Design, then becomes one of the most important factors of a purchasing decision. They should have an appealing design, and at the same time, should be built robustly. The sturdiness of the speakers also says things about the quality of the speaker — the heavier the speaker, the better chances of it being good.



next to the screen, but the rear speakers need special arrangement. If the speakers don't have stands, look for provision for mounting the speakers on the wall or another stand. If they don't, then you have go through the trouble of buying some separately or making some.

Stands

Make sure that the stands or base of the speakers is sturdy enough and won't topple over easily. Some speakers even come with stands. These are good, especially, if you are looking for surround sound speakers. The front speakers often sit comfortably on the table

The Body

The body of the speaker is also important. Avoid plastic bodies. Instead, look for thick heavy wooden cases. The tone of your speaker's output is highly influenced by the kind of materials used for the frame. Again, weight can help filter out the poor quality speakers.

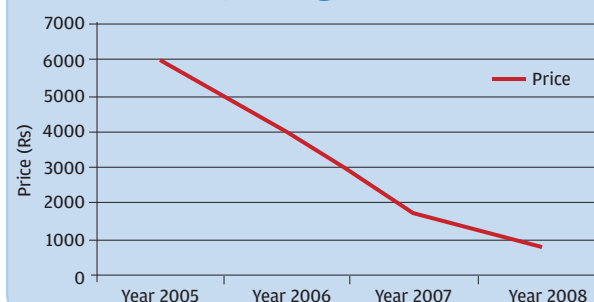
Storage



Hard drives and storage have come a very long way. Storage drives keep getting cheaper and then capacities keep on increasing. The demand for higher capacity drives has also kept up, thanks to the whole broadband revolution that's spreading across India. Prices have dropped so low that a good 500 GB hard drive can be easily purchased for under Rs 4,000. It's no longer just all about capacity anymore. There are many other factors that should govern a buying decisions and these are some of the most important ones.



Flash drive pricing



Design

Flash drives are objects that you forget about, after use. They are used everyday and go through a beating. So it's important that it be sturdy. Look for drives that come with a rubber body, so they don't break or get damaged if thrown around. Such drives also happen to be water resistant. Flash drives with caps or sliding mechanisms can also stop the USB connector from getting damaged. Make sure your drive has a status indicator that shows whether the drive is in use.



Rugged flash drive

Flash-drive-foldable

Flash-drive-cap

Flash Drive Security

Some flash drives come with built-in security features. This allows the user to set a password to a partition on the drive. This way, only authorised users can access data on it. Look for drives that can encrypt data as well.



Performance

Performance helps when you want to quickly copy some data before leaving for work. If you plan on using the drive for Vista for ReadyBoost or run a portable Linux distribution, performance helps. Anything over 25 and 30 MB/s can be considered as a good standard for performance drives. Entry-level value drives will perform around half that.

Hard Drive Cache

The cache on a hard drive is some indication of the performance of the drive. Look for drives that come with 32 MB cache. These large buffers are only present on some of the newest hard drives from manufacturers.



SATA 2

SATA 2 is an absolute must for fast drives. SATA 2 has no changes to the hardware, but the standard allows speeds of upto 3 Gbps. Also, make sure your motherboard supports SATA 2. Being backward-compliant, older standards still work.

Heat

Faster the hard drives get, the hotter they get. Try and look for drives that have a compact design, but have a big bulky cooler to control temperatures. Some of the drives have high density platters, so only a single platter or two is sufficient. These drives are generally thinner and also run considerably cooler.



Warranty

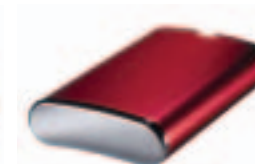
With the speeds at which the drives run these days, operating temperatures are high. Reliability has been an issue, especially with continuous operations. Many manufacturers give a very long warranty period — something like five years. Some of the warranty schemes are highly attractive. The company sends over somebody to pick up the drive and send it over within a week.

External hard drives build quality

The most important factor in external hard drives is the case. The case should be rigid and be able to withstand daily rough use. It shouldn't be too bulky that it always requires a bag to be carried around. Some manufacturers have incorporated sturdiness and great catchy designs to suit the style-conscious.



Rugged hard drive



Stylish External hard drive

Interface

Portable hard drives typically come with all kinds of interfaces — the most common being USB. Make sure the drive is a USB 2.0 compliant drive. There are some drives that can be E-SATA and some with Firewire. E-SATA is bound to be a tiny bit costlier but do not spend in excess for these drives.



eSATA



USB



Firewire

Networking

Networking functions have become part of some external drives. These drives come with some built-in firmware to let users dump data on the drives over the network. If you do want a network drive, then also look at what kind of software comes built into it. Look for FTP hosting features on the drive.





100 Bazaar



114 Agent 001

117 Your Questions,
Our Answers

Digital Tools

Technology For Personal And SoHo Productivity

Main Story

We've all heard the hype created by Solid State Drives (SSDs). Touted as the magnetic storage or hard disk drive (HDDs) killers, SSDs represent something exciting; for it has been awhile since any breakthrough progress has been made in the storage domain. While processors have gone multi-core and graphics cards have grown ten times the number of shader units; hard drives have been making slow progress indeed. The obvious benefit of a mature technology is a proven track record and therefore reliability, which is more important for storage than speed. Hard drives have also gotten faster as manufacturers have pulled all the tricks they know by increasing areal density of the platters on an HDD, to increasing the buffer to even increasing the drives rpm. However, any mechanical device has limits to its performance increments and it seems hard drives have hit a solid wall; and any increments now, whether in reliability or performance are miniscule.

An SSD changes the rules of the game; storage is now not on magnetically oriented platters but on memory chips; either flash chips or RAM chips; the latter being much costlier in terms of price per unit of data stored (megabyte, gigabyte etc). Therefore an SSD is little more than a few memory chips on a PCB and a regular serial ATA interface. The most obvious benefit the lack of mechanical parts, which means less heating, increased performance (no mechanical delays), lower noise levels, and of course, less fragility. Also, since there is no read / write head, the operation is completed with minimal latency – unlike an HDD.

Therefore factors like file fragmentation do not matter. Most of the SSDs available today are flash-based. DRAM-based SSDs are very fast; and are bottlenecked by the SATA 2.0 bus' theoretical transfer limit of 300 MBps. They are also insanely expensive; which is why they are so rare.

**So, SSD or HDD?
The two storage technologies one an old timer and survival expert; the other the cocky newcomer slug it out**

War at the store

SSD vs HDD



HD Tach (Intel SSD) – Note the very high read speeds and mediocre write speed

There are two main types of flash-based SSDs, those based on MLC (Multi-level cell) memory and those based on SLC (single-level cell) memory. Think of a cell as a single memory element; akin to a cell in our body. The former technology, MLC, has the benefit of being cheaper per gigabyte of storage. This is because each cell can store multiple bits of data; thus increasing storage density. This also means that errors are likely to occur, due to software complexities of such storage. SLC has the benefit of being much more reliable than MLC, since each cell only stores a single bit of data.

Flash drives have a couple of even more serious minuses. One; their write speeds are usually much slower than reads. Secondly, all flash memory has limited write (erase) cycles. For SLC, flash-memory cells can handle up to 1,00,000 writes; while for MLC this figure is much lower, in the region of 5,000 writes. Since some files like log files, file allocation tables and page files get written to very often (much more than flashes tolerance level) many consider flash to be unsuitable as yet for replacement of hard drives.

For our test, we used Intel's own 80 GB SSD drive for this comparison. The choice of hard drive was unanimous; Western Digital's new Velociraptor was our choice. This hard drive features a 2.5-inch form factor in a 3.5-inch chassis that helps reduce heating and a spindle rotational speed of 10,000 rpm. It supports SATA 2.0 and has a 16 MB buffer. This drive also offers greater storage than earlier Raptor hard drives at 300 GB.

HD Tach shows an interesting graph. While the read performance on the SSD drive is unbeatable and very close to the 300 MB per second theoretical limit that the SATA 2.0

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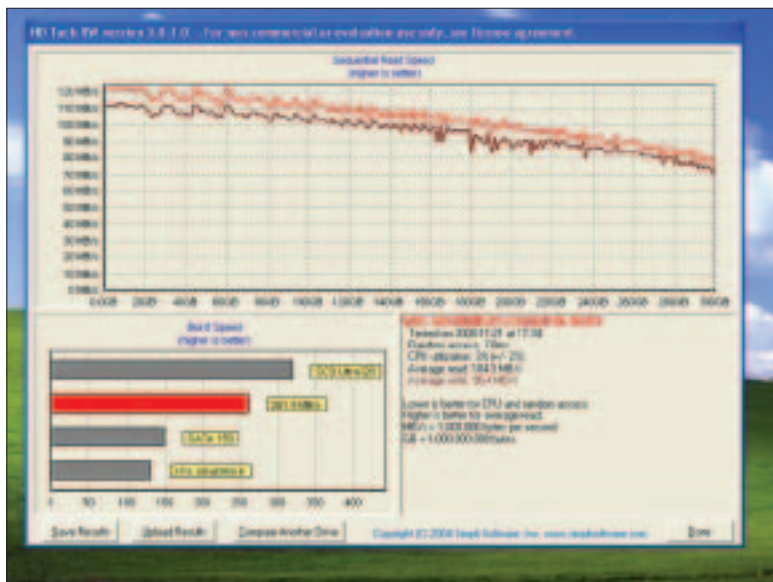
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HD Tach – WD Velociraptor; note the excellent write speeds; read speeds are lower than SSD

interface imposes its write speed is pretty ordinary. In comparison the Velociraptor manages a modest read speed 104.3 MBps; but its write speed shines at 96.4 MBps; which is much more than the SSD's write speed of 77.8 MBps. However, since most of your hard drive operations are read and not write operations; take this with a pinch of salt.

We see the SSD ahead of the Velociraptor in all tests; that's a comprehensive victory in the real world scenario. Of course the write tests are a close thing; and while HD Tach lists the Velociraptor as having a higher write speed; the real world tests take into consideration into access time and spin up/down of the spindle as well as mechanical latencies.

A Comparison Of Both Drives In Real-world Tests

Benchmarks (Less is Better)	Intel 80 GB SSD	Western Digital Velociraptor 300 GB
4 GB External write (Sequential)	57.9 sec	77.4 sec
4 GB Internal read / write (Sequential)	73.9 sec	79.5 sec
4 GB External write (Random)	83.3 sec	89.8 sec
4 GB Internal read / write (Random)	78.9 sec	72.3 sec
WinRAR 3.8 Create Archive (4 GB)	77.7 sec	84.3 sec
Adobe PhotoShop CS3 load time (200 MB file)	7.13 sec	12.5 sec
Far Cry (Mission 1) loadup time (sec)	17.8 sec	28.1 sec
STALKER (level Garbage) load time (sec)	21.4 sec	36.7 sec

How We Tested

The following test components were used:

Components	Model Number
Processor	Intel Core 2 Quad Extreme QX 9650
Motherboard	ASUS Rampage Formula (X48)
RAM	Corsair Dominator 1x4 GB, DDR2 1066 MHz
HDD	WD Raptor 80 GB (Primary)
Graphics Card	NVIDIA GeForce 8800 GTX
OS	Windows XP SP2

We installed Windows on the primary drive which was an 80 gigabyte WD Raptor. The test drives were formatted using NTFS file system and the cluster size was kept constant at 4096 bytes.

We used HD Tach 3.0 for theoretical testing; the hard drives to be tested weren't formatted so that we could run HD Tach's write tests which only work if the hard drive being tested is unformatted. In our external tests we copied data from another hard drive to the test drives and the internal test consisted of an inter partition copy.

Another write test involved using WinRAR 3.8 We created a 4 GB archive with "storage" as a setting. This ensures minimal CPU usage since there is no compression. Using Adobe PhotoShop CS3 we opened a 200-MB test file and recorded the time taken for the same. This checks the sequential read speed of the drive, very important for anyone working with large files like 3D renders and image files.

Our last test involves checking the read speed of the drive while loading games. This is the best example of a random read; because in order to play a game multiple files of different sizes and types have to be loaded. *Far Cry* and *S.T.A.L.K.E.R.* are two popular games with extremely long load times; the latter in particular can take as much as a minute to load on a slow PC.

Once all these factors are considered SSD is clearly faster. The great news is that this SSD is flash based; RAM based SSDs will be considerably faster. As faster flash memory based SSDs arrive; you can expect them to push the SATA 3 standard to market. This standard offers 600 MBps transfers.

So SSD is unanimously faster; but a lot costlier as well. An 80 GB SSD costs in the region of Rs 30,000; while a 250 GB SSD will cost close to a lakh, if not more. However, prices could tumble very fast if these products suddenly catch the focus of manufacturers; right now they're pretty much on the fringes. ☒

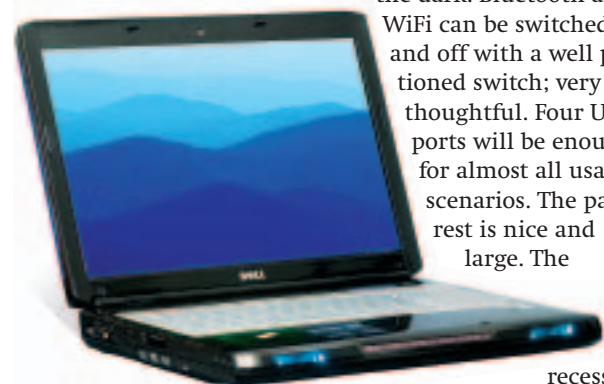
michael.browne@thinkdigit.com



Dell XPS 1730 Lap Busting Hardcore Performer

Large and lovely — initial impressions. Never before have we seen such components under the hood of a mere notebook it is; at 17-inches with a large bezel, this monster weighs in at just under five kilograms. Its aimed at LAN party freaks and gamers who want limited portability; certainly nobody

although this isn't apparent immediately, but becomes more evident once you spend some time using it. Keypad feedback is right on; as is the ergonomics and we have absolutely no complaints. There are also large and blue backlit, chromed multimedia buttons on the front of the notebook which work well and are usable in the dark. Bluetooth and WiFi can be switched on and off with a well positioned switch; very thoughtful. Four USB ports will be enough for almost all usage scenarios. The palm rest is nice and large. The



recessed

who wants to cart his notebook around everyday ever will. If you want compact; skip this review now! We'd call it a desktop replacement but its clearly oriented towards the gaming fraternity; which makes it somewhat of a rarity.

Its colossal bulk aside, the XPS 1730 is quite a looker. With a solid body that has a mock carbon fibre finish and solid build quality all round you can be sure of a long lasting product. The screen is very crisp and has great viewing angles, while the resolution of 1920 x 1200 pixels may be considered to be too high for a 17-inch screen; we respect the fact that this was a necessity for what is essentially a gaming notebook. The keypad is also very well laid out

but sensitive trackpad works well.

There's a little monochrome LCD display below the right hinge that works like a small status display showing the time, CPU and memory utilisation among other parameters. Powered by an X9000 Core 2 Extreme Edition CPU that runs at 2.8 GHz, the XPS 1730 has enough processing grunt to handle nearly anything you can throw at it. The price of this CPU alone is in the region of Rs 60,000 so be prepared to an unpleasant surprise when you read this behemoths price. The configuration we received also had 4 GB of DDR 2 667 MHz memory and two NVIDIA GeForce 8800 GTX graphics cards in SLI (Yes! You read that last part right). You can also upgrade to a 500 GB x 2

RAID 0 hard drive solution; and Dell offers an 80 GB SSD solution too, although this is prohibitively expensive at the moment.

With such components we expected performance to be shattering; while not on par with the fastest desktops around, the fact that Dell was able to get two of the fastest mobile graphics solutions under this things hood itself speaks volumes about their design. Obviously this notebook dissipates a lot of heat and the rear portion gets very hot; but through the vents large fins are visible which evidently do a good job; as the palm rest does not heat up at all.

We tested the mighty XPS 1730 with a plethora of benchmarks and here's what we got:

The XPS 1730 scores more than the average gaming PC; with a mighty 12735 in 3D Mark 2006. Its hard drive index of 50 MB/s is also better than the average notebook; their scores usually do not exceed 40 MB/s. It does very well at gaming; its bread and butter and is easily the fastest gaming notebook out there. Battery life is a measly one hour 15 minutes with SLI on and one and a half hours with SLI off; gaming without mains power means your battery will run out in 35 minutes; well its better than your gaming rig and UPS!

So it's fast; and expensive. The configuration we got costs around Rs 2,00,000; which is definitely very high for a notebook. While its true that

Benchmarks	Scores
PC Mark 2005 Overall	7683
CPU	7006
Memory	519
Graphics	12482
HDD	4809
3D Mark 2006 Overall	12735
CPU Score	2546
Doom 3 (1600 x 1200)	120.6
Doom 3 (640 x 480)	149.7
COH (1920 x 1200)	46.6
COH (1024 x 768)	351.4
S.T.A.L.K.E.R (1680 x 1050)	121.3
SiSoft Sandra 2008	
Dhrystone	25881
Whetstone	20551
Multimedia Integer	154215
Multimedia Floating	84257
HDD Index	50 MB/s
Memory Integer	4597 MB/s
Memory Floating	4612 MB/s
Wprime (sec, less is better)	54.551 sec

you could assemble a PC that's thrice as powerful for the same price its equally true that no other notebook available in India can even hope to approach this sort of performance. If you have the moolah, are looking for something exclusive by nature of its very price and desire a gaming notebook that stands out at your next LAN fest; you may have found just the thing.

Specifications

CPU — Core 2 Extreme X9000 (2.8 GHz), 4 GB RAM (DDR2 667 MHz), GeForce 8800 GTX x 2 SLI, 200 GB (7200 rpm) HDD, screen — 17 inches, 1920 x 1200 pixels.

Contact: Dell India
Phone No: 1800-425-4026 / 080-2506-8026
Email: online_india@dell.com
Website: www.dell.co.in
Price: Rs 1,99,200

RATINGS	
Features	★★★★★
Performance	★★★★★
Build quality	★★★★★
Value for Money	★★★★★
Overall	★★★★★

Sony Ericsson Xperia X1 Was It Worth The Wait?

Few items generate interest like the SE Xperia X1 did. This was also to be our first look at Windows Mobile (WM) 6.1. Our first reaction on un-boxing it was "Wow, it's a lot smaller than we imagined." It's very compact for a side-slider phone with a QWERTY keyboard and a 3-inch, 800x480 pixel screen.

The X1 feels solid. The brushed metal finish (black in this model, but silver is also available) resists smudges; the screen, however, doesn't.

After a slow boot-up, we noticed that although most of the body is metallic, the front buttons are plastic. The stylus fits in perfectly with the body — no chance of pulling this out of your pocket and losing a stylus.

The high-resolution screen is one of the best we've seen. It's crisp, crystal clear and no complaints even in direct sunlight. Our first complaint — you have to tap a lot harder than normal.

The phone was quite responsive when going to settings and menus — not Symbian fast, but fast compared to other WM devices. No Walkman software here; WM player handles media and some files would hang the player for a few seconds; we suspect a software bug. Wide-screen format videos play flawlessly, and look really good on the X1.

Opera is the default browser; IE is still available but you have to select it from the menu. The 5-way navigation button on the X1 acts like a touch control, with four actual clicks on either

side. The centre button is like a trackpad, but without a mouse cursor. Although the centre button is meant to scroll through long pages and links, we found the stylus and the click buttons just offer more control.

The slider is ultra slick and the QWERTY keypad is quite impressive to look at, and since each button has a triangular-shaped raised part, it's also quite easy to find the right keys. Key feedback is lacking, so again, there's a little bit of a learning curve involved.

The X1 allows you to choose different looks and layouts for the WM Today screen, and they call this feature X-panels.

The first time we inserted the SIM card and started it up, the X1 claimed there was no SIM. When trying to remove the SIM, it ended up dislodging the chip from the plastic that holds it; SIM retention is not ideal.

Connectivity is the X1's forte, with all the options you can think of — Wi-Fi, Bluetooth, GPRS, Edge, GPS, etc. Thanks to WM 6.1, and its new Connection manager, it's really easy to switch off or on different connections. We tested the X1's Wi-Fi and GPRS connectivity, and found that it all worked flawlessly.

Once we got it working, the network reception was good; not as good as Nokia's N-series, but still commendable. Voice clarity was exceptional when on a call, and people at both ends could hear each other clearly. The ear piece volume and clarity of the X1 are also impressive.

Running WM means that mobile MS Office is available, and you have a very long list of office related apps to choose from.

It's actually the quality of the screen that makes this the

perfect PDA-phone. Working with documents and e-mail are a joy. You will enjoy the clarity that the screen offers at even miniscule font sizes.

The 3.2 MP main camera is nowhere close to as good as the cameras we've become used to. The 3.5 mm headset jack on the top of the device is something we've been waiting for from SE, and is good to have for those who want to connect a better set of headphones than the bundled ones. The provided headset offers decent quality, but the audio quality improves drastically a set of EP630s.

The light sensor works so well that you never notice any drastic changes in screen brightness and the screen clearly visible at all times. Speaking of lighting, multi-colour LEDs at each of the four corners of the sides of the phone look cool and illuminate when starting up or when you are notified of an event such as a message or a missed call.

Memory expansion is needed, because the device only features 512 MB ROM, and this is taken care of by a Micro SD slot that's below the battery cover, but not below the battery — so no need to power down the device to insert / remove the memory.



Priced at Rs 44,500 the Xperia is expensive. Sure you get WM 6.1 device with a decently fast processor and RAM. Yes this device is unique, and definitely offers amazing flaunt value; it's also true that you get a really nice PDA / Smart phone with an impressive screen but a Netbook and a good phone would probably be much better as solutions for those who need to work on the move, and they'd be cheaper too! If it's available for around the Rs 30K mark, it's something you really should own.

Read the full review on www.thinkdigit.com

Specifications

WM 6.1 Pro, CPU — Qualcomm MSM7200A (528 MHz), 512 MB ROM, 256 MB RAM, Screen — 3-inch (800x480), 65k colours, 3.2 MP Auto Focus camera, A-GPS, BT 2.0, WLAN, microSD expansion, 1500 mAh battery, weight — 158 g

Contact: Sony Ericsson
Phone: 39011111
Website: www.sonyericsson.com
Price: Rs 44,500

RATINGS	
Features	★★★★★
Performance	★★★★★
Build quality	★★★★★
Value for Money	★★★★★
Overall	★★★★★

Cowon Q5W
Heavy Duty Pocket Entertainer

Cowon is a brand that we respect and rightly so; their D2 and i7 were two PMPs that still stand out amidst all the competition. However there was something missing; Cowon has a video PMP in the A30 series but other than a 4-inch screen there's nothing unique the A3 and Creative's Zen Vision W is a serious threat. And we like a bigger screen; the bezel on the A30 is something that wastes too much of space with fancy large buttons. Enter the Q5W, Cowon's attempt at cramming aboard every possible feature a PMP user might want. We could fill a page with this thing's specifications alone; but we're not about to.

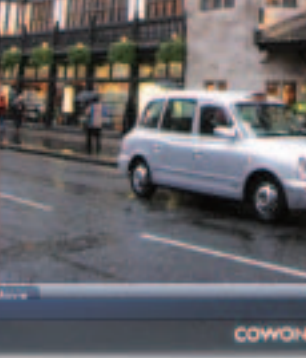
The Q5W is large; much bigger than most PMPs and heavy. It's solidly built and the dark navy body goes well with the silver-grey bezel that runs around all four sides. Everything about the design bespeaks restraint and with its very sophisticated look sans any sort of buttons on the front bezel, the Q5W looks intimidating. For starters it's got a colossal five inch touchscreen that displays 16 million colours and has a whopping resolution of 800 x 480 pixels. And it gets better. The Q5W actually runs Windows Mobile 5.0, which means it's a full-fledged PDA.

WLAN means you can get online and surf, Internet Explorer for WM is part of the package. If you install MS Office for WM you have the option of working with documents, spreadsheets and PowerPoint presentations. A mini-USB port connects to a computer while a full size

USB (type A) port has been provided to enable connecting with USB keyboards. This is a powerful connectivity option since this is one feature that most PDAs lack; which make them rather useless for anyone needing to do a lot of typing. Bluetooth is present and wireless headsets are supported.

The menu system is very simple; there are two side-bars which hold all the options and finger touches work as well as the stylus. The option on the left of the screen is the main one; clicking on this will open up sub-options on the right side. Holding the Q5W in both hands means these left and right menus coincide with both your thumbs; obviously something Cowon did deliberately and once you use this PMP you'll slowly appreciate the genius of the navigation system.

An AV cable with both Component and Composite connects is provided as is a remote control unit. This coupled with the fact that the Q5W plays .AVI, .DivX, .XviD, .WMV and MPEG4 files out of the box means that you have your very own portable DVD player. Copying a movie to the Q5W is as simple as a drag and drop and there's no encoding involved, like some of the other brands that use proprietary formats. Even audio formats are supported in plenty – MP3, WMA, OGG, WAV, FLAC, APE and MPC files formats are supported. This makes the Q5W immensely versatile and somewhat of a rarity in this format-restricted world of digital entertainment.



We tested the Q5W as an MP3 player first and were pleasantly surprised with its quality. Even on our reference headphones the Q5W produces accurate and detailed mid-range and highs, while the bass is tight and impact full with nary a hint of flab. We like the tonal neutrality; and with support for playback of .FLAC files, audiophiles will not be disappointed. People who really like movies on the go will also not find anything worthy of complaining about; the screen is as large as possible while retaining some sense of portability.

Used as a PIM or for browsing; the Q5W has all of WM5's flaws and all its merits. It's a very feature rich device that delivers the performance goodies as well. If there is one thing that the Q5W does fall short in; its in the expectation that Cowon had that a fully converged, all-in-one device will appeal to everybody. The concept is flawed; not the device. Someone wanting a simple music player could look elsewhere since there are cheaper alternatives around. Anyone looking at portability will definitely skip the Q5W; as this heavyweight is anything but compact.

Priced at Rs 32,000 for the 80 GB version the Q5W is certainly interesting enough to consider despite the fact that its more than double the price of serious PMPs like Cowon's own D2 and Apples iPod Touch. No other PMP has all its features; and chances are none will. For those looking for a terrific PMP with a lot of additional features and a wonderful touchscreen the Cowon Q5W is just what you're looking for; irrespective of the price tag. If you're wondering whether its worth it or not; chances are it won't be to you; ditch the idea and buy a regular PMP.

Specifications
CPU – Alchemy AU1250 600 MHz, 128 MB DDR2 RAM, WinCE 5.0 Pro, Screen – 5.0-inch, 800 x 480 pixels, 16.7-million colours, Contrast Ratio-500:1, WLAN, Bluetooth support, 80 GB, 1.8-inch HDD

Contact: Lipap Systems Pvt. Ltd.
Phone No: 022-40032653
Email: iaudio@lipap.com
Website: www.cowonindia.in
Price: Rs 32,000

RATINGS	
Features	★★★★★
Performance	★★★★★
Build quality	★★★★★
Value for Money	★★★★★
Overall	★★★★★

Nokia E66
E Series Meets The Slider Craze

Gone are the days when Nokia used to make great, ugly looking phones. The E66 may be part of their business class E series but it's a serious multimedia phone as well. This slider phone is the non-QWERTY equivalent of the E71, which we reviewed earlier and found to have a cramped keypad. The off-white body finish is attractive but not overly so. The rear cover is solid steel which imparts both weight as well as a rugged feel. The front bezel is rimmed in chrome; the buttons on the front are transparent fibre on chrome which blends in with the bezel. The slider is built to last; this phone feels extremely solid in-hand and even the finish exudes a quality feel. The screen at 2.4-inches is crisp and bright; although we do not like the animated style of icons which Nokia has been persisting with.

The outer keys are built well, but not bevelled which may cause a few false key presses; nothing serious though. Dedicated hard shortcut keys for emails, contacts and calendar functions have been provided. The call accept/reject buttons are large and easy to use. The four-way joystick and middle button are large and comfortable to use; ergonomics are top class. Key backlighting is very good. The number pad is well laid out and the keys are very large which is good news for ham handed blokes. We feel this keypad would suit all people; top points to Nokia here. SMS junkies will have a good time and none of us had any issues whatsoever with the number pad. However for a business phone we

have to admit some users may need a full QWERTY keypad; in which you may want to look at the E71. The volume buttons on the side are large and easy to use. Nokia has included additional goodies like Bluetooth with A2DP support, WLAN and GPS. The E66 comes with 110 MB of inbuilt memory and this is expandable via microSD. All this makes the E66 a loaded device. A 2.5-mm jack has been provided for the handsfree kit; we feel Nokia goofed up in not offering a standard 3.5-mm jack since many people will want to use their own earphones for music and such. The quality of accessories is also top class.

Music quality if the E66 is strictly okay; we feel the earplugs could be the culprit but with the lack of any 3.5-mm connectivity we could not use our reference earplugs to test this. However due to the restriction of earplugs do not buy this phone if music is your thing; there are far better options around. The 3.2 megapixel camera is strictly so-so; there are much better 3.2 MP units around. The flash is substandard; but to the E66s defence it's a business phone. So the camera part is strictly cosmetic.

The GPS part of the phone is something we like; you can work offline using Nokia maps' preloaded maps or go online with either Nokia Maps or Google Maps (which is also provided). However once started we had a problem getting Google Maps to close and the application could not even be ended. A firmware patch should address this problem; but we had to restart



the phone to shut off Google Maps. The phone has an inbuilt accelerometer which Nokia has been including in all their higher range of phones. Although this gets annoying at times to find the screen has re-oriented this can be switched off. All considered we feel it's a decent inclusion.

Despite the fact that the E66 shares the same hardware under the hood as the Nokia N95 8 GB we found this phone to be sluggish; some applications take awhile to open and running any heavy multimedia tasks means the phone will take awhile to switch to other tasks. In-call quality is good and the E66 has a good inbuilt antenna that offers good reception and voice quality. The voice quality

while on loud-speaker is good too. The quality on the handsfree unit is decent; we've seen better from Nokia. The 1,000 mAh battery is acclaimed by Nokia to give seven and a half hours of talk-time; we measure this at around five hours – not bad.

Overall the E66 impresses but we're more concerned about its target audience. Hardcore business users will look for something a little more err hardcore, while multimedia users will find performance of the multimedia player and camera components lacking. So the E66 gets stuck between a rock and a hard place; or more aptly between a businessman and a college goer. At Rs 23,689;

its well priced. Anyone willing to look past its few (albeit noticeable) flaws will be rewarded with a feature rich, superbly built and long lasting device.

Specifications
CPU - 369 MHz ARM 11, RAM - 128 MB, Screen - 2.4-inches, 16M colours, 240 x 320 pixels, Weight - 121 grams, 3.2 MP camera with flash, 2 GB microSD card bundled

Contact: Nokia India Pvt. Ltd.
Phone no: 011-30303838
Website: www.nokia.com
Price: Rs 23,689

RATINGS	
Features	★★★★★
Performance	★★★★★
Build quality	★★★★★
Value for Money	★★★★★
Overall	★★★★★

HP TouchSmart IQ 508D

A Touch Is All I Need

With a glossy black body that is not more than 3 three inches thick and a small footprint, the HP Touchsmart PC IQ508D looks stylish and greatly economises on space by incorporating the traditional cabinet behind the monitor itself. The optical drive and ports are placed on the sides; neat design. Overall a very classy looking desktop.

The display on the Touchsmart is a 22-inch LCD panel having a native resolution of 1680 x 1050 pixels. The display is touch sensitive (hence the name TouchSmart) and supports Multi-Touch. If you are a big fan of Apple's multi-touch interface made famous by their iPod Touch PMPs you are definitely going to like it. But though quite big and responsive, the touch screen lacks precision, so it's bit difficult to work on smaller things like pop-up messages and notifications. Be prepared to clean it regularly though, as the screen picks up smudges.

Multimedia becomes serious fun with the ability to play videos, skip through movie clips and zoom in and out of photos or even watch TV; all with finger gestures on-screen.

Setting up monitor and other peripherals for this PC is extremely simple.

Apart from being a space saver, this PC features



onboard Bluetooth and Wi-Fi; something most desktops lack (if it is fair to call this a desktop!) for greater wire-free experience. However HP spoils the whole wire-free design by bundling a big and bulky power adapter with it throwing in a huge power adapter. We would have loved to see an onboard power supply considering heavy weight of this computer and also this would have significantly enhanced its space saver design.

For input devices other than the touch screen, this PC comes with a bundled wireless mouse and keyboard combo for smooth and comfortable operation. The keyboard and mouse are not very good in terms of ergonomics but are quite responsive otherwise, and if you love games and chat-

ting then you will not be disappointed by the performance of the mouse and the keyboard's tactile feedback.

This PC has 4 GB of DDR2 RAM, which allows it to handle several applications at the same time without affecting performance. It comes with a

7200 rpm, 500GB HDD to store all your favourite music, videos or anything you wish tothis should keep you satisfied for awhile.

Down to performance; PC Mark 05 score of 5189 is low for a Media Centre PC, but it is understandable given the fact that it has a Mobile processor in place of a Desktop processor for keeping its power consumption and heat output levels low.

As far as 3D performance is concerned, it may not be the best in league for a Media Centre PC, but still it performed quite well on our benchmarks scoring a total of 3342 in 3DMark 05 (Graphic intensive benchmark) and a maximum frame rate of 147 in *Far Cry* at 800 x 600 resolution, Medium with medium settings. Although this machine is not meant for gaming but it will not disappoint the occasional urge for some frags, or a few circuit laps.

Its onboard 4 watt speakers performed better than we thought they would, and are loud and clear. Although a little low on bass, the speakers performed well at different volume levels. Onboard audio is handled by Sound Max

HD integrated Digital audio controller that supports 5.1 channel sound output. This machine can also be connected to a home theatre system but only via SPDIF or optical connector as it does not have multichannel 3.5 mm connectors.

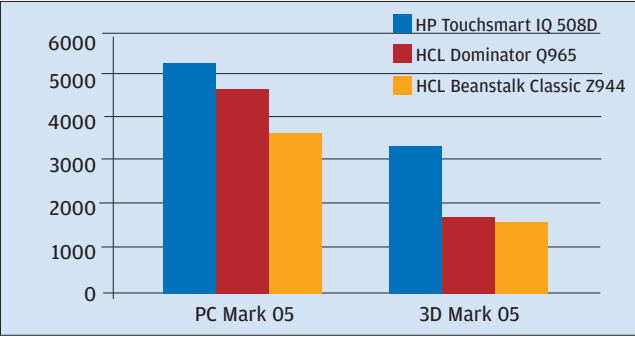
The TouchSmart IQ 508 D is priced at Rs 87,990. Essentially it is meant for home entertainment combining computing with entertainment and a new concept of having everything on a big touch sensitive screen but is it really worth spending that much? Our take is that the TouchSmart PC comes as a nice innovation from HP and makes computing more interactive and interesting. More importantly, it's more fun to have varied functionality, all built into a sleek and stylish body, without a cabinet. However, its high price tag might prevent most of us from considering this as a viable purchase. As with everything else tech, prices are bound to go down, so maybe it's best you wait for that.

Specifications

Intel C2D T5850 2.16 GHz, 4GB RAM DDR2 668 MHz, Nvidia 9300M GS Graphics Card (256MB), 500 GB HDD, Windows Vista Home Premium, 22inch touch sensitive display 1680 x 1050 resolution

Contact: HP
Phone: 0124-2566111
Email: diptesh.gosh@hp.com
Website: www.hp.com/in
Price: 87,990

RATINGS	
Features	★★★★☆
Performance	★★★★☆
Build quality	★★★★☆
Value for Money	★★★★☆
Overall	★★★★☆



N85 8 GB

N95 8 GB Junior!

Nokia's has always been known for solid albeit unattractive phones. Their latest phones try to solve the latter issue, and the N series has been a forbearer in this regard. Their N85 8 GB follows the latest design trend of being sleek, compact and sports the same kind of glossy, two-tone finish that we've seen from the newer N series phones like the N78, N82 and such. While some like the new colours, others may prefer the suave black of the N95 8 GB to the glossy mocha brown of the N85 8 GB. We feel that looks aside, these new finishes are longer lasting; this is noticeable after months of regular use. The N85 8 GB is built like a small tank and feels extremely solid in hand; much better than the N95 8 GB; full points to Nokia here.

It's a really compact phone that is slim even while incorporating a two way slider which has a nice slick movement. The slider does develop a little play after awhile of use; just how bad this is we'll only know after three or four months of heavy usage which is impossible to test within the timeframe we had. The screen is OLED, a first for Nokia and measures 2.6-inches. We found this screen dimmer and the colours slightly darker than other Nokia LCD screens. The colours also seem a little saturated, and we feel there's a lot of work that needs to be done on OLED screens judging from this one before they can replace LCDs in high-end smartphones. The first serious complaint is with the call accept / reject buttons — they're too tiny for proper use. The joypad is

also a pain with a rather uncomfortable bezel around the middle button. This four-way button (bezel, whatever) is also hard to press and the menu buttons on either side of it sometimes get pressed when you use it. Conversely, the four-way button gets in the way of the menu buttons, unless you use your nails. The buttons are, however, well lit. The inner keypad is completely devoid of beveling and only has a thin raised surface between the three rows of keys; despite this the keypad is good mainly because the number keys are well laid out and exude positive feedback. SMS junkies will not be disappointed. The volume buttons on the side and the camera button are really well placed and very easy to use; once again button feedback is excellent and positive. There is a hold slider provided for disabling the keypad; a plus when traveling as this avoids accidental key presses. The multimedia buttons on the two-way slider also work well and their backlighting is good.

For the first time Nokia has offered a USB charger; and the data cable and a/c adapter both utilise the same port. The five megapixel camera has a nice cover with a smooth action slide-back. Nokia provides a dual-LED flash which is more powerful than the flash aboard the N95 8 GB. A 3.5-mm connector for the headset means you can hook up your own headphones; a trend we've seen more often from Nokia in recent times.

Music quality is good; and the N85 8 GB is a good phone to use as a music PMP; the screen does let



down for video playback; we like OLEDs; they save power, but this isn't acceptable at the cost of display quality. Although text quality is good; and the screen is very crisp yet multimedia is not the pleasure it should be. In-call quality is good; and the N85 8 GB didn't drop a single call during our test and maintained good voice quality on speaker phone and with the headset. The phone is fast; faster than the Nokia E66 which we tested this month; and with a 369 MHz ARM 11 processor we'd expect it to be; this is faster than the hardware on the Nokia N96 which is their flagship model. NGage games support is built in and the N85 8GB can be used horizontally with games; the multimedia buttons double as game control buttons — neat! Additional goodies like WLAN and A-GPS with Nokia Maps keep things interesting; expansion is provided via microSD; and the suffix 8 GB is a misnomer as this phone doesn't have 8 GB of inbuilt memory; although Nokia does provide an 8 GB microSD card.

The camera is quite good; although we've seen an eight megapixel unit from Samsung; this unit produces good photos with decent lighting even indoors although you need to fiddle with the manual settings to get the best out of it. With a large 1200 mAh battery expect battery life to be quite good. We tested it and measured it at five and a half hours which is really good; right up there with our best phones.

At a price of Rs 27,299 (MRP), the N85 8 GB is certainly expensive, but it's a lot of phone for the price. We did not like the flawed menu pad and joypad; we didn't really care for the OLED screen and this phone should have had at least a 2.8-inch display. Other than that there's very little to nitpick about. It's very well built and very compact for the features; and the price is certain to fall in a couple of months' time. Do bear in mind that it doesn't have any more features than Nokia's other phones like their N96, N82 and N95 8 GB; so you have no dearth of choice.

Read the full review online at www.thinkdigit.com

Specifications

Dual slider CPU — ARM 11 369 MHz, 85-MB inbuilt, Screen — 2.6-inches, 240 x 320 pixels, 16M colours, , WLAN, A-GPS inbuilt, 5.0-megapixel camera with dual LED flash, microSD expansion.

Contact: Nokia India Pvt. Ltd.
Phone: 011-30303838
Website: www.nokia.com
Price: 27,299

RATINGS	
Features	★★★★☆
Performance	★★★★☆
Build quality	★★★★☆
Value for Money	★★★★☆
Overall	★★★★☆

Apple Macbook And Macbook Pro

The Best Things Come In Pairs

When Apple announced their new Macbook and Macbook Pro sceptics sniffed and aficionados waited with baited breath. We received the duo from Apple. First off, their packaging is extremely compact and you'll think the box of the Macbook Pro actually holds a 13.3-inch notebook instead of a 15.4-inch one; the Macbook's packaging too looks a couple of sizes smaller.

Gone is the distinctive white plastic that some hated and others adored;



but granted exclusiveness all the same. The new Macbook (MB hereon) and Macbook Pro (MB Pro hereon) are no less distinct though. Apple has gone totally metal with both of them and the bodies are completely aluminium. In fact the cover is made out of a single piece of aluminium meaning it's very rigid. The rear too is solid aluminium; top points for build quality. The finish is a silver-grey and matte finished. The lid on the both these notebooks is very lightly magnetised and doesn't feel hard to open at all; yet it will not open during cartage; great attention to minute detail.

Both these notebooks look like a million bucks and will draw attention when used in just about any company. Build quality of the outer body is superb as we expected it to be. Both Macbooks are incredibly slim and slimmer than any other notebook in the market, save for some 11.1-inch Sony Vaio's. Both the MB and the MB Pro have the same thickness. Of course the MB Pro looks slimmer; mainly because it's bigger. Shockingly the Macbook Pro is only 100 or

is an aspect ratio of 16:10. Frankly, Apple has got the ratio between resolution and screen size just right; the MB Pro feels just right; the desktop area is large and the icons not too small as it happens with small-sized, large resolution screens. The screen on the MB Pro is in a league of its own; it's bright, crisp and the colours are very vivid. Level of black is very good; and this display will handle images and videos excellently. Any sort of multimedia usage is a fun experience. The Macbook also has a good display; better than



so grams more than the Macbook in weight. This is absolutely amazing since it's much larger. Apple is honest and quotes weight inclusive of batteries.

Apple uses the segregated keypads (keys separated by a narrow bezel) on both Macbooks. Both notebooks' keypads exude superb feedback, not mushy and not too hard and the keys are very well spaced out. Usability-wise we could find no complaints; you will get used to this keypad very soon and love it.

The Macbook Pro has a screen size of 15.4-inches and offers a high resolution of 1440 x 900 pixels; which

nearly all notebooks in the Rs 80,000 price range. However, its miles apart from the MB Pros screen. In comparison the blackness level isn't as good; and colours seem a touch washed out; irrespective of how much you play with the display settings. The contrast ratio is good; but not in comparison to the MB Pro. Another issue with the MB's screen is the poor viewing angles; although better than most 13.3-inch notebooks it's not even close to the MB Pro. For a 13.3-inch screen the resolution of 1280 x 800 pixels seems a little less; however this is standard, so we won't

complain. If only we didn't have 15.4-inches of gorgeousness sitting next to the MB when we tested its display! Both displays are LED-lit; so they're power savers too.

The multi-touch touchpad is something Apple is advertising aggressively and it's simply a trackpad with integrated mouse button functionality; so both Macbooks have no mouse buttons. You simply click anywhere on the trackpad. While this may take a couple of days to get used to; it is extremely functional and actually faster than left

and right clicking. Finger gestures also work, as on the iPod Touch; although this does take a little bit of getting used to as initially you won't know exactly what to do with the feature. Once you get a little practice it's superb. The large surface area of the trackpad also helps.

One of the biggest inclusions (and one that eases adoption) for all those Windows lovers is the OS X 10.5 Boot Camp. You can now create a separate partition for Windows and actually run Windows XP and/or Vista alongside Leopard with the multi-boot option. Obviously Mac fans shun

Windows; but this is a clever move as OS X has been a hurdle for many Windows users to bite the Mac bullet; now they'll be able to do so in total piece of mind.

Office 2008 Mac is also out; but users of Office 2007 will immediately hate it. We wonder if Microsoft deliberately created Office 2008 Mac to annoy Mac users having migrated from Office 2007. Those who are familiar with Office 2003 won't have as much to complain about; but the software's interface isn't as good as either of the Windows versions.

Both the MB and the MB Pro come with the new Intel Core 2 Duo P series processors which are part of the new Centrino 2 platform. These CPUs support an FSB of 1066 MHz. The earlier T series CPUs supported an FSB of 800 MHz. DDR3 memory is supported

on both Macs. The MB comes with a GeForce 9400M video solution while the MB Pro comes with a 9600 GT. That's some serious video crunching power under these babies' hoods and we figure this will be enough for most diehard multimedia buffs. Although we couldn't benchmark either notebook due to OS X's incompatibility with all our benchmarks both the MB and the MB Pro are fairly responsive. Unlike most Windows PCs which have some lag when opening photos and playing videos the OS X's media player works flawlessly. The GUI is super smooth and never feels choppy unlike the GUI on Vista where icon animations and preview windows can gobble up resources. The integrated webcam offers good quality; the speakers are quite crisp and loud.

Shockingly both the MB and the MB Pro do not get hot even after an hour of regular usage; we expected the aluminium body to get warm at the very least; but this wasn't so. The bottom does get warm, but that's to be expected. The fact that your palms stay sweat free itself is a big plus; kudos to Apple's sterling design.

Battery life as measured on the MB Pro was two hours and forty five minutes; this is good for a 15.4-inch notebook. The MB does even better and crosses the magic three hour mark with three hours and four minutes of battery time. This will no doubt fall when using Windows; but that's another matter.

The Macbook is priced at Rs 72,000 for the model with the 2.0 GHz CPU and this is very competitive for a notebook that looks as good as it goes. The higher model is priced a little too high at

Rs, 89,000 or so. The MB Pro starts at Rs 1,10,000 and is a little on the expensive side; but then nothing else comes close in terms of looks and exclusiveness. Mac fans will run out and buy one; but even as a Windows user check out the new Macbook in particular; it's got a sweet price tag for what's on offer.

Specifications
Macbook Pro – 15.4-inch LED screen, CPU – Intel C2D 2.53 GHz, 4 GB DDR3 1066 MHz, 320 GB-5400rpm, GeForce 9600 GT graphics, weight – 2.5 kgs
Macbook – 13.3-inch LED screen, CPU – Intel C2D 2.4 GHz C2D, 2 GB DDR3 1066 MHz, 250 GB-5400 rpm, GeForce 9400M 256 MB DDR3, weight – 2.4 kgs (with battery)

Contact: Apple India
Phone: (65) 6480 7660
Website: www.apple.co.in
Email: malini.mitra@asia.apple.in

Canon PowerShot SX 110 IS

Much Deserved Improvements From The SX100



Canon brings in the new SX 110 IS to retire its well reputed PowerShot SX 100 IS. This new camera brings in a few new additions to the table. The SX 110 still has a 10x optical zoom.

The SX 110 IS is now a 9 MP camera and also has a slightly larger sensor. The

other big improvement is the screen size. It now has a huge and good quality three inch screen. The camera body has a slightly better feel than the SX 100. The buttons and the dial for scrolling through menus have still remained the same.

The quality of the photos is as expected from a good point-and-shoot camera. In this case, it is better than the SX 100 IS which is probably due to the slightly larger sensor. Colours are neutral. The images are sharp but in some photos, it looks like there is some amount of artificial sharpening done

by the camera. Video quality is good and the audio quality is surprising good as well.

The interface is the standard Canon one. It is simple to use and one of the interesting features is the ability to set the intensity of the flash.

The camera uses two AA batteries so it is considerably heavy. To add to the weight, the bulkier unit required to drive the larger lens. It's not a camera that can fit in easily into a shirt pocket.

The price for the Canon PowerShot SX 110 IS is set at Rs 16,995. It is clearly a costlier camera than the SX 100 IS. It still makes a decent purchase at its price. Obviously if you want a compact camera, this isn't it. If

you want a no-compromise point and shoot camera but not as bulky as the Canon SX IS, then the SX 110 IS is among the best cameras.

Specifications
Sensor: 9 MP, 10x optical zoom, 3-inch 2,30,000 colours LCD, Aperture range: f2.8 – f4.3, shutter speed range: 15 – 1/2500 seconds. Dimensions: 110.6 x 70.4 x 44.7 mm, Weight: 245 g

Contact: Canon India Private Limited
Phone: 1800-180-33-66
E-mail: info@canon.co.in
Web site: www.canon.co.in
Price: Rs 16,995

RATINGS	
Features	★★★★★
Performance	★★★★★
Build quality	★★★★★
Value for Money	★★★★★
Overall	★★★★★

Blackberry Bold

Black As Usual, But Bolder Than Before

Blackberry is what many would consider the king of smart phones. The large masses might not be impressed by their kind of phones, but these aren't made for those who want to use fancy headphones and play games and movies on them — this doesn't mean you can't. The new Blackberry Bold comes across as one of these kind of phones — the one that is made strictly for the busy manager or businessman but which will let him have some fun at the same time.

The first impression you get is that it's rich and special. The leather-like material back, the shape and of course the glowing tracer ball at the center give you that feeling. The phone is light but a little wide. It's thin at the same time so you shouldn't have any problem fitting it in your pockets. It fits into your palm comfortably as well when you want to use it.

The design of the phone is attractive even though this is supposed to be firstly a practical phone — not something to show off. The only slight problem is with opening the back to access the battery slot. Fortunately that's something you don't have to do very often. The back lit keypad like many other Blackberry devices has a QWERTY design. The keys are bevelled and banked to the sides to make typing easy. It's surprisingly very usable. The key-presses feel right and with some practice, you can get pretty fast with it. The panel between the screen and the QWERTY keypad has the dedicated buttons for picking up, dropping calls and running applications.



The trackball at the center is used to scroll around its beautiful interface. It works well but has a very fine coarseness to it — something like rolling a ball bearing on sandpaper. The body and screen are glossy and that means this phone like many others we've seen recently shows up fingerprints.

The screen is compact because of the phone's size but this is a really good looking screen. It's really dense for its size so images look absolutely amazing. The interface is simple to use and it looks exceptionally good with this kind of screen. There are loads of menus and it's a joy to spend time with each appli-

cation. Applications run very well but the booting time for the phone is considerably slower. Attention is given to every application is great and using them requires no previous experience with Blackberry phones. Applications include some trial versions of Office-replacements. There are time planners and even a few games thrown in for those long waits at the airport. Scrolling through images on the powerful screen is fun and so is watching videos.

A 3.5 mm jack will let you connect your earphones without having to use any pesky converters and adapters. Reception is good but the speaker quality isn't

as impressive. The sides are lined with buttons for volume controls and the slot for attaching external memory cards.

All the usual expected technologies on the checklist can be found on this phone — WiFi, Bluetooth and a 2 MP camera with a flash. Quality is average and using it is not a lot of fun. It shouldn't really matter a lot as this phone isn't design for taking high quality photographs anyway. Speaker quality is decent but it crackles a little bit at high volumes.

If we were to sum it all up right now, then we would say that the Blackberry Bold is impressive but only for the people who need these kind of features. For the younger crowds who want big touchscreens and loud PMP-phones, then there are cheaper options. For the busy individual who needs to be connected all the time, access information and send e-mails, this is one of the best phones to do this. It's fast, accurate and almost glitch-free. The price of Rs 34,990 is expensive but if it's something that makes life simpler for you, then it's worth every single penny.

Specifications

Screen: 480 x 320, 65,000 colours, Built-in GPS, WiFi 802.11a/b/g, Bluetooth, 2 MP camera
Dimensions: 114 x 66 x 15 mm,
Weight: 136 g

Contact: Airtel / Vodafone / Reliance
Web site: www.blackberry.com
Price: Rs 34,990

RATINGS	
Features	★★★★★
Performance	★★★★★
Build quality	★★★★★
Value for Money	★★★★★
Overall	★★★★★

Sony Vaio VGN-SR26GN

A Little Less Vaio, Same Old Sony

Sony's SR series mix performance and portability in equal proportions or so they say. The SR26GN's body is done in steel grey with silver which looks suitably suave and business-like while the top of the lid is finished in black embedded with tiny little shiny silver particles; this gives the impression of sheen on the surface which looks tasteful. The screen bezel is quite narrow which is always good and the lid itself is pretty slim; it almost seems as if this laptop uses an LED screen because of its slimmess. Build quality is strictly decent and this is a problem we feel; since Vaio's have always been amazingly well built. There seems to be a noticeable divide in the build quality of the Vaio notebooks below Rs 1 lakh and those above it; we feel this shouldn't be the case as it is a letdown from what we expect from any product wearing the Vaio moniker. With this notebook this build issue is noticeable in the area near the CD tray where there is unnecessary play and flex both in the material and the hollow where the optical drive assembly is inserted.

The trackpad is reasonably sensitive and accuracy is very good; a fingerprint login (read biometrics) device is built into the trackpad between the left and right click buttons. Overall this notebook looks expensive despite the sometimes tacky build and is quite compact for a 13.3-inch; more so than Dells XPS M1330 and Apples Macbook; which speaks volumes for Sony's design.

Well laid out keypad the button spacing on this seg-



regated keypad seems a little wider than that of the keypad on the Macbook/Macbook Pro but we didn't have any serious issue using it. The keys exude a kind of clicky feel in the beginning and the key travel is very short; feedback is positive. There's a dedicated button for switching on your WLAN and Bluetooth but by default it activates the Vaio connection wizard which allows you to choose whether to switch on or off these two connectivity options in addition to LAN and modem options. The power button is an attractive and bright green button that is built into the side of the cylindrical base; the other side of this base accommodates the charging pin. There are also five unmarked buttons on the flap below the screen; and these are configurable; although this isn't very useful as you will probably confuse them because of lack of marking.

The screen itself isn't very good and while super clear and very bright for text and surfing it is a let-

down for any kind of multimedia work because of its poor viewing angles. That being said its viewing angles are only slightly worse than the new Apple Macbook; which is similarly priced. The screen is slightly worse than the LED backlit display of the Dell XPS

M1330. Sony provides a switch called Mode; which toggles between Business, Entertainment and Private modes. These modes are simply customisable screens which can be set up with shortcut icons for common tasks; nifty but pretty useless to most people who may never use it. The icon for each of these modes is present in a small tray at the middle of the bottom part of the screen; this reminds of the Mac systems. Unfortunately there's no one touch restore button which we've come to look for in laptops in this price range and the same is achieved by a certain combination of key presses which is most annoying.

Powered by a new Intel P series processor (P8400, 2.26 GHz) the SR26GN has sufficient horsepower under the hood. 3 GB of RAM makes Vista quite snappy, while an ATI Radeon HD 3470 graphics solution with 256-MB of dedicated memory handles most multimedia tasks (except for gaming) rather easily. We tried gaming and while we were able to get a decent 66 fps in *Company Of Heroes* at a resolution of 1024 x 768 this notebook is

certainly not for gamers. However it will easily get all other tasks done snappily. The presence of an HDMI port is a nice plus; you can hook this up to large screen displays for presentations and such. The notebooks palmrest gets rather warm with usage and we although not hot enough to be of a serious concern it will lightly warm your hands; which may be a good thing or not depending on the weather.

At an MRP of Rs 74,990 the VGN-SR26GN is not a bad laptop. It has a decent screen and is quite compact. It looks classy and will do a businessman proud but then for another Rs 25,000 you can get a Vaio Z series, with a carbon fiber shell and a much better screen that has much better build quality and slightly faster components. Comparing this new Vaio to the new Apple Macbook and the Dell XPS M1330 we have to say that we'd prefer either of those two over this; though not for any serious dearth, just the overall feel of the product. It's got that *built-to-a-budget* feel which we come across in a few products and we personally like to skip them.

Specifications

Core 2 Duo P8400 (2.26 GHz), 3 GB DDR2 667 RAM, 250 GB 5400 rpm HDD, 13.3-inches, Windows Vista Business + Windows XP Prof (downgrade option), weight — 1.96 kg

Contact: Sony India
Phone: 1800-1111-88
Website: www.sony.co.in
Price: Rs 74,990

RATINGS	
Features	★★★★★
Performance	★★★★★
Build quality	★★★★★
Value for Money	★★★★★
Overall	★★★★★

Samsung Omnia

Expensive But Imperfect

The Samsung Omnia is another one of those awaited phones. In a market already flooded with Windows Mobile phones with touchscreens, the Omnia hits the Indian market all ready with the all new Windows Mobile 6.1.

The phone has a very minimalistic design, which is now more or less the norm for all touch screen phones. There are some slight appealing touches in the design, like the grooves around the camera that reflect rainbow colours and the mirror like casing around the touch screen.

There is a common port for interfacing with the computer and the headset, but this is set in the side of the phone. The stylus does not dock into the phone, but you can dangle it from the phone like an ill-attached limb if you want. The stylus is telescopic, and telescopes out almost magically when the cap is opened.

The touch screen does not respond to touch as



much as it responds to pressure — you have to press the screen to get anything done. There are some glaring mistakes — it is impossible to scroll down the playlist in the “touch player”. The on-call menu locks itself every three seconds, which means you have to press an action button and a button on the screen just to activate the speaker. The screen mode is eccentric and inconsistent. It switches from portrait to landscape at its own violation, and then misbehaves when you turn the phone to specifically change it. The

phone has a cursor feature which makes touch navigation easier.

Programs take time to load, true even for the clock or the phonebook. The start menu disappears when you close programs at times. There is a great feature that lets the phone behave as external memory for both the phone and the mem-card memory. The camera has many modes to play around with, and powerful flash that stays on for some time which helps in taking photos. The image quality is not great. There is a panorama mode restricted to 180 degrees. The photos tend to be a little overexposed, the background is focused in the portrait mode, and the camera cannot clearly focus anything closer than 3 inches to the lens even in the macro mode. The sound quality while using the headset is excellent, helped by the tunnel earplugs. There is little punch in the bass, but the other frequencies are handled well. The speaker is not too loud, and playing any song using the speaker is sounds appalling.

The phone ships with three sets of earpads for the headset, for different ear sizes. A nice touch is that the headset has a standard pin that allows you to plug in your own headphones to the device.

This is a phone for the high end market. At Rs 35,999, it's still very expensive. Buy it only if you want the flaunting features like the GPS and the 5 MP camera.

Specifications

3.2-inch touchscreen Windows Mobile 6.1 Professional, Bluetooth 2.0, Wi-Fi, 5 MP Camera, Built-in GPS

Contact: Samsung Telecommunications India
Phone: 011 - 41511234
E-mail: joydeep.r@samsung.com
Web site: <http://in.samsungmobile.com>
Price: Rs 35,999 for 24 GB and 37,999 for 32 GB

RATINGS	
Features	★★★★
Performance	★★★★
Build quality	★★★★
Value for Money	★★★
Overall	★★★★

Corsair Voyager GT 16GB

Fast Stuff But With More Cargo Space

Flash drive with higher capacities might have been around and prices might have dropped but there was always something missing — performance. The all new Corsair Voyager GT 16GT completes the empty spaces.

This drive like some of the other premium flash drives from the competition comes in a rubber body and a cap. This also makes it waterproof and shockproof. The package comes with an USB extension cable so you don't have to plug the drive at the rear of the cabinet. A

bunch of tests were run on the drive and the performance in general was pretty impressive.

SiSoft Sandra recorded a drive index score of 30MBps. Random access time was a minimal 1 ms. HD Tach recorded an average read speed of 31.1 MBps and an average write of 14.4 MBps, both of which are really good for a flash drive. The maximum burst speed was recorded at 33 MBps.

Even real world tests which we run gave similar results. A 1 GB file was copied to the drive in just a



though this is supposed to be one of the higher-end flash drives, it makes good value for money.

Specifications

Capacity: 16 GB, Dimensions: 72 x 22 x 12 mm, Weight: 16 g

Contact: Tirupati Enterprises
Phone: 9339207519
E-mail: mail@tirupati.net
Web site: www.corsair.com
Price: Rs 2,200

RATINGS	
Features	★★★★
Performance	★★★★
Build quality	★★★★
Value for Money	★★★★
Overall	★★★★

minute three seconds. A three gigabyte file could be read in 1 minute 46 seconds. Reading multiple smaller files of 3 GB was a bit slower as expected. The real hit was when multiple files were written to the drive. It took 8 minutes 59 seconds to transfer.

The price for the drive is Rs 2,200. That's not very expensive for the performance and the sturdy build quality that you get. Even

Seagate FreeAgent XTreme 1000 GB

Bigger Is Better And Now It Can Be Smaller Too!



External hard drives based generally tend to miss out on capacity or on style. It always seems like portable drives are lagging behind somewhere or the other. The Seagate FreeAgent XTreme 1000 GB is one of the most stylish drives to see the light of day. The 1 TB of space should please many.

In size, the FreeAgent XTreme 1000 GB case is fairly large but thinner than before. The drive stands vertical on a thin support plat-

form. This setup makes it very simple to pack up and carry along with you. Setting up the drive is simple. The drive with all three interfaces — USB, Firewire and eSATA.

Performance isn't shabby either. SiSoft Sandra recorded a drive index of 33 MBps and a random access time of 13ms. HDTach recorded a higher average read speed of 36 MBps. We then did a test of copying 4 GB of data using a single

file and then same with multiple smaller files. A 4 GB file could be written in two minutes thirty four seconds and copied back in a minute twenty four seconds. Writing of smaller files took two minutes forty nine seconds and reading two minutes twenty one seconds. These are very good but nowhere as close to internal desktop drives. We even tried connecting the drive using Firewire. There was only a two to three per cent improvement in performance. The drive comes built-in with software for security and also to help sync data when you use the drive on another system.

For this capacity and performance, one has to be willing to shell out a good bit of money. This terabyte monster is priced at Rs 14,500. This is a lot more

than a proper desktop hard drive. A missing feature is the network connectivity. With it, the high price tag would be better justified. Still, if you need large capacity and portable drives with some sense of style, then this drive is the right one for you.

Specifications

Capacity: 1 TB, Supports USB 2.0, eSATA, Firewire 400
Dimensions: 175 x 33.7 x 172 mm, Weight: 1.39 kg

Contact: Fortune Marketing
Phone: 022-28508995
E-mail: sales@fortune-it.com
Web site: www.seagate.com
Price: Rs 14,500

RATINGS	
Features	★★★★
Performance	★★★★
Build quality	★★★★
Value for Money	★★★
Overall	★★★★

Altec Lansing FX3022

Twin Towers Of Sound

The all new Altec Lansing FX3022 set of speakers are one of the unique designs we've come to see from speaker manufacturers. These speakers are also unique for another reason — they have down-firing woofer units at the bottom of both speakers. Altec Lansing claims that this can create double the bass in half the space. We tested these speakers to see how real these claims were.

The FX3022's look like two towers and sit on your desk. The units are glossy and have a protruding cylinder-like shape where the other driver sits behind. There are no separate woofer unit that sits on the ground. No remote controls come with this speaker set. The On / Off switch along with the volume buttons

are placed are placed on the top of one of the speakers.

We turned on the speakers to see if they were any good. The first impression is that they aren't very loud but as speakers that you keep on your desk, it's more than enough. The bass is rather disappointing as well. The down-firing bass units require a solid surface to sit on. They are best kept on the ground but then you need to be sitting at the same level to listen to them. The frequency range of these speakers starts from 40 Hz which is a little higher than most speakers. Even the higher-end range is capped to around 16,000 Hz. The



extreme low bass is non-existent in these speakers. The only bass you get is from the harder drums and that too is absorbed by the table.

The other frequencies sound alright. They don't distort at all with the volume set to maximum. The only shrill distortion can be heard with songs with high pitched vocals. The sound otherwise is very bright and detailed.

For a speaker without a dedicated subwoofer, the price of Rs 5,490 is quite a

lot. The old Altec Lansing MX5021 was a lot more powerful and better sounding set of speakers and they were priced at around Rs 6,000 to Rs 7,000. If you want something that looks out of the world and something to sit on your desk, then the FX3022's are good. Just don't expect ground rumbling power.

Specifications

Power: 25 W, Frequency range: 40 Hz to 16 KHz
Dimensions: 134 x 134 x 254mm

Contact: Rashi Peripherals
Phone: 022-67090828
E-mail: response@rptechindia.com
Web site: www.alteclansing.com
Price: Rs 5,490

RATINGS	
Features	★★★★
Performance	★★★★
Build quality	★★★★
Value for Money	★★★★
Overall	★★★★

Cooler Master Cosmos S

The New Cosmos – Now Lighter

Cooler Master has a new cabinet on their earlier case – the Cosmos. This new one is called the Cosmos S. The old Cosmos, like the Cooler Master Stacker set the standard for high-end enthusiast level cabinets. The new one seems to be an improvement over it. We look at what they've changed.

While unpacking the humongous box that it comes in, we noticed that it was a lot lighter than the previous one. It has a little more of an aggressive look but that's left to personal taste. It still has the similar design with the piping that runs along the top and bottom of the case. The side door of the case has a huge 230 mm fan. There are three other fans in the case – one on the top, back and front. A sliding dust filter



fits at the bottom where the power supply fan would normally be.

The quality is still there but it's not as great as the Stacker and the older Cosmos. The rear panels seem thinner and can be depressed by applying pressure. The side doors wobble

about little bit and the front bays are covered with a thin mesh instead of the clean

glossy panels. Those too aren't very steady. The top too has a mesh which means frequent cleaning will be required.

The top front of the case has the I/O panel. Four USB ports, two sound ports, an eSATA and a Firewire port can be accessed. There are plenty of drives that

can be put into this case. The punch-in mechanism makes it easy to remove and add drives.

The new Cosmos S is more like a standard Cosmos built to a budget. The updated look will grab a lot of attention but with enthusiast cases, it has to

also be about flawless quality. That's something the Cosmos S has lost in the bargain. It's more a concern because the price of this case is still very high at Rs 14,500.

Specifications

Seven 5.25-inch bays, Four 3.5-inch bays, seven expansion slots, 3 x 120 mm fans, 1 230mm fan, Dimensions: 266 x 598 x 628mm, Weight: 13.8 kg

Contact: Cooler Master
Phone: 9833870302
E-mail: Tanmay.L@Coolermaster.com
Web site: www.coolermaster.com
Price: Rs 14,500

RATINGS	
Features	★★★★
Performance	★★★★
Build quality	★★★★
Value for Money	★★★★
Overall	★★★★

Canon PowerShot A1000 IS

PowerShot Loses Weight And Some Features



The camera is compact with a bulging right side where the batteries lie. The camera uses AA batteries so it is as expected a tad heavier than Lithium-ion powered cameras of the same size. The feel of body is okay but it is a rigid camera that can take a battering. The buttons are simple but firm and don't have the spongy-

soft feel you find in some camera.

The screen is pretty bad – the colours are dull and the viewing angles are very poor, so using it isn't all that much fun. There is also some delay which gets worse when

you zoom into a target.

The interface is clean and simple to use. Most of it is due to lack of some features. The camera doesn't have a shutter and aperture priority setting. Manual focus is absent too.

The area around the batteries gets warm but not as much as the SX 110 IS that we looked at this month.

The flash is mounted on the extreme top-left of the camera. If you

have a habit of holding a camera at both ends, then you are bound to cover the flash at least a little bit.

Image quality isn't grainy as such, but the images aren't sharp either, even with the ISO option set to as slow as 80. The images have an artificial glow to them as well. When photos are taken against bright light, the light measuring doesn't work very well and you end up with a photo with extreme contrast levels. Summing up, image quality is average.

The Canon PowerShot A1000 IS is cheaper than the other Canon cameras from the PowerShot series at Rs 11,995. It's nothing impressive and the lack of

some advanced features means people who want to develop some photography skills are not going to enjoy using it. Users who want a simple point and shoot camera, click the odd photo might find it usable.

Specifications

10 MP sensor, 4x optical zoom, 2.5-inch screen, ISO Range: 80 to 1600
Dimensions: 95.4 x 62.4 x 31.0 mm, Weight: 155 g

Contact: Canon India Private Ltd
Phone: 1800-180-33-66
E-mail: info@canon.co.in
Web site: www.canon.co.in
Price: Rs 11,995

RATINGS	
Features	★★★★
Performance	★★★★
Build quality	★★★★
Value for Money	★★★★
Overall	★★★★

Satguide GPS Logger

Tiny Tracker

Interest in GPS receivers and handheld devices has only picked up recently in India. Mobile phones with inbuilt GPS receivers are the reason for this interest. They are expensive and people without these phones have no scope of getting a GPS feature on their phone.

GPS receivers like the Satguide GPS Logger come to fulfil this requirement. The GPS Logger is a USB GPS receiver that fits into a battery pack which is used to power it. This device can be plugged into a laptop and be used as a GPS receiver. It can also be used as a Bluetooth GPS receiver which means you can connect your phone to it wirelessly.



The most important feature of the Satguide GPS Logger is its ability to store co-ordinates without even connecting to a PC, laptop or even a mobile phone. For this, the device requires to be connected to a PC or laptop and the options set for it. There are some customisations and

the frequency of recording co-ordinates. The software is very basic and not the

simplest to use. Co-ordinates can be exported as CSV (comma separated values) or KML. KML is used

widely by Google Earth and is good free complimenting software.

As for performance, the device works perfectly fine if put in a shirt pocket or on a dashboard of a vehicle. If the refresh rates and others settings haven't been loaded properly, then the accuracy reduces drastically.

The ability to store coordinates without any kind of computing power of a laptop or a cell phone is an excellent feature but not enough to justify a hefty price of Rs 7,000. For

people who want GPS tracking, then this is one of the few products to come across. If it's just a GPS receiver for your PC or phone, then a simple Bluetooth receiver can be bought for much less.

Specifications

SiRF Star III chipset, Class 2 Bluetooth, Dimensions: 72 x 21 x 13.5 mm (Dongle)

Contact: SatNav Technologies
Phone: 040-66777333
E-mail: satguide@satnavtech.com
Web site: www.satguide.in
Price: Rs 7,000

RATINGS	
Features	★★★★
Performance	★★★★
Build quality	★★★★
Value for Money	★★★★
Overall	★★★★

Philips GoGear 5245

Flash PMP Sans Flair

This 4 GB PMP is slightly thicker than an iPod Touch and looks decent with a black glossy finish to it. It's a device with curved edges having the headphone and mini USB connections at the bottom. The buttons are placed on the right of the screen with volume controls on top of the device, so if you are holding it you can control the device with your thumb and the volume with your index finger.

The PMP is very easy to use and has uncomplicated menus and settings. There are 3 skins you can choose from to enhance your viewing pleasure. The earbuds supplied with the player have a decent sound quality. We noticed the bass was strong, but unfocused and the mid-range is largely recessed. A good set of head-



phones would increase the sound experience greatly.

The inbuilt FM radio can hold 20 preset channels. There is also a voice recorder feature. Files are saved in WAV.

A drawback we found in this player was that it does not support WAV, but when auto-sync is on, WAV music is added to the device, which causes the player to hang.

Video conversion and upload software is provided with the driver CD. The viewing screen is a 2.8-inch LCD with a glossy finish to it and the video resolution is QVGA

320x240. There is no change in the viewing angles of this player in comparison to any others: If the light is minimal and the player is close to you it won't make a difference, but if you are sitting next to a window, expect glare to interfere.

A good feature is that if you are watching a video or listening to a song and shut down the player midway, playback resumes from when you last stopped.

Another feature of this PMP is Bluetooth. You can now transfer songs, videos, pictures, etc via Bluetooth.

This device also supports A2DP. One thing to be cautious about this is that mono headsets will not work.

This device has nothing very outstanding about it, and is not really worth the Rs 8,499 price tag.

Specifications

Formats supported: MP3, WMA, AAC, WMV, MPEG4
Screen: 2.8inch QVGA 320x240 resolution.

Contact: Philips Electronics India Ltd.
Phone: 0124-4311111
E-mail: sanjeev.nimkar@philips.com
Web site: http://consumer.philips.com
Price: Rs 8,499

RATINGS	
Features	★★★★
Performance	★★★★
Build quality	★★★★
Value for Money	★★★★
Overall	★★★★

Never Forget

Most of us don't pay much attention to the RAM we buy – big mistake!

Memory is one component that has seen an alarming surge in its use over the past two years. Applications have suddenly become memory intensive and a couple of years back you could get along fine with 512 MB of RAM; these days we're seeing even PCs equipped with 1 GB of RAM staggering to meet requirements. Inside your PC, RAM is one of the most important components besides your processor and graphics solution. In fact in many cases RAM is as important as your CPU, simply because the fastest CPU coupled with a meagre amount of RAM will end by bottlenecking performance.

For a reasonably mid-range computer, a simple upgrade to the memory subsystem, say an upping of system RAM from 1 GB to 2 GB, could see an increase in performance of more than 40 per cent in some cases, although this largely depends on the application being used. If you already have a Core 2 Duo processor in the speed range of 2.4 GHz and one GB of RAM, you are better off upgrading to two GB of RAM, rather than changing over to a 3.0 GHz Core 2 Duo. Obviously you would get a performance hike in both cases but in the case of upgrading your RAM this would be more pronounced.

DDR SD RAM is history and has been for some time. DDR2 memory is the norm these days and prices have dropped dramatically. In fact DDR2 RAM is so cheap that you can pick up a four GB kit for a ridiculous amount. Earlier DDR2 533 MHz and 667 MHz was the norm; but you would be hard pressed to find either in the market today. DDR2 800 MHz memory is what is the norm for desktops today and this is widely available. DDR2 1066 MHz memory is still reserved for enthusiasts, although two and four GB kits are available. A two GB kit of DDR2 1066 MHz memory is available for Rs 8,000 to Rs 10,000 from brands like Corsair, Kingston, OCZ and Transcend. 1 GB of DDR2 800 MHz memory costs approxi-

mately Rs 1,000, which means a 4 GB, dual channel kit would cost you Rs 4,000. You may pay a little extra for higher density 2 GB sticks, and a 2 x 2 GB, DDR2 800 MHz configuration would come to Rs 4,500. The four above mentioned brands are the biggest players in India, although brands like GSkill and AData are also available from certain vendors.

From the prices it would seem now's the time to swoop in and swallow a four GB kit. Normally it would be, but there's one problem looming ahead; Intel, with its considerable sway in the way of things with desktop computers has decided to move to DDR3 for its new platform based around the upcoming Nehalem processors. This is an important consideration even if you

do not plan to adopt Nehalem straightaway because this is exactly what happened to DDR memory. Intel decided that DDR2 would benefit performance on Intel based systems more than DDR, and despite AMD's protests, DDR had to go. As of now, both the latest Phenom and Yorkfield processors from AMD and Intel (respectively) support DDR2 but if Nehalem picks up sales within the next six months, the price of DDR2 could rise with it; owing to scarcity as manufacturers stop making it.

Now you're faced with an interesting dilemma. Do you stock up on DDR2 now, in the hope that your PC will last for another two to three years without needing DDR3? Or do you spend big and invest in DDR3 right now, and wait for Nehalem platforms and CPUs to become more affordable? DDR3 is costly right now; and a 4 GB kit of 1,333 MHz DDR3 could easily set you back by Rs 15,000 or so. Faster kits in the range of 1,600 MHz are available from Corsair, OCZ and Kingston, but such kits cost in excess of Rs 20,000. With the way memory is being used, it also doesn't make sense to buy 2 GB anymore, as 64-bit operating systems are the future and these will need at least 4 GB. Also DDR3 shows performance increments over fast DDR2 at speeds of 1,600 MHz and greater; this is because DDR3 is plagued with higher latencies at lower speeds.

My advice is to wait. If you have a Core 2 Duo, or AMD Phenom based PC with 2 GB of memory, hold your horses for another six months. Samsung, Hynix and Qimonda have promised DDR3 2000 and DDR3 2200 MHz memory, which will mean slower clocked memory will become cheaper next year. Do not buy 4 GB of DDR2 today, unless you're sure you will not adopt Nehalem or any other new DDR3 based platform for another 18 months. Only if you absolutely cannot wait and have a budget should you buy DDR3 now. Six months down the line, prices may halve and make your costly investment seem worthless. ☐

agent001@thinkdigit.com



Shrikishna Patkar

Q Can you suggest a great PC configuration? I want to render 3D in addition to using Flash. My budget is Rs 70-80k.

Sanimani

 For rendering, your CPU is going to be the most important component, followed by your memory. With such a budget you can also get a good gaming experience. Here are my suggestions:

PC Configuration		
Component	Recommendation	Price (Rs)
Processor	Intel Core 2 Q9550 (2.83 GHz)	17,900
Motherboard	ASUS P5K-E	8,500
RAM	Corsair 2 x 2 GB DDR2 800 MHz	4,200
Graphics Card	ZOTAC GeForce 9800GTX+	11,500
HDD	Seagate 7200.11 500 GB x 2	7,000
Optical Drive	LG H55n	1,300
Monitor	Dell E228 WFP	13,000
Cabinet	Cooler Master 690	3,600
SMPS	Corsair TX 650	6,000
	Total	73,000

Q I would like to buy a new PMP from either Sony, Creative or Apple. Please suggest the best in sound quality, battery life, after sale service. With Apple the battery cannot be changed and service is a problem. Is there any problem with the other two? I presently have a Sony Walkman MP3 player nw-s203F. Minimum Capacity 4 GB. Budget Rs 10,000.

Shidhartha

 I recommend Apple's new Nano. Although Apple's battery cannot be changed by you, it can be changed at any Apple store or genuine dealer. Service is also not an issue. The Nanos are superbly built, have great music quality and come in sizes of 8 and 16 GB. The 8 GB version should cost you Rs 8,000.

Q My brother-in-law is an architect by profession. His work includes creating walkthroughs of different projects for multiplex, supermarkets, townships, etc. He has to render 3D videos at 720p for as long as an hour with 3DS Max, which takes more than 24 hours to render to video in client server configuration on Intel Q6600 client machines. Please suggest better Client Server configuration with best rendering methodology. If possible suggest a good render farm with detailed configuration.

Neeraj

 Hi, you mention Intel Q6600 client machines. How many such machines are you using for your current render? The Q6600 is a fine CPU, but you need multiple

machines. If you're using two machines, use six, and so on. This is the only way to reduce your render time. The Intel Q9550 CPU is a faster alternative to the Q6600. It has 12 MB of L2 cache (the Q6600 has 8 MB), and works at a faster clock speed of 2.83 GHz. This CPU costs Rs 17,900 per piece. The Q9650 (3.0 GHz) is also available, for Rs 26,000, but this is not worth it for the huge price difference. Base your machines around the Q9550 CPUs. There is no CPU that will do this in one or two hours, so parallelism is your only alternative. I also recommend 4 GB of RAM per system you use, go with 2 x 2 GB sticks of 800 MHz memory. For the hard drives go with a Seagate 500 GB with 32 MB cache.

Q My configuration: 2.0 GHz dual-core, 2 GB RAM and 250 GB space. Please tell me which card to buy so that I can run the latest games at high-resolution. My budget is Rs 10,000. Also, is there any difference between 9800 GTS and 8800 GTS in performance. Also suggests good latest motherboard that can support the card. My budget is Rs 4,000.

Rajat Baliyan

 I recommend ZOTAC's GeForce 9800 GTX. This card was our Best Buy and Best Performance winner in October. It's superbly priced at Rs 10,555 (MRP), although you might be able to get it for a bit less on the street.

Q I am planning to buy a laptop costing around Rs 55,000. I prefer a 13.3-inch or a maximum screen size of 14.1 inches. I am interested in Sony Vaio CS & CR series. Also I am looking for Dell XPS M1330, but this is costly for me, because of the NVIDIA graphics. How is the ATI graphics card which is in the Vaio? Help me to choose from these models. What is the advantage of Centrino 2 processors?

Favas Mohammad

 First of all, Centrino and Centrino 2 isn't a CPU, it's a set of technologies that are combined under one umbrella — Centrino. It includes the CPU itself, the motherboard and the wireless solution. If a notebook has all these technologies according to Intel's specifications it can use the Centrino logo. Centrino 2 is code-named "Montevina" and supports 45nm Penryn CPUs. Why not HPs DV3005TX? It has an 8400 GS graphics solution and a T5550 (1.83 GHz) CPU, all for Rs 55,000. Dell's XPS M1330 is a good buy for the price — it has great components too. Sony's Vaio's are just out of your price range, the 14.1-inch ones with discrete graphics solutions start at Rs 65,000. The 13.3-inch notebooks are a little costlier, around the Rs 75K mark. ☒

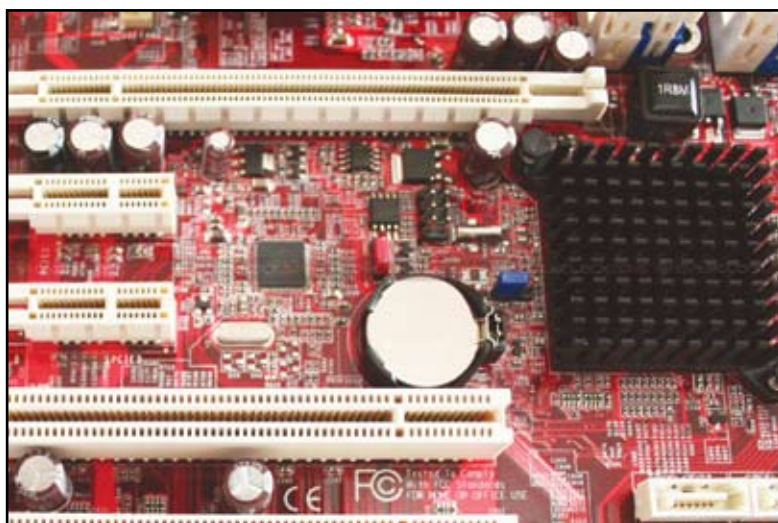


Ask Away!

Want a tech product, but don't know how to go about buying it? E-mail agent001@thinkdigit.com with your complete contact details, and he might answer them here! Please note that Agent001 only answers purchase-related questions in this space.



BIOS Settings Keep Disappearing



Q I use a computer running an Intel Celeron 1.70 GHz processor with 384 MB of memory, an Intel i845GV-W83627 motherboard and a 160 GB HDD. It uses the Intel 82845G onboard graphics processor. I assembled this computer back in 2002. I have had a problem for quite some time now. When I boot my PC, it shows these errors: CMOS checksum error - Defaults Loaded Warning! CPU has been changed. Please re-enter CPU settings in the CMOS setup and remember to save before quitting.

Even entering the BIOS settings and changing the system date and time does not help. When I boot it, the same warning message is displayed again. Due to this my system date and time is always displayed as Jan 01, 2002 12:01AM. Can this problem be solved at all?

Get Help Now!

E-mail us your computing problems along with your contact details and complete system configuration to sos@thinkdigit.com, and we might answer them here! Since we get many more mails per day than we can handle, it may take some time for your query to be answered. Rest assured, we are listening!

I have one more problem. With such a system configuration, I don't find any good games working on my system. Can you suggest some good games which will run fine on my system? GTA San Andreas works with my system.

Amit Singh

A The first thing to try is to get into the BIOS and then set the default settings and reboot. Next, set all the setting in BIOS as you wish, save them and reboot again. If the settings gets resettled, then the CMOS battery has most likely given up and it needs to be replaced. There are plenty of games that can be played on your system. If you like GTA San Andreas, then make sure you play the previous GTA titles. Games like *Counter Strike*, *Quake 3* and *Warcraft 3* should also run fine. Games like these have great multiplayer support and are played even today. You will need a decent internet connection for these to work well online. If you like playing lots of games, then you should seriously consider a new system. There have been plenty of improvements that have come in the past few years.

HD Trailers Don't Play

Q The HD trailers that you provide are always superb. When I try to play them in Media Player Classic or Windows Media Player, my whole screen becomes black and some four to eight seconds screens later, an error occurs. Is there any solution for this. Please help me. Don't make me sad!

My PC Configuration is as follows:

Processor: Intel Celeron D 2.40GHz

Motherboard: Gigabyte 8I845GVMR2

Hard Disk: Seagate 40GB ST340015A Ultra ATA

RAM: 760MB DDR1

OS: MS WINDOWS XP SP 2

LG DVD Writer & Samsung DVD ROM

I have no discrete graphic card.

M Girish N Pai

A The problem you are facing might be due to the outdated graphics solution on your motherboard. For HD videos of 720p resolutions and above to run smoothly, a low-end dual core system with sufficient amount of RAM is required. A graphics card with HD video decoding capabilities on a slower PC will do as well. In your case, the onboard graphics solution isn't able to run the videos and the rest of the configuration doesn't help either. You can try updating the drivers for the motherboard from the manufacturer's site or from Intel's site. Also try using some players like VideoLAN (VLC) to see if they are able to run it without crashing. If you like to watch HD video content, you should seriously consider upgrading to a system with a superior configuration.

USB Flash Drive And Viruses!

Q My name is Kharthigeyan. I use Windows XP SP3. Recently I accessed a pen drive without scanning it with my antivirus. My system was immediately infected by a virus. I soon found out that in the Explorer Folder Options, the Show Hidden Files radio button and Hide protected operating system files checkboxes stopped functioning. All the other Windows applications – Task Manager, gpedit.msc, regedit and command prompt still work properly. My system configuration is Windows XP SP3, 1 GB RAM, 1.83 GHz processor 80 GB Hard Disk. Please suggest some programs and tips that can help me to avoid these kinds of problems in future.

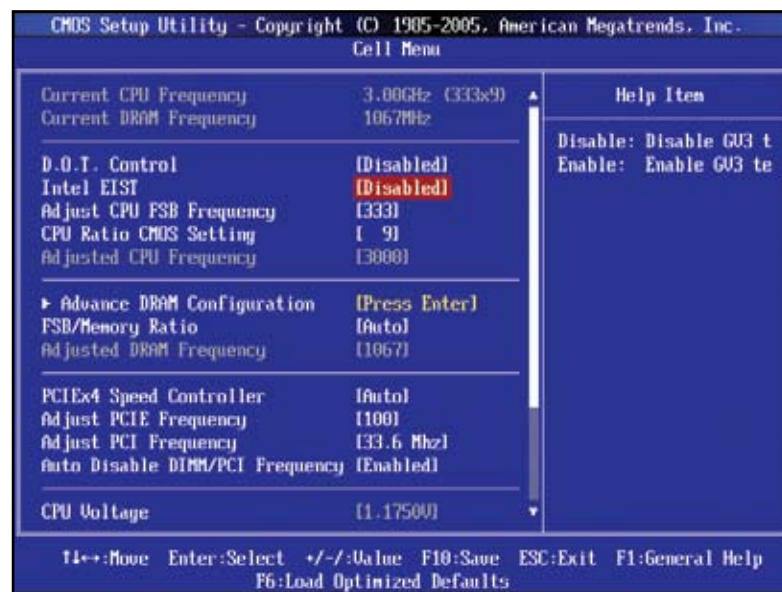
Kharthigeyan



A Antivirus software isn't foolproof and alone cannot stop viruses and worms. There are a few things that can be done by the user. Avoid downloading files from unknown suspicious sites. Auto-running flash drives is one of the quickest way to activate a virus from an infected flash drive. Close the Autorun window when you are faced with one. Instead, open the flash drive directly by accessing its drive letter from the Start > Run window or through Windows Explorer. Placing a write-protected folder named AUTORUN.INF in your flash drive can also help prevent some of the usual flash drive infecting viruses from re-entering your drive. Keeping the antivirus updated at all times can also help prevent viruses from entering your system.

Incorrect Processor Speed Causes Problems With Games And Software

Q I have an Intel Core 2 Duo E6300 core (1.86 GHz) processor. My processor speed shows up as 1.40 GHz instead of 1.83 GHz. Due to this, I am unable to run the game Need for Speed Carbon. My CPU doesn't even complete the minimum requirements for MS Visual Studio 2008 Express Edition. Please help me with my problem.



A Almost all motherboards and processors come with features to automatically under-clock the processor to save power and to help maintain lower temperatures when the total power of the processor is not required. This throttling can be disabled from the BIOS. Look for a feature called Intel SpeedStep or EIST. Disable this and the processor should run at its default speeds. The games and other software should install without any problems.

Flash Drive Loses Data

Q I have had a 1 GB Amkette Ergo S Series USB device pen drive since October 2006 which I've been using regularly. For sometime, I have been facing a problem with this pen drive. Whenever I insert it into the USB port, I am told that the drives requires formatting. When I format it and copy data onto the pen drive, the data gets transferred into the drive successfully. When I eject it from the port and re-insert it, then the formatting error pops up again and I lose all my copied data. My computer configuration is Intel D101GGC motherboard Intel Pentium 4 processor - 20 GHz Symtronix 512 MB RAM 80 GB Seagate 7200 rpm HDD Happy Deepawali to you and your team

Ritesh Kumar

A The problem you are facing lies with the pen drive. Try doing a standard format instead of a Quick Format. You can try the flash drive on another computer to see if the problem occurs there. If you have been using your flash drive a lot, then there is a good chance that it is corrupted. Although repair or replacement seems impossible now, the good news is that prices for USB flash drives have crashed. A 4 GB pen drive for example can be bought for as little as Rs= 500.

Odd regsvr.exe Error On Startup..

Q I went through your September issue of Digit magazine. I'm very eager to learn what's causing this problem I have. After logging in to my Windows user account, in the desktop the following message box appears - "Windows cannot find regsvr.exe. Make sure you typed the name correctly and then try again. To search for a file click start button and then click start." When I search for the

file, it seems there is no such file is available in the system but regsvr32.exe is available My system configuration is: Intel Celeron CPU 1.70 GHz, 352 MB RAM Microsoft Windows XP Professional, Service Pack 2

K.R.Dhananjeyan

A You have a virus on your computer. You will also find files AUTORUN.INF in the root of all partitions and drives. Folders will also be visible as executable files. The virus can also be removed manually by deleting the .INF files from the roots of the partitions and drives. Entries to the virus will also be removed from the Windows Registry. The executable files showing up with folder names will also have to be removed. The simplest way would be to install an antivirus such as Trend Micro Antivirus to clean out the virus.

Do All Processors Support 64-bit Processing?

Q Hi, I am a regular reader of Digit magazine and would like to ask you a very important set of questions.

1. In every issue you recommend a PC configuration for hardcore gamers or for 3D rendering purposes, like Core 2 Duo (3.0 GHz) or he Quad Core (2.4 GHz). Are these two processors 32-bit or 64-bit?
2. I want a configuration for 3D rendering and gaming purposes. Also suggest whether to use 32- or 64-bit processors and operating system. Budget is no problem, but it should be good in respect of performance and durability.

Kamlesh

A All of the processors today are 64-bit. Intel processors are generally denoted as EM64T. Both the Core 2 Duo and the Core 2 Quad are 64-bit processors. For 3D rendering purposes, go for a quad core processor. For gaming, a higher core speed is more important than the number of cores.

A Q6600 is a really inexpensive processor these days and the Core 2 Duo E8400 or the E8500 are good dual-core processors to go for. 64-bit operating systems and 64-bit applications will be a little faster than 32-bit. The complete 4 GB of RAM will only be used on 64-bit operating systems.

The ASUS P5Q-E motherboard is a great Intel P45 based motherboard for most users. For games, a GeForce 9800GTX from ZOTAC will make good sense. The Palit Radeon 4850 card is also a good option in the same price bracket. A WD 6400AAKS 640 GB hard drive will go well with your configuration.



Is Changing Application Priority In Task Manager Harmful?

Q When looking at the Windows Task Manager, in the process tab there is a column for Image Name. When I right-click on this column, I get the option of setting a priority. Is it okay to change the priority to High, Low or Medium depending upon the application you are working on or will it corrupt my system? In case I'm using an application and at the same time there are other applications like download managers and antivirus, all running in the background. Can I set the Priority to high to the application I am currently working on? Will it hinder the working of the computer?

A It will not hinder the performance of your computer. You can set a high priority to any application you wish.

Aditya (TECH QNA Expert)

Can Files In The System Recovery Folder Be Viruses?

Q My antivirus software recently scanned my computer and I got a pop-up warning saying that it had found a virus. I am not completely sure if it is a virus. Moreover, the antivirus did not mention what type of virus it is. This is the message it showed me:

New! Full Featured ThinClient System
Highly Efficient ThinClient Embedded OS

Enjoy Embedded ThinClient OS
- Linux / WinXP / WinCE

Server Support
- RDP 4.0, RDP 5.x, RDP 6.x, Citrix, X11, Tarentella, NX, REXEC, VNC Client, Full Screen DOS, Novell DOS

Local Application
- Open Office Suite, Email Client (Thunderbird), Web Browser (Firefox), Media Player (Audio / Video), PDF Reader, Messengers, Skype.

Enjay Network Solutions web: www.enjayworld.com | email: info@enjayworld.com
Phone: 0260-3251732, 3241732, 3203400, 2785124 | 09898007650, 09377107650



Infected: riskware not-a-virus: PSWTool.Win32.RAS.g was found in "e:\system volume information_restore{22ccb5ec-88b6-4a77-a851-c1f97848e111}\rp11\ao007660.exe"

The size of the file was 266 KB. Is this a virus and should I delete it? Or is it not a virus and something related to the operating system?

A Yes it's malware. Try to fix it using an antivirus program, if possible. If it does not, then delete it. The VOLUME INFORMATION folder is your Restore point folder, so there is nothing to worry about.

Danish Chopra (TECH QNA Expert)

Lost My Recovery Data, What Do I Do Now?

Q Hi, I am a student and I have been a regular reader of Digit. I want to know about the hidden partition used for recovery purposes found in laptops from Compaq, Lenovo and Acer. Manufacturers store a backup of Windows and all drivers in this partition. I have a Lenovo laptop. When I installed XP on my system, I mistakenly deleted a partition name EISA of size 13 GB. Can you tell me how to create this partition again? Please help!

A Unfortunately you cannot recover this data properly. Once deleted, the data and the partition are gone. This partition contains the recovery information which is used for reinstalling Windows XP. Now that you have already installed XP using a CD, you do not need that partition. You should however download all the drivers from the Lenovo site and store them on some CD or DVD so you can then use the next time you need to reinstall or otherwise as required.

Ramik Sadana (TECH QNA Expert)

Compatibility Issues With .NET 2.0 And .NET 3.0?

Q I have developed one Windows application in .NET 3.5 using VB.Net. I am using MS Access as a backend for a database. I want to deploy the application on my customer's system. The issue is that it is already running .NET Framework 2.0. The OS running on the customer machine is Windows XP Professional. The .NET Framework 2.0 is installed on the customer machine as the customer has another Web application using it. The customer says that he doesn't want to uninstall the application and the framework. What do I have to do now? Please help me.

A .NET 2.0 applications are compatible with .NET 3.5. As such, any new installation will simply build upon the existing installation, modifying the original libraries if need be or adding new ones. You just need to install the

new framework on the machine. <http://www.microsoft.com/downloads/details.aspx?FamilyID=ab99342f-5d1a-413d-8319-81da479ab0d7&displaylang=en>

Alternatively, you could try writing the application again for .NET v2.0. Doing this maybe a little troublesome, but since you have your client's request at your end, there's nothing much you can do. I'm hoping that you're not using too much functionality of version 3.5 which are not present in 2.0.

Ramik Sadana (TECH QNA Expert)

Is The File boot.com Corrupted?

Q Whenever I try accessing a partition on my hard drive using My Computer, an error appears "c:\resycled\boot.com is not a valid Win32 application". What is this?

A If you are familiar with DOS commands, then start a DOS command prompt. Locate and delete the Autorun.inf files from all the partitions on your hard drives. Restart the computer when done.

The other way is to press [Windows] + [E] on the keyboard. This will open Windows Explorer with the left pane folder option. Select one of the partitions. If you see the hidden files, then just delete Autorun.inf file and restart your computer. If hidden files are disabled, click on Tools > Folder Options and enable Show hidden files. Check hidden system and protected hidden files and also uncheck the box to hide file extensions.

Jagdeep Virdi (TECH QNA Expert)

How Do I Enable Wi-Fi On My New P3400 Phone?

Q I bought a new HTC Gene P3400i running Windows Mobile 6. The default configuration shows that Wi-Fi is not there. Is it possible to download Wi-Fi software and then try to connect wirelessly to hotspots?

It is possible for me to connect a PDA to the internet using Wi-Fi connectivity by downloading software from the Internet, which will detect any Wireless Internet connections. Please reply.

Rohit Singh

A Rohit, the HTC P3400i doesn't have inbuilt WiFi. WiFi is not software so you can't download it and run it from your mobile. There is one solution for you.

Wi-Fi SD memory cards are available in the market. These have both memory as well as Wi-Fi built-in. You can put such cards into the SD slot provided and your mobile will be WiFi ready. More details can be found using Google.





SECRETS THAT KEEP YOU AHEAD IN THE RACE

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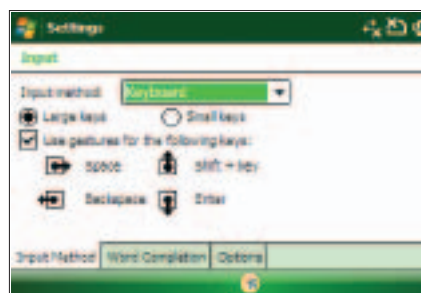
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Windows Mobile

Windows Mobile is the operating system of choice for many mobile phones. To clear the ambiguity, Windows Mobile phones with a touch screen are Pocket PCs and phones without a touch screen are Smart Phones. Most of these tips work for both Pocket PCs as well as Smart Phones, but some require a touch screen and stylus.

Use Finger Gestures For Typing

Go to Settings > Input > Input method and change the input method from the default setting to Keyboard setting. Next, select the Large keys radio button, and check



Using finger gestures for typing

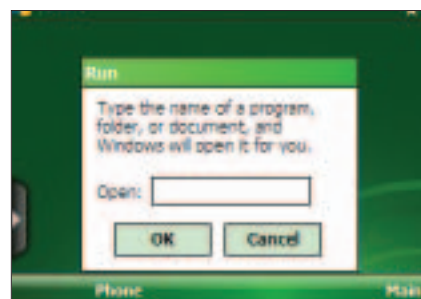
Use gestures for the following keys: This allows you to use gestures with your fingers while inputting text. Drag your finger across the screen to the right to input a space, drag your finger to the left to delete a character, drag it upwards to capitalise the next letter, and drag it downwards for Enter.

View Hidden And System Files

To view all files while exploring your pocket PC, go to the file explorer, then hold the stylus against an empty space. When the context menu pops up, check Show All Files. If there is no space below the list of files in the explorer, navigate to a folder with a few files to do this. The settings will be applied to the entire file system.

Access The Run Command

You can run a program in Windows Mobile, similar to the run command in the desktop Windows OS. To access the command, press and hold the Menu Button, or the Command 1



The Run Command on Windows Mobile

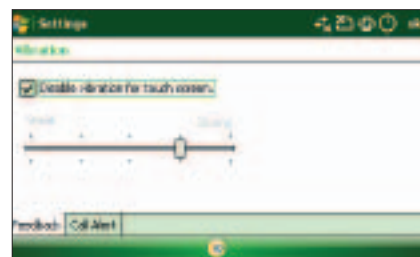
button, while simultaneously pressing the battery meter in the display. In some phones, instead of the battery meter, there is a clock. Make sure that you use this feature only in the portrait mode. If you use it in the landscape mode, the keyboard will overlap the run command box itself, and you will never be able to execute the command.

Turn On ClearType

ClearType renders the fonts in such a way that the edge of the text is smooth and not harsh and jagged. This makes the text on the phone clearer, and easier to read. If ClearType is not enabled by default in your device, to turn on the feature, go to Start > Settings navigate to the System tab and select Screen. Navigate to the ClearType tab, and check Enable ClearType.

Increase The Vibration Strength

If you feel that the default vibration in the phone is too weak, you can increase the strength of the vibration. To do this, go to Start > Settings under the Personal tab select Vibration. There are five grades of strength available for the vibration, use the slider to set an appropriate strength.



Increasing the vibration strength

Turn Off Automatic Orientation

If your phone has any kind of motion sensor, it is likely that by default the screen is going to switch from portrait to landscape mode at its own violation. This can be irritating and distracting, to turn off this feature go to Start > Settings under the System tab select Motion Sensor. Under Auto orientation select Manual. If you like the auto rotate feature, you can increase the sensitivity from the slider here or use a vibration alert for every re-orientation of the screen.



Turning off Auto orientation

Use A Larger Display

If the text on the menus and the icons are too small or you have trouble recognising them, you can increase the size of the display. Go to Start > Settings under the System tab, select Large display and check the Use large Start Menu check box.

Connect To A PC Without ActiveSync

If you have to connect your phone to a computer that does not have access to the Internet or ActiveSync installed, then there is a useful little feature that lets your phone behave like a USB drive. Go to Start > Settings. Under the Connections tab, select USB Connection Mode and change the mode from ActiveSync to Mass storage. When you plug in your phone to a computer, it behaves like external storage. You can choose to connect either the phone memory or the memory card in this manner.

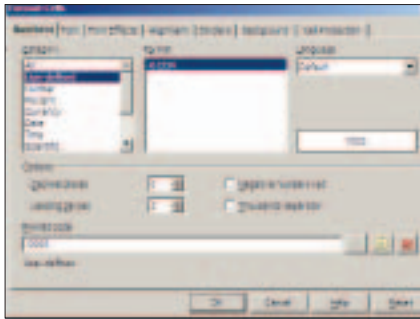
OpenOffice.org 3.0

OpenOffice.org 3.0 is a fully featured office suite. The suite is designed to completely fulfil the needs of working in most office environments. It consists of a database management program called Base, a vector-based drawing environment called Draw, a presentation program called Impress, a spreadsheet program called Calc, a scientific calculator called Math and a word processor called Writer. Here are some of the finer aspects of Calc, Impress and Writer.

Calc

Work With Numbers Beginning With Zero

By default, spreadsheet applications convert entries like 042 to 42. Leading zeros in numbers are used in many places, a simple example being serial numbers. To



Beginning numbers with a zero

insert a number that begins with a zero, just type ['] before the number. Entering '042 will convert it to 042. The apostrophe does not show in the spreadsheet. This method cannot be used for calculable figures. To do this, select the cells you want to insert the numbers in, then go to Format > Cells > Numbers. Under Category, select User-defined. In the Format code field, enter "'00". This will add a zero before every number. The program will append the number with as many zeros as you enter after '\0'. For example, using "'0000" in the Format code field, and then entering "21" will show up as "0021" in the cell.

Freeze Headers

To freeze headers while working with large documents, select the column to the right, or the row just below the row you want frozen, and check Window > Freeze. To unfreeze the frozen area, uncheck Window > Freeze. Selecting a single cell with this option will freeze all rows above the cell, and all columns to the left of the cell. It is not possible to freeze two separate areas simultaneously. To freeze headers while printing a document, go to Format > Print Ranges > Edit. Click on the Rows to Repeat icon, then select the rows with the cursor. A red rectangle will be drawn on the rows. To repeat columns, click on the Columns to Repeat icon and select the columns. To enter the code manually, type in "\$1:\$2" to repeat the first three rows or "\$1:\$3" to repeat the first two rows and so on. For columns, use "\$A:\$B".

Add Notes To Cells

To add notes to individual cells, select the cell, then go to Insert > Notes. A yellow field will appear where you can type in your text. Drag the nodes of the field to resize or reposition the note. Every cell with a note will have a small red square on the top right corner. The note will be visible when the mouse hovers over this square. Alternatively, you can right-click on the cell and select Insert Note in the menu. To edit the note, go to Insert > Notes again. To show the note permanently while editing other cells, right-click on the cell with the note and check Show Note. The note will be visible till you right-click and deselect Show Note. Double-click on the note in this view to edit it.

Shortcut Keys For Calc

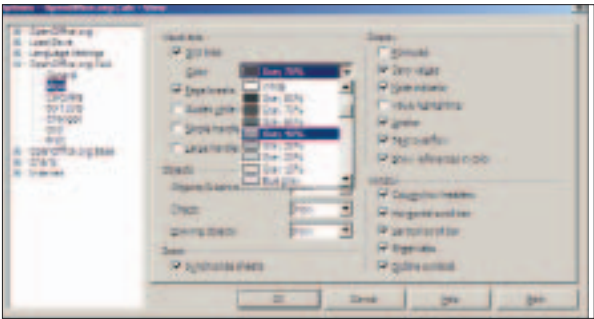
Effect	Shortcut keys
Displays note	[Ctrl]+[F1]
Opens Function Wizard	[Ctrl]+[F2]
Formula Input line	[Shift]+[Ctrl]+[F2]
Define Names	[Ctrl]+[F3]
Toggle DB explorer	[F4]
Rearrange references	[Shift]+[F4]
Toggle Navigator	[F5]
Traces dependents	[Shift]+[F5]
Traces precedents	[Ctrl]+[F5]
Sheet area input	[Shift]+[Ctrl]+[F5]
Check spelling	[F7]
Opens Thesaurus	[Ctrl]+[F7]
Toggle additional selection mode	[F8]
Highlight cells containing values.	[Ctrl]+[F8]
Recalculate changed formulas in sheet	[F9]
Recalculate all formulas in all sheets.	[Ctrl]+[Shift]+[F9]
Update chart.	[Ctrl]+[F9]
Styles and Formatting window	[F11]
Create a document template.	[Shift]+[F11]
Updates the templates.	[Shift]+[Ctrl]+[F11]
Group data range.	[F12]
Ungroup	[Ctrl]+[F12]
Increase row height	[Alt]+Down Arrow
Decrease row height	[Alt]+Up Arrow
Increase column width	[Alt]+Right Arrow
Decrease column width	[Alt]+Left Arrow
Optimize column width or row height	[Alt]+[Shift] + Arrow Key

Rotate a table

To rotate a table in such a way that the rows become the columns and the columns become the rows, select a range of data, go to Edit > Copy then select a single cell where you want to paste it. Then go to Edit > Paste Special and check Transpose under Options, then click OK. If you select a row or a column, the data gets pasted many times over in the rows and columns, so be sure to select just one cell. Also, the data will get automatically rotated the next time you use Paste Special, so make sure that the Transpose option is unchecked.

Change the colour of the gridlines

By default, the gridlines in the spreadsheet is grey. If you want to choose another colour for the gridlines, or want to make it slightly darker or lighter, go to Tools > Options > OpenOffice.org Calc > View.



Changing the colour of the gridlines

Under Gridlines, select a colour from the colour drop down box. Click OK.

Using Conditional Formatting

You can specify upto three conditions for a cell, and then format the resulting values in that cell according to the conditions. Select the cell or cells for which you want to use this feature, and go to Format > Conditional Formatting. There are three conditions available, with a drop down box to change the three conditions. This includes a number of operators. The options are equal to, less than, greater than, less than or equal to, greater than or equal to, not equal to, between and not between. Select a condition, then select a style from the Cell Style drop down menu. There are four default styles available. To create your own styles, enter a text or number, apply the font changes you want to it, select the cell, then go to Format > Styles and Formatting or press [F11]. In the Styles and Formatting window, click on the New Style from Selection button. A window will pop up asking you to name the style. Once this is done, click on OK. Now, go to Format > Conditional Formatting and in the Cell Style drop down menu, you will see your new style.

Using Scenarios

Scenarios is a useful little feature in Calc that allows you to assign a different set of values to the same set of cells. This means that you can use the formulas and create charts, as well as use the Data Pilot on the same cells, with alternate values for different situations. Select the cells you want to enter alternate values to, go to Tools > Scenarios and click on OK. A grey box appears by default around the area of selection. This is your Scenario 1. Go the Tools > Scenarios to create

the second scenario. Now you can move back and forth between the two scenarios using the scenario drop down menu that appears boxed around the cells. You can create as many scenarios as you want on the same set of cells. Editing one scenario will not change the

other scenario. Note that the notes on a cell will remain the same throughout all the scenarios.

Impress

Using The Start-up Wizard

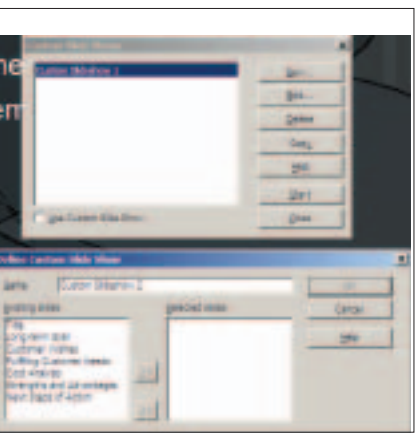
On start-up, Impress initiates a wizard. To disable the wizard, check Do not show this wizard again when it starts up. However, the wizard is a very helpful feature, and gets your presentation well under way before opening up the application for editing. You can select the design, the transitions, and the timing of the transitions. The fourth step in the wizard asks you the name of the company, the subject of the presentation and ideas to be presented. These fields, when filled occupy the first slide of the slideshow. The fifth step is choosing particular pages, which is centered around a presentation for a product. This can be easily changed later on.

Custom Slide Shows

You can create custom presentations from a large slideshow according to the needs of the audience. This means that you can take particular slides from the presentation, re-order them and present to an audience. You can create as many custom slide shows as you want.

To do this, go to Slide Show > Custom Slide Show > New. The Define Custom Slide Show window will now open. You can add or remove slides from the main presentation.

Once you are done, click on OK to save the custom slide show. To make another custom slide show, click on New again. To present a particular custom slide show, click on Start from this window, after selecting a custom slide show from the list.



Creating a custom slide show

Insert Summary Slide

A summary slide is a slide added to the end of the presentation that highlights all the points covered in the presentation. To insert a summary slide at the end of the presentation, go to Insert > Summary Slide. Note that changes made in the intermediate slides after creating the summary slide will not change the summary slide, and the summary slide can be created only once in a presentation.

Rehearse Slide Show

Impress lets you calculate the duration for display of each slide during a presentation so that you don't need to manually feed in the duration while creating a slide show. Go to Slide Show > Rehearse Timing. The slide show should start now, with a semi-transparent timer in the bottom left corner of the screen. Change the slide after the appropriate duration of time. Once you have gone through the entire presentation in this manner, the timings for each slide are automatically stored. Save the file and run the presentation. The presentation will now proceed with the rehearsed timings.

Shortcut Keys For Impress

Effect	Shortcut keys
Edit text.	[F2]
Edit group.	[F3]
Exit group.	[Ctrl]+[F3]
Duplicate	[Shift]+[F3]
Position and Size	[F4]
View Slide Show.	[F5]
Navigator	[Ctrl]+[Shift]+[F5]
Spellcheck	[F7]
Thesaurus	[Ctrl]+[F7]
Edit Points.	[F8]
Fit text to frame.	[Ctrl]+[Shift]+[F8]
Styles and Formatting	[F11]

Batch convert PowerPoint Documents And Templates

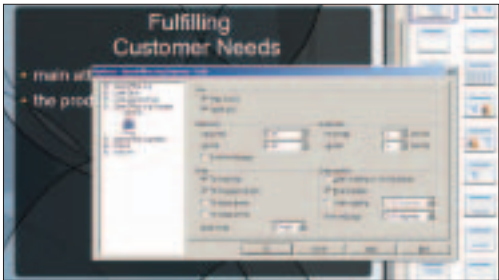
You can batch process MS PowerPoint templates and presentations to be used with OpenOffice.org with the Open Document format. The same procedure can be used with different settings for converting Excel and Word files as well. Go to File > Wizards > Document Converter. The Document Converter window should now open. By default Star Office is selected. Select the Microsoft Office radio button. Check PowerPoint Documents and click on Next. Select the Import from: and Save to: directories for the Templates and the Documents. By default, the PowerPoint templates are in the C:\Program Files\Microsoft Office\Templates\Presentation Designs directory. Click on Next. A summary of which directories the templates and documents will be imported from and exported to will show up. Click on Convert and the files will be converted to the Open Document format.

Turn On Reference Options

To turn on the grid in Impress, go to Tools > Options > OpenOffice.org Impress > Grid. Under Grid check Snap to grid and Visible grid. The grid that appears is made up of an array of dots, and not lines. To show Rulers, go to Tools > Options > OpenOffice.org Impress > View. Under Display, check Rulers visible.

Customise The Menu

The top bar can be totally re-ordered and customised according to user preferences. You can rename the menu options of File, Edit, View, Tools etc, add sub-menus and sub-sub menus, re-order the arrangement of the items in each menu and so on. Impress allows total flexibility with regards to the



Turning on the grid

menu. Go to View > Toolbars > Customize. From the Customize window, you can tweak the menus, the keyboard shortcuts, the toolbars and events according to your preferences.

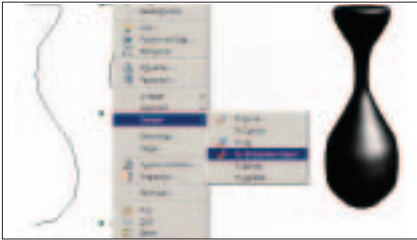
Make 3D Rotation Objects

You can use Impress to create 3D objects from a curve. Although the objects created are not really 3D, they appear to be so. Draw a line or a curve, right-click on it and go to Convert > 3D Rotation Object.

Writer

Creating A New Style

To create a new style, first type in a few text characters anywhere in the document. Apply the font settings that you want, and go to Format > Styles and Formatting or press

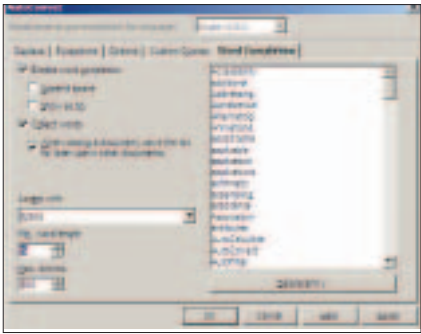


Making 3D rotation objects

[F11]. Click on the New Style from Selection button, and enter the name of the style. You can use the same method to update a particular preset style. To do this, press [F11] then click on the Update Style button.

Auto Completion

Writer can automatically learn and complete long words. This feature is enabled by default, but can be distracting. To disable the feature, go to Tools > AutoCorrect > Word Correction and uncheck Enable word completion. If you want to use this feature, but want to use the space bar to accept a word instead of the [Enter] key. Under the Accept with drop down menu, select Space. If you want to use a particular word, but another word is showing up in the autocomplete feature, press [Ctrl] + [Tab] to cycle forwards through the list or [Ctrl] + [Shift] + [Tab] to cycle backwards through the list. To decrease the minimum number of letters for which this feature is active, reduce the min.



The auto completion feature

word length from the default value of 10 to either 5 or 2 as per your choice.

Using The Direct Cursor

The direct cursor feature allows you to start typing anywhere on the page. The feature divides the document into lines and three zones - right, centre and left. Once activated, you can click the cursor anywhere on the page and start typing. To enable the feature, go to Tools > Options > OpenOffice.org Writer > Formatting Aids. Under Direct Cursor, check Direct Cursor. To allow for even more flexibility, and give you the freedom to start writing from

Shortcut Keys Writer

Effect	Shortcut keys
Select All	[Ctrl]+[A]
Justify	[Ctrl]+[J]
Double Underline	[Ctrl]+[D]
Centered	[Ctrl]+[E]
Find and Replace	[Ctrl]+[F]
Superscript	[Ctrl]+[Shift]+[P]
Align Left	[Ctrl]+[L]
Align Right	[Ctrl]+[R]
Subscript	[Ctrl]+[Shift]+[B]
Redo last action	[Ctrl]+[Y]
Apply Default paragraph style	[Ctrl]+[O]
Apply Heading 1 paragraph style	[Ctrl]+[1]
Apply Heading 2 paragraph style	[Ctrl]+[2]
Apply Heading 3 paragraph style	[Ctrl]+[3]
1.5 Line Spacing	[Ctrl]+[5]
Calculates the selected text and copies the result to the clipboard.	[Ctrl]+[+]
Custom hyphens;	
hyphenation set by you.	[Ctrl]+[-]
Non-breaking dash	[Ctrl]+[Shift]+[-]
Run macro field	[Ctrl]+[*]
Non-breaking spaces.	[Ctrl]+[Space]
Line break without paragraph change	[Shift]+[Enter]
Manual page break	[Ctrl]+[Enter]
Column break	[Ctrl]+[Shift]+[Enter]

any point on the page, go to Tools > Options > Open Office.org Writer > Formatting Aids. Under Direct Cursor, select Insert. Finally, select the Tabs and Spaces radio button.

Add Footnotes

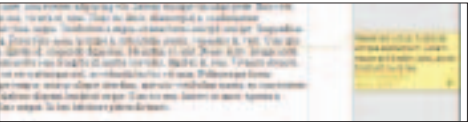
When writing a technical document, it is useful to append footnotes at the end of a page. To add a footnote, bring the cursor to the end of the sentence to which you want to add a footnote, go to Insert > Footnote, and click OK with the default values. The cursor will now be taken to a modified footer, where you can type in the footnote. Footnotes will be added to the end of every page. To collect all the notes at the end of a document, go to Insert > Footnote and under Type select the Endnote radio button.

Use Sections

Sections are a useful feature that allows a part of the document to behave in a different way than the rest of the document. To create a section, go to Insert > Section. The section is by default named serially starting from Section1. Write some text in this section, or copy-paste from another location. To change the way the section behaves, go to Format > Sections. Select a particular section from the list. You can protect a particular section from being changed. Check the Protected check box under Write Protection. You can choose to add a password to this section to remove the write protection. To hide the section in the document, check the Hide checkbox under Hide. To allow only the section to be edited in a write-protected document, check Editable in read-only document under Properties.

Insert Notes

Notes are small post-its like fields for comments or personal reference. Notes can be added anywhere in the document, and show up with a dark yellow line linked to a field to the right of a document. Position the cursor to the left of the character to which you want to add the note to, then go to Insert > Note or use the shortcut [Ctrl] + [Alt] + [N]. If you delete a



Inserting notes

text, the accompanying note will also be deleted. You can edit the note by clicking on it. The note is attached to a particular character on the page, typing before the character will make the note change position too. To keep the notes, but make them invisible, go to View > Notes.

Add Animation To Text

You can add animation to text in drawing objects like circles or rectangles to give more visual appeal to your documents. First, insert an object into the document from the drawing toolbar. If the toolbar is not visible, go to View > Toolbars > Drawing. Once an object is inserted, double-click on it to enter text. After entering the text in the object, select the object and go to Format > Object > Text Attributes > Text Animation. There are four effects available, blink, scroll through, scroll back and forth and scroll in. Most of these effects can be looped infinitely or made to repeat a specific number of times. You can choose other settings like direction, increment and delay. Click on OK when you are done.

IBM Lotus Symphony

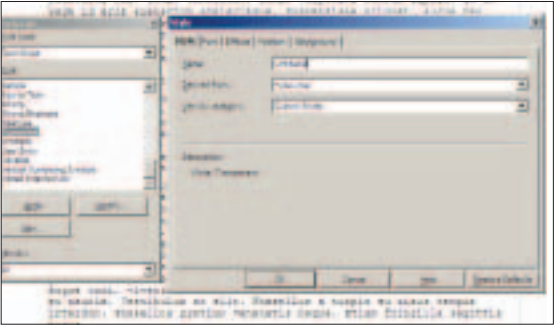
IBM Lotus Symphony is a full featured office suite in one application. The application has word processing, spreadsheet, presentation and web browsing capabilities built in with a tabbed interface. This interface has many benefits. You don't end up cramming up the taskbar if you have many documents open. You can also work on the web (via Internet Explorer), across documents and spreadsheets without even navigating to the taskbar. The menu bar changes to be relevant to each tab that you work upon. The only problem is that Symphony takes up twice as much memory as running MS Excel, MS PowerPoint, MS Word and Internet Explorer all together! However, Lotus Symphony is a free office suite,

and has a familiar look and feel, so it is easy to find your way around.

Documents

Working With The Style Sheet

Formatting text is made easy using the style sheet. The style sheet is a window that pops up with a bunch of preset text formatting options. To apply a format to the text from the style sheet, select the text and press [F11]. A window will pop up with various styles. Go through the Style Type. Drop down menu for access to different styles. To create a custom style, click on



Using the style sheet

the New button, give the style a name, attributes under the Font tab, text effects under the Effects tab and click on OK. Your custom style will be

Shortcut keys For Lotus Symphony Documents

Effect	Shortcut keys
Justify the selection	[Ctrl]+[J]
Apply double	[Ctrl]+[D]
Centre the selection	[Ctrl]+[H]
Italicise the selection	[Ctrl]+[I]
Open the Page Properties window	[Ctrl]+[Shift]+[P]
Left-align the selection	[Ctrl]+[L]
Turn nonprinting characters on or off	[Ctrl]+[M]
Create a new document	[Ctrl]+[N]
Open the Print window	[Ctrl]+[P]
Right-align the selection	[Ctrl]+[R]
Apply subscript to selection	[Ctrl]+[Shift]+[B]
Underline the selection	[Ctrl]+[U]
Close the document	[Ctrl]+[W]
Apply single line spacing to the selection	[Ctrl]+[1]
Apply double line spacing to the selection	[Ctrl]+[2]
Apply single-and-a-half line spacing to the selection	[Ctrl]+[5]
Non-breaking dash	[Ctrl]+[Shift]+[-]
Insert a blank line	[Shift]+[Enter]
Manual page break	[Ctrl]+[Enter]

added to the list of styles.

Turning Off Word Completion

Symphony Documents has the word completion feature common in mobile phones in the message mode. While this may be very useful on a small device, it is confusing and distracting while working on a document. To accept a word, you have to press the Enter key by default, which breaks the rhythm of the typing. To turn this feature off, go to Tools > Instant Corrections. In the Word Completion tab, uncheck Enable word completion. If you like using this feature, choose the Space option in the Accept with drop down menu. This will allow you to type and accept a suggestion using the [spacebar] instead of the [Enter] key. Symphony Documents keeps getting better at this feature with use, as every new word that you use is added to the dictionary.

Tweak The Status Bar

The status bar is at the bottom of the document you are editing. The page number, the cursor position and the zoom level are some of the displayed values in the status bar. It is possible to tweak which values are displayed in the status bar. For example, one useful addition would be the date and time display, which are not selected by default. Go to View > Status Bar > Settings and check Current Time and Current Date. Uncheck other options you don't want displayed.

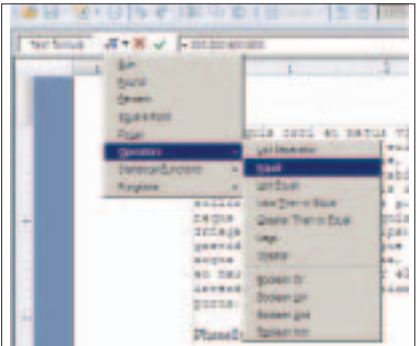
Table Of Contents

Symphony Documents can create a table of contents automatically from the document. For this feature to work, the document has to be formatted and structured properly. Use the style sheet to apply the format for the headers and the sub-heads. Once this is done, go to Create > Index and Table > Indexes and Tables. A number of options are available in the window that pops up, including Alphabetical Index and Illustration Index. Table of Contents is selected by default, which will be used here. In the Evaluate upto level: box, reduce the number to 3 or 2 from the default 10. This feature is for selecting the depth of heads, sub-heads and sub-sub-heads to include in the table of contents. For most purposes, a depth of

2 or 3 is sufficient. If you want to include only chapter heads, without any sub-heads at all, select the depth as 1. For tweaking the index further, go to the Columns or Background tab. Click on OK once you are done.

Calculation

You can use Symphony Documents to do numerical calculations and insert the calculation directly into the document. Press [F2], type out the formula (for example, 2500/12) and press [Enter]. When you press [F2], a calculation bar appears below the menu bar. You can also use the



Using the calculation feature

calculation bar to calculate percentage, square root or the arithmetic mean. Click on the formula icon to access these calculations. To calculate the percentage, for example, enter 14/200 in the formula bar. Then click on percentage, the value of 7 gets entered in the document.

Insert Images

To add images to a document, go to Create > Graphic from File, and a Create Graphics window will open. By default, this directs you to the large library of clip art that comes with Lotus Symphony. Most of these graphics are stored in the Windows metafile (.wmf) format, but there is a gallery of gif animations as well. Navigate to any other graphics file on your system, select it, and click on Open to insert it into the document.

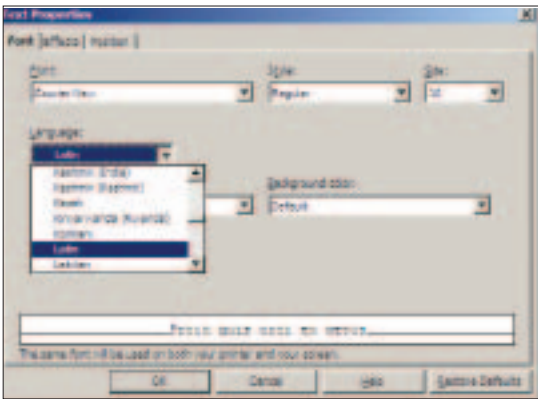
Record Changes

It is possible to use Symphony Documents to keep track of changes made on a collaborated effort. Go to Edit > Revisions > Record.

Symphony Documents will now start recording all changes made to the document. All changes made to the document will now show up in red. Formatting changes will show up in bold. Inserted text will show up with an underline, and deleted text will show up with a strikethrough. To change the way these changes appear, go to File > Preferences. The Preferences dialogue should open. Go to IBM Lotus Symphony > Lotus Symphony Documents > Changes, and tweak the options as per your preferences. To stop viewing the changes, go to Edit > Revisions > Show. This will show the document in its last state, without the highlighted revisions. You can also protect the document from anyone else disabling the revision tracker. To do this, go to Edit > Revisions > Protect Records. You will be prompted for a password, enter it. Now the document will continue to record changes till someone uses the password to allow Symphony Documents to stop recording changes.

Applying A Language To Selected Text

You can apply a particular language to selected text which will take precedence over the language of the entire document. To do this, select the text, go



Applying a language to selected text

to Layout > Properties > Text Properties > Font. Under the Font tab, select the Language: drop down menu to a particular language of your choice.

Commenting

You can add comments to revisions in a document. The comments will be visible when the cursor is hovering over the revision that has been

commented on. To add a comment to the revision, select the revision, the go to Edit > Revisions > Comment. Enter the comment in the field here, and click on OK. If you want to give comments on all the revisions, or a number of revisions, then navigate through the revisions using the previous and next button in the comments editor.

Editing The Gallery

Symphony refers to its clip art library as the "gallery". To add media to the gallery, go to Tools > Gallery. A top bar with the gallery and the navigation will appear. Open an explorer window, and drag and drop media from the explorer window into the gallery toolbar.

Save Document As PDF

One of the greatest advantages that Symphony Documents has over MS Word is that it can directly save documents as a PDF file, which makes it easy for sharing on the web and for printing with no conflict error or problems associated with formats like .docx. Go to File > Export type in a file name and click on Save.

Presentation

Hide Pages

If you have created a presentation, but don't want to show some slides in the slideshow, then you can hide the pages. The pages will remain in the document, but won't be shown during the presentation, and the name of the page will be highlighted in grey to show this in all other views. Go to View > Page > Page View. Then right-click on the slide you want to hide. In the menu that appears, select Show/Hide Page.

Add Notes To Slides

Notes can be used to for organising your content and managing a large presentation. To take down notes, go to View > Page > Notes View. A diary like view will appear where you can take down notes below every slide in the presentation.

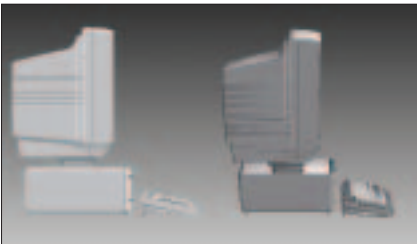
Time Your Presentation

Symphony Presentations has a nifty little feature that lets you time your presentation by completely rehearsing it first before actually

delivering the presentation. This means that while going through the presentation, you can change the timing at which each slide changes, and then save and apply these timings to the slides, so they change at those times during the presentation. To do this, go to View > Page > Page Sorter View. Navigate to Presentation > Timing Rehearsal. The slideshow will start with a timer on the top left corner of the screen. To change a slide, click on the timer when you are done with the particular slide. Go through the entire presentation in this manner, and then save the presentation. Now press [F5] to start the slideshow with these timings applied to the slides.

Convert 2D To 3D

Symphony Presentations has a feature that allows you to convert 2D objects into 3D objects. Once a 2D graphics is inserted into the presentation (line art or a clip art file), select it, right-click, go to Convert > To 3D. This will take some resources and some time, and then something



Converting 2D objects to 3D

like an embossed effect is implemented to give the illusion of a 3D object. This works well for some objects, but goes horribly wrong for others. Draw a free form line or curve, and right-click on it, go to Convert > To 3D Rotation Object, and an effect akin to the lathe tool in 3D applications is implemented. This is a great way to create pottery and symmetrical 3D objects. Be warned, the resulting images are not really in 3D, just appear to be so.

Creating A Template

You can use drawing objects, custom colours and other settings applied to a slide as a template across many presentations. Once a layout has been created in a slide, go to File > Template Organizer > Save File To. Type in a name for the file and click on Save. The template is stored in the .otp format for

Shortcut keys For Lotus Symphony Presentations

Effect	Shortcut keys
Move objects or slide	Arrow keys
Move around in the page sorter view	[Ctrl]+Arrow key
Hide in the docking window	[Ctrl]+[Shift]+[H]
Stick in the docking window	[Ctrl]+[Shift]+[E]
Delete selection or end presentation	[Shift]+[Backspace]
Delete selection or current page	[Shift]+[Delete]
Go to last page	[Shift]+[End]
Go to next page in show	[Shift]+[Enter]
Cancel selection	[Shift]+[Escape]
Constrain movement of selected object horizontally or vertically	[Shift]+[Drag]
Go to first page in screen show	[Shift]+[Home]
Paste last text input to cursor position	[Shift]+[Insert]
Go to previous page in screen show	[Shift]+[Page Up]
Go to next page in screen show	[Shift]+[Page Down]
Move to the left	[Alt]+[Left]
Move to the right	[Alt]+[Right]
Go to previous page in screen show	[Alt]+[Home]
Go to previous page in screen show	[Alt]+[Page Up]
Go to next page in screen show	[Alt]+[Page Down]
Go to next page	[Alt]+[End]
Zoom out	[Alt]+[-]

presentations, which is a pretty obscure format. Go to File > Save As for options to save the file as a MS PowerPoint template (.pot) or a OpenOffice Presentation template (.sti).

Create A Screen Show

In Lotus Symphony, you can make derivative presentations from a single presentation called a "Custom Screen Show". This means that you can take certain slides from the main presentation, re-organise them, and then present them to a certain audience with specific needs. You can create as many Screen Shows as you want. To use this feature, go to Presentation > Custom Screen Show. Click on New. Edit the name of the screen show, and add slides in the correct order from the list of slides shown. Once you have created a Screen Show, click on OK. To create another Screen Show, click on New and repeat the procedure. To start a Screen Show,

click on **Start**. To change certain other settings of the Screen Show, go to **Presentation > Screen Show Settings**.

Enable Presentation Navigator

An important feature in Symphony is navigator. This is useful for complicated presentations, where you need to move back and forth based on the reception from the audience. Enabling the navigator brings up a small navigation window during the presentation that allows you to navigate to specific slides or objects within the presentation. To enable the navigator, go to **Presentation > Screen Show Settings > Screen Show**. Then check the **Navigator visible** check box.

Applying Actions To Objects

Once you have inserted a graphic into a presentation, you can define certain actions for the objects to perform when you click on it. Options include going to the previous or next page, going to a particular page, going to the first or last page or ending the



Applying actions to objects presentation. To do this, select the object, then right-click and go to **Interaction**. Under **Action at mouse click**, select a relevant action and click **OK**.

Create An Animated GIF

You can create an animated GIF file in Symphony Presentations. Unfortunately, the file will exist only inside the presentation file. There is no way to export the GIF file as an image for use elsewhere. There are two ways to do this. Either select a group of objects to be made into a GIF, where the application will assign a single frame to each object, or select and add objects one-by-one as individual frames. Go to **Create > Image Animation**, and the animation window should appear. Select the **Apply Objects**

button to add a group of objects into single frames, or the **Apply Object Individually** button to add a group of objects individually. If a group of objects is selected, and you click on the **Apply Object** button, then the entire group of objects are added as a single frame in the animation. Click on **Create**, and the GIF animation will be added to your presentation.

Convert Bitmaps To Vector

Right-click on a Bitmap or a JPEG file (any raster-based file actually), go to **Convert > To Metafile**. The image is now a MetaFile vector graphic and can be handled in the presentation.

Spreadsheet

Managing Sheets

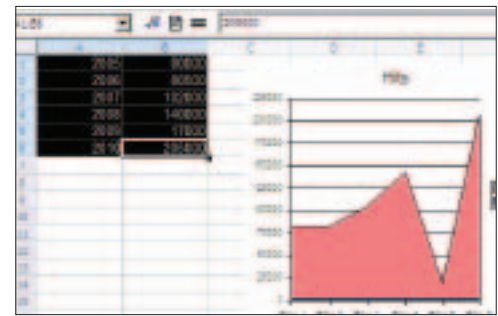
The sheets in Symphony Spreadsheets are named as A,B,C... by default. There is also only one sheet by default. To add a sheet, right-click on the sheet tab and select **Insert Sheet**. A dialogue will pop up asking you to position and name the sheet. To change the name of the sheet, right-click on the sheet tab and select **Re-label Sheet**. Alternatively, you can press [Alt] and click on the sheet tab.

Freeze Pane

Locking a column or row of cells can be useful while working on large datasheets, where the headers have to be visible while scrolling down or across a spreadsheet. To lock a row or column, select the cells or the entire row, go to **View > Freeze Window**. Be careful while applying this feature, as any image or chart leaking over to the area of the selected cells also get frozen, and appear to the top or the left while scrolling.

Creating Charts

Once the data is entered in the rows and columns, you can create a chart using the data. Select the data that you want to make the chart out of. Right-click on it. Then click on **Chart**. Select the options such as the chart type, the header rows, the titles and legends and click on **Create**. The chart will appear next to the selected area in the spreadsheet. The chart is linked to



Changing values changes charts in real time

the data, so changing the data will change the chart in real-time.

Hide Sheets

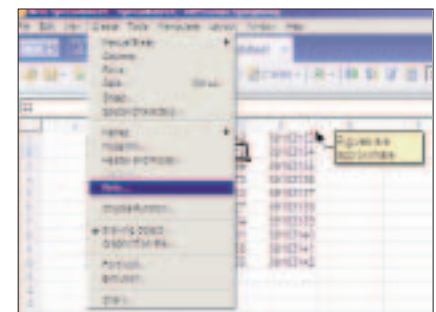
You can hide certain sheets of the spreadsheet. Note that this feature is not password protected. To do this, select a sheet, go to **Layout > Sheet Properties > Hide**. To show a hidden sheet, go to **Layout > Sheet Properties > Show**, and select one or more hidden sheets.

Rotate Text To A Specific Degree

Symphony Spreadsheet allows you to rotate a selected text by a specific degree. For example, you can format a header common to both a row and a column to be viewed at a 45 degree angle. To do this, select the cell or the text, go to **Layout > Properties > Text and Cell Properties** and under **Text direction**: change the value to a suitable number. By default the value is 0.

Take Down Notes

You can take down notes for each cell in a spreadsheet. To do this, select a cell, go to **Create > Note**. Enter the note in the field that appears. To view the note of a cell, hover over the small red square on the top right corner of the cell. You cannot edit a note while viewing it, so you will have to go to **Create > Note** again to edit a note.



Taking notes in the cells

FEED READERS

Taming The Internet

Sriram Sharma

News, media, business and tech companies need to be wired into the news and events in their line of business — in the online world, things happen fast. Whether you're an advertising agency trying to track the success of your viral media campaign, or a PR company trying to defend your client's online reputation, a scientist, tech journalist or a champion blogger — these tools below will definitely give you an edge. They will reduce time spent browsing and streamline all the information received.

Feed readers can find, manage and subscribe to RSS feeds. They keep a real-time track on keywords, help you share and manage the news, and save stories so they can be found again.

We will cover:**Browser-based RSS readers**

Google Reader

Bloglines.com

Feed readers for the Desktop

NewsGator FeedDemon 2.7

FeedReader 3

Snarfer

Browser-based RSS Readers

Web Apps often look great and are fun to tinker around with, but when it comes to it, a dedicated application that runs natively from your PC offers you many benefits: you can make a backup, work offline, and get to have control of your data. Browser-based apps however have evolved considerably, and the social aspect of these apps is the most compelling reason why users keep coming back. We look at two browser-based feed readers for keeping you updated with the news — Google Reader and Bloglines.

Why go to the news when you can have the news come to you?



Reader now provides automatic translation for content that is in another language

Google ReaderURL: www.google.com/reader

Price: Free

This is a perfect RSS feed reader for both newbies and pros — Google Reader is an effective, easy to use RSS reader that lets you share your favourite blog entries or news stories with your friends. It's one of the best designed Web apps, designed to be keyboard friendly and social.

Log in to your Google Reader account the first time around and you might not feel so compelled, but once you have it configured to read a few feeds, and have other friends doing the same, it becomes an awesome new medium to recommend and discover good reads.

The UI interface is sleek and simple, with menu options that link to Home, All Items, Starred Items, Trends, Your Stuff, and Friends Shared Items. Viewing All Items will get you on the river-of-news mode, where you can surf through all your unread stories. An auto-sort option here can reorder this list so that feeds with fewer updates get a preference over feeds that update fre-

quently. It's a useful preference that lets you prioritise blog posts made by your friends over hundreds of news updates from CNN.com or boingboing.net.

Adding a news feed is easy — just paste the feed URL in the Add Subscription tab, and you're subscribed. If you like a particular entry, you can bookmark, share, email, and add notes to the entry. To save an article for future reference, click on the star at the bottom of the story. Clicking the Share button adds the item to a dynamically generated page. You can visit your shared items, have them posted on a publicly accessible page, or as a widget on your blog. You can also import your existing subscriptions into Google Reader. To do this, you first have to export your subscriptions in a standard format called OPML. Most RSS feed readers support this standard, Google allows you to export your subscriptions as an OPML file too.

Google has a Top Recommendations tab, that is auto-generated, based on the feeds that you have already subscribed to — these recommenda-

tions aren't always spot on, but gives you a chance to discover new blogs and Web sites in your line of interest.

The Trends tab gives you analysis of your own reading habits — which blogs are the most read, a bar chart showing the ratio of posted items and items read by you, along with data on the daily frequency of posts from sources. It seems like useless trivia — “From your 37 subscriptions, over the last 30 days you read 329 items, starred 4 items, shared 1 items, and emailed 0 items” Google Reader tells us. The cool thing about having Google analyse your reading habits is that the Home tab generates a list of unread items based on the data collected, so your favourite news sources are prioritised over other subscription feeds that aren't so hot.

If your phone has a data connection, you can access Google Reader on the go by pointing your mobile phone's browser to: <http://www.google.com/reader/m>. You can even configure your Google Reader for offline use by installing the Google Gears plugin, or using the Google Chrome browser. This feature enables you to read up to 2,000 items even when your computer is not connected to the Internet. For those with iffy broadband, it's quite a blessing.

Keyboard shortcuts make Google Reader more convenient to use — every operation that can be performed with the mouse also has an assigned keyboard shortcut: (www.google.com/help/reader/faq.html#shortcuts) try this one out: press the “t” button to tag an item, and “gt” to have an Ajax panel popup, so you can search the feeds by tags.

Google's offerings are constantly upgraded, with new features added based on customer feedback. They just added a killer feature — automatic translation from any language, a feature not yet present in any other feed reader. As far as Web apps go, this one is the best.

Rating: ★★★★★

Bloglines

URL: www.bloglines.com

Price: Free

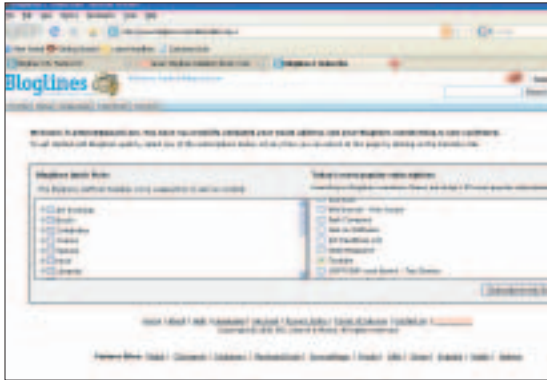
Launched in 2003, Bloglines is one of the oldest Web-based news aggregators around, and it still commands loyalty. It is by no means, old school — in fact, compared to Google Reader, it has plenty more features to manage news, reduce spam, and share breaking news.

Once you sign up for the service, you're presented with a list of suggestions from the Bloglines staff — the 50 most popular subscriptions, feeds by category — Music, News, Politics, Sports, Technology, etc. For a newbie, this is a good way to start off, though you'll only find news sources that are heavily leaning towards what's happening in the West. You can import an OPML file to quickly setup your subscriptions — we were able to import our lists of Web feeds from Google Reader.

The interface is not much to look at — the Web site looks like a relic from the pre-web 2.0 era, which can be remedied somewhat by using their beta Web site at beta.bloglines.com. The new beta interface has a start page, a three-panel reading view, and supports drag and drop feed management.

There's a neat Blogroll feature that lets you export your Bloglines subscriptions with a wizard that generates HTML for your blog. You can also configure your account so that other readers can view your subscriptions on the Bloglines Web site: (bloglines.com/public/yourUserID). Bloglines has a built-in blog application that can take news from

Bloglines lets new users select from a wide choice of popular RSS feeds.



your RSS feeds, and save them as clippings, so you can add your notes and thoughts to that article and publish it. It's rudimentary and lacks the shine and finish of other blogger software, but it's effective. Because it's a Web-based app, it can use the information collected from its user base to recommend feeds to you.

Bloglines is also backwards compatible with the predecessor to RSS feeds — Newsletters.

It's really useful — you can create a temporary bloglines email account and use it to subscribe to any service that forces you to register with an email account. If you unsubscribe from a service / software, the bloglines email account is deleted, and anyone who tries to spam you will be spamming a dead email account. You spare your email address all the possible spam you might incur.

Another cool feature from Bloglines: you can enter the tracking numbers for UPS, FedEx, and DHL deliveries, and receive updates on the status of your package.

You can download a small program that notifies you whenever you have new items in your Bloglines account. The Notifier works with Windows, Mac OSX, and some Linux brews. It also works with browsers — and can be installed as an extension on IE or Mozilla Firefox.

While Bloglines is a compelling application with plenty of features, the quality of its uptime is a concern, many of its core users have been complaining that a lot of feeds don't get updated; the problem has been acknowledged by Bloglines too. Bloglines syncs with desktop-based clients like Snarfer (reviewed later) and RSS Bandit, so you do not have to use their Web interface at all times. Migrating from Bloglines shouldn't be a problem, should you have issues with feed updates. Bloglines may not have the keyboard friendliness of Google Reader, but has a few useful keyboard shortcuts, and is still worth a look.

Rating: ★★★★★

Desktop Feed Readers

Browser-based RSS Feed readers can only do so much — with broadband quality being so undependable at the present time, having a client-based feed reader gives you the ability to download feeds and read them at your leisure. Client-based feed readers can handle hundreds of feeds, and if you want to run searches on them, some even provide an offline mode where they cache all the feeds; others run persistent queries on Ebay and Craigslist, download and sync your podcasts on your MP3 player, and more. Best of all, some of the feed readers mentioned below can synchronise with an online feed reader — Google Reader, NewsGator. com, or Bloglines.

NewsGator FeedDemon 2.7

Web site: www.newsgator.com

Price: Free

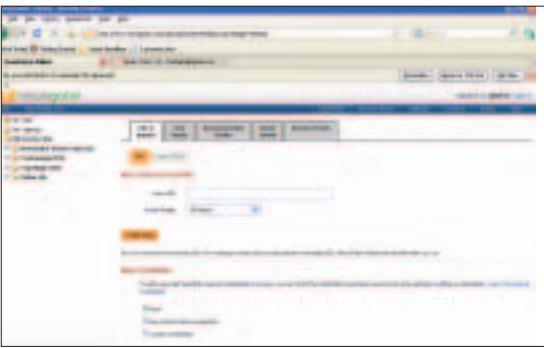
Size: 3.9 MB

Feed Demon from NewsGator is designed for those who need to digest an enormous amount of news in a little time. NewsGator used to charge for its desktop reader, but starting with FeedDemon 2.6, the company started offering the desktop client for free. The latest version has many cool features not found in other clients — synchronisation, an offline read mode, streaming video support, and desktop alerts.

The install is a measly 4 MB, and configuring the software is easy, thanks to wizards that recommend a list of feeds to start with, and the ability to import OPML files. The application has a neat and intuitive two-pane interface which supports tabbed browsing, and uses the default browser's rendering engine to display the Web pages when you click on an article.

FeedDemon also offers a browser-based version of the app on NewsGator online, in case you need to browse on a different computer. We tested this feature out, and while it kept a proper read count of the feeds, it was unable to delete folders and old feeds that

Too much news? Hit the panic button to prune your reading list



we had removed in the client version. And since this is proprietary software, it doesn't have an option of syncing with Google Reader, if that's your Web app of choice. There are other apps which can do that — like Snarfer and RSS Bandit.

The application has a 'Prefetch for offline reading mode' that downloads all your feeds so you can read them at your leisure — a very useful feature for those with limited Internet access. This gives you the ability to read all your subscriptions in a train or a flight, without Internet access. When you're online, the software can minimise to tray and provide alerts when new stories arrive.

FeedDemon gives you the ability automatically to download podcasts and video feeds from Web sites. The bundled FeedStation automatically syncs with iTunes and devices running Windows Media Player 10 or greater.

FeedDemon's *Watches* are like filters that provide a new way to search through your feeds — if you add a watch for “HDTV” for example, every feed entry containing the word will be stored in the Watch, and any new breaking stories with the words “HDTV” will be added to the Watches list. The *Clippings* feature helps you store relevant news stories in an easily accessible location, for future reference.

You can subscribe to a feed based on keywords as well — similar to Google Alerts. Whether you are monitoring a breaking news story, celebrity, or a competitor, this allows you to select a feed search engine (Google News, Del.icio.us, Flickr, Google Blog, Google News) and automatically



Your eyeball view.
Our technology new.

Element of Success



Presenting the most advanced and contemporary presentation device, uniting functional perfection and style!

- Built-in Laser beam pointer
- Supports up to 100 slides and 1000 pages
- Supports multiple languages and 1000 pages
- Free Carry Pouch

2.4GHz Wireless iBall Presenter

Best IT World (India) Pvt. Ltd. - Email: sales@ball.co.in

Mumbai	- 022-30815100 / 5001	Ahmedabad	- 079-27436373
Bangalore	- 080-41249009	Bhubaneswar	- 0674-3297372
Chandigarh	- 0172-5009546	Cochin	- 0484-2324706
Chennai	- 044-29453691	Dehradun	- 0135-3244481
Gurgaon	- 0981-2454308	Gwalior	- 0586-0606555
Indore	- 0731-4042506	Jaipur	- 0141-3295990
Kolkata	- 09830113000	New Delhi	- 011-41816600
Lucknow	- 0522-3246428	Nagpur	- 0712-3253811
Nashik	- 09822026897	Pune	- 020-69324987
Patna	- 0612-3293947	Raipur	- 0771-3293674
Secunderabad	- 040-27894847		

subscribe to a dynamic feed of news items containing that keyword. This allows you to search for information based on your topic of interest.

Given the wealth of offerings and features, this is one of the best RSS readers available today. The offline mode is quite a lifesaver, and online synchronisation with Newsgator is a big plus.

Rating: ★★★★★

FeedReader 3

<http://www.feedreader.com/>

Price: Free.

Size: 5.2 MB

Supporting a simple, clean UI, FeedReader 3 is a lightweight app that can manage a large number of feeds and run queries on them. If you're an information junkie, FeedReader will meet your needs.

FeedReader has many solutions to manipulate the feeds and the information that you receive — *Smart Feeds* — which lets you search for a keyword or topic within your feed, *Search Feed*: which lets you subscribe to a keyword on del.icio.us, Flickr Photo, Google News, Technocrati, Youtube, Ebay, Google Blog, MSN search, and Yahoo News.

FeedReader can also download enclosures attached to the feeds, including podcasts, which are saved to a local folder. You can add your own tags to the articles while saving them locally. The application can be minimised to the tray, and a neat little alert slider keeps you informed whenever a feed

has an update. You can set the update frequency of a feed, either in minutes or use its own special feed-reader sensitive algorithm (Intelliupdate), which won't poll for a new item and spam the feed.

It's a lightweight and user-friendly app, but lack of synchronisation features with the likes of Bloglines, Google Reader or Newsgator or any such service is a sore spot — other apps can do what Feed Reader 3 can and more (sync podcasts with iTunes, Craigslist and eBay searches), and they're free too.

Rating: ★★★★★

Snarfer

<http://www.snarferware.com/snarfer.htm>

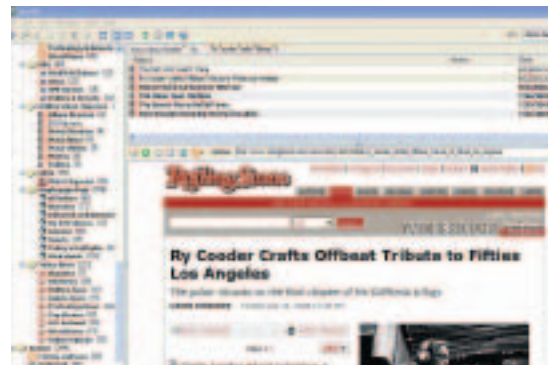
Price: Free

Size: 396 KB

One of the most popular desktop-client-based RSS readers — Snarfer can do a lot more than just help you read and manage RSS feeds. At first, this tiny app looks like it has a very basic serving — but once you dig in, you realise this is the one of most usable and enduring apps around.

It has a simple three pane user interface, with your feeds listed in folders on the left; in the centre, the Folder view sorts the news by subject, date, and source. The preview pane has an embedded browser which supports tabbed windows, and has a Web search toolbar that works with all the major RSS/Blog search engines.

You can get started by importing feeds from other readers — Snarfer supports the OPML standard, you can manually set refresh frequency for each feed, and drag and drop relevant stories into a save folder. Snarfer's development team brings out new version updates every 45 days; recent features include the ability to search on eBay or Craigslist — an excellent feature that works well with eBay India as well. Say you're planning to buy an 8GB iPod Nano, you



Snarfer has a simple three pane user interface, with your feeds listed in folders on the left

can add that as a new search, and enter the maximum and minimum price you are willing to pay for it. So instead of making searches on these web sites every day, you have a persistent search that let's you choose from the best of these deals as they happen.

New plug-ins for Snarfer make it more powerful — one helps you synchronise your feeds with your online Bloglines account, so that you have the best of both worlds -a powerful desktop application when you're using your PC, and an online counterpart that helps you access your feeds, bookmarks and searches on any other computer. There's a plug-in that can synchronise Snarfer with your Google Reader account, so your feeds can be accessed from a browser when you can't use Snarfer. We tried using both the plug-ins, and while the Bloglines plug-in worked like a charm, the Google Reader plug-in was unable to connect. Snarfer's flexibility in working with other online feed readers is one of its strongest plus points.

There's a plug-in that can make Snarfer monitor Stocks, another that can post to del.icio.us.

While Snarfer lacks some of the features present in FeedDemon and FeedReader (Support for podcasts, Offline Reading Mode), the ability to add new plug-ins, download new styles, and synchronise with Bloglines and Google Reader puts it squarely ahead of the pack. ■

Rating: ★★★★★



A newly downloaded style plug-in emulates the look and feel of the TechCrunch Web site

Email Clients

Kumar Jhuremalani

There are so many email services available now, each offering added services like more storage space, and cooler nicknames with your email. The question now arises, how do we manage these email accounts better? That's where Email clients come in to the picture. Email Clients help manage multiple accounts and by doing so make our life a lot easier. MS Outlook is the current ruler of email clients, but is quite expensive as it comes as a bundle with MS Office suite. There are still many other email clients that can be used other than MS Outlook that can manage all your email accounts, and also have additional and newer features. We spent a lot of time digging for the best alternatives you can get for managing your emails. If you are bored of looking at the same old boring screen that MS Outlook displays for you then take a look at the alternatives we have found for you. Did we forget to tell you that these alternatives are all free?

Mozilla Thunderbird 2.0.0.18
Mozilla Thunderbird is one of the most widely used alternatives for MS Outlook and its no fluke why it's so popular — it's free! It is very user-friendly and easy to setup, with a lot of features on offer, such as managing multiple accounts and RSS feeds. Thunderbird can be customised a lot by users, but the add-ons need to be downloaded separately

Setting up accounts is quite easy as there are step by step instructions given — if you have a Gmail account, the settings are preset in Thunderbird.

What's the best free email client out there? If you want to know, keep reading...

There are also many unique features that we noticed when sending emails, such as different presets for paragraphs and headers, which helps you quickly create emails. You can also save your email either as a draft or a template for reuse later. Although you cannot have background images in a template, you can upload and use online images, though this might not be visible by all mail sites or clients.

Thunderbird has an advanced tagging feature that lets you set the following tags to your emails: Important, Work, Personal, To Do and Later. Each one of these tags highlights your email according to the respective colours. You can even mark emails with a Star, which is another way of sorting your emails. Obviously, you can add tags, and even change the colours associated with existing tags.

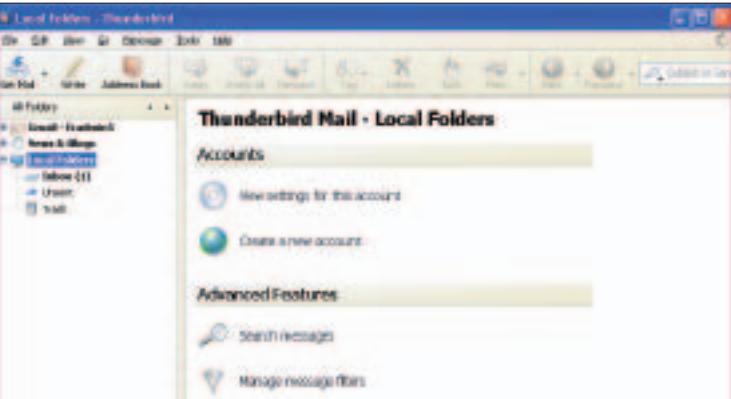
Thunderbird has an advanced Address Book feature as well, where you can create and use multiple Address Books. If you click on the Address Book on the tool bar, it opens a new window where under each Address Book you can create a List. Within those lists is where you can store your contact

cards. Contact cards can be imported from MS Outlook as well as another email client called Eudora, which is also reviewed later.

Notification for Thunderbird includes a pop-up dialogue as well as a sound. With Thunderbird you can also select a .WAV file from your PC to use as an alert.

When you start it off, it looks pretty plain but there is a lot you can do with this email client. Firstly you can customise the email client by downloading themes which are easily available as add-ons from the Mozilla Web site. Other useful add-ons that can be downloaded include a Jabber IM, sync functions with iPods and Nokia phones for contacts, Java Script Debuggers and many more. Thunderbird can be customised a lot by users but the add-ons need to be downloaded separately.

We did notice a few things that could be considered problems: if you have many unread emails in your web-mail, and select the option to get emails immediately while setting up your account, the process of downloading all your emails cannot be stopped unless you close the client. Another problem we found was with setting up RSS feeds which always gave us an error even though we checked and rechecked that everything was fine with the RSS links. Also Thunderbird does not minimize to the system tray if you close or minimise it.



Mozilla Thunderbird — Supports RSS feeds and easy email management

Thunderbird used about 53 MB of RAM when we tested it.

IncrediMail Xe 5.7.0

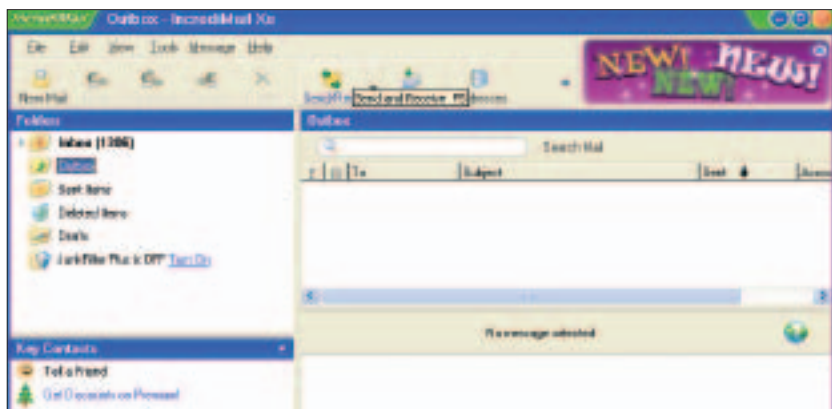
Warning: IncrediMail Xe is not particularly suited for business oriented work.

This is a very fun and friendly email client meant to put a smile on your face. This is a total step off the normal look that mail clients have. It gives users a totally fun-filled experience with a lot of colours and animations.

Setting up your email account is quite easy where the software itself auto detects the settings for different services like Gmail, Hotmail and Yahoo mail; once you enter your email address. Multiple accounts can be created in IncrediMail. IncrediMail has the feature to set rules for certain functions. e.g. you can create a folder in which the mail from your second account will be redirected into it. There was a problem we faced while setting up a hotmail account with IncrediMail. Even though the server URL was correct, we were unable to access hotmail through IncrediMail.

Separate user groups can be created to manage your contacts more efficiently. Emails can be dragged and dropped to categorise them. You can also block emails from particular users if needed.

IncrediMail gives you a complete visual treat. When you receive an email, an animated character pops up onto your



IncrediMail Xe – A very colourful experience

How We Tested

We looked, read and tested long and hard to bring you this list. We based our conclusions on performance, features and usability.

PC used for testing:

- Intel P4 @ 3.40GHz
- 768MB RAM
- Windows XP SP2

These are the features we looked for:

Multiple Accounts: Setting up and managing multiple accounts is the key feature for an email client to have.

Notifications: An email client needs to have a way of notifying the user on receiving a new email.

Rules and Filters: Rules and Filters are needed to help manage your emails in a better manner. Mails can be sorted out and automatically put into their respective folders.

Spam filtering: This is a must have for all email clients. Spam is everywhere and we need ways to stop the spam from taking. We looked for features where spam was automatically filtered out. We also checked to see if there was provision for the spam database to be updated.

Formatting: Formatting tools, themes and

screen which can actually be dragged around the screen. This is known as your Notifier. You can personalise your mail client by selecting a notifier you wish to use. Choices range from emoticons, animals to a butler bringing your mail on a plate. IncrediMail also allows you to download more notifiers from their Web site.

When sending an email you can select a background image for your email. Again there are

style-sets for emails were looked for. The last thing you want is a mail client that only writes in plain text.

Importing/Exporting: Importing and Exporting of Contacts, mails and account settings, while switching emails clients is definitely needed. It makes moving to a new client much simpler. It would be such a pain to sit and recreate an entire contact list if an email client did not support this feature.

Auto-reply: A nifty feature that will help users inform others that they are out of town or on vacation via an auto-reply. This is helpful when you know you are not going to check a particular email account when away.

Additional Features: There are many additional features that we looked for including Calendar, Advanced Contact Management and even RSS feed.

GUI: The Interface of an email client is very important. The simpler the interface, the easier it is for a user to use that particular email client.

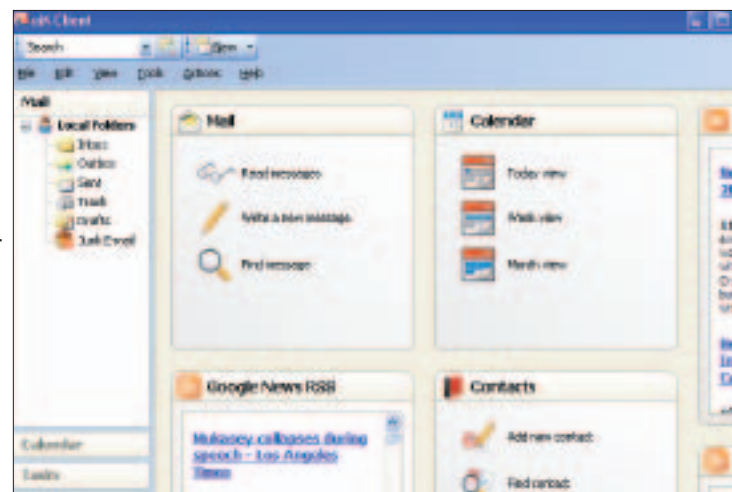
Memory consumption: As mails and news items collect in a mail client, the software can get slow. This is the reason why memory consumption is one of the important factors to consider.

various categories to choose from along with the option to let you download more. This feature looks good but has its drawback. The person you are sending to might not be able to see the background (as in the case of Gmail) or the background maybe attached as an image (as in the case of hotmail). MS Outlook and eM Client can open the email with the background displayed though.

Going along with the fun theme for an email client, IncrediMail uses Comic Sans as the default font when creating an email.

If you have multiple accounts set on IncrediMail you can easily select which account you want to use to send the email out. There is a button on the tool bar that allows you to attach a voice clip to your email. A grid is provided where you can use your mouse to create your signature. You can type out a signature with coloured fonts and use emoti-

cons provided as well. Images can be inserted into the signature as well. There is also a very nifty animation of your mail being sent. Even though you customise a signature, when an email is sent from IncrediMail, an ad, below your signature, link-



ad, below your eM Client – Contains RSS feed, Tasks and Calendar

ing to their Web site is always
attached with your email.

A very interesting feature we found with this email client, was that of a Babylon translator for IncrediMail. If you receive an email in a language other than English, from a sender you know, you can translate it straight away. Even single words can be translated using this. There is a button shaped as a globe that on clicking will provide you with translating options.

There are a few features like JunkFilter Plus, Changeable Skins, Advanced Account Access, Letter Creator that need to be purchased if you want to use them, or are available only through the premium version of IncrediMail. But, we have to say this is a really good alternative for an email client.

IncrediMail may not have all the new features like RSS feeds but is definitely the most colourful email client and uses about 18 MB of RAM.

Scoreboard

	Thunderbird 2.0.0.18	IncrediMail Xe 5.7.0	eM Client 1.1.3 BETA	Eudora 7.1	Pegasus Mail v4.41
Memory usage	53 MB	18 MB	75 MB	30 MB	13.5 MB
Multiple Accounts	✓	✓	✓	✓	✓
Notifications	✓	✓	✓	✓	✓
Importing/Exporting	✓	✓	✓	✓	✓
Rules and Filters	✓	✓	✓	✓	✓
Auto-reply	✗	✓	✗	✗	✗
Calendar	✗	✗	✓	✗	✓
RSS feed support	✓	✗	✓	✗	✗

eM Client 1.1.3 BETA

eM client is a more up-to-date email client with additional features like Widgets, IM, RSS feed and others which are not present in IncrediMail. It is not as colourful and animated as IncrediMail though, but is good in its own simplistic way.

eM Client gives you a very Web browser type of look with widgets being the first thing you see after you setup your account. Separate widgets for Mail, Calendar, Tasks, Contacts and RSS feed widgets for eM Client News and Google News can be seen. You can change or add widgets according to your likes in settings when needed.

Gmail settings are automatically used when setting up a Gmail account. This is a plus point. The bad thing about this email client is that only email titles are downloaded, which means each email will be downloaded separately on opening, which is a big drawback to working offline.



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Setting up rules for individual actions is slightly more complicated than IncrediMail, but setting up folder rules are very easy. You can directly set a folder to run the spam filter present. The client layout can be changed from the default bottom view to the side view.

Sending an email is very straight forward with all text features like bold, italics, underlined as well as more advanced features like inserting links and images available.

There is an advanced calendar/task feature which has its own widget that comes along with this email client. The widgets can be adjusted according to the user preference through settings.

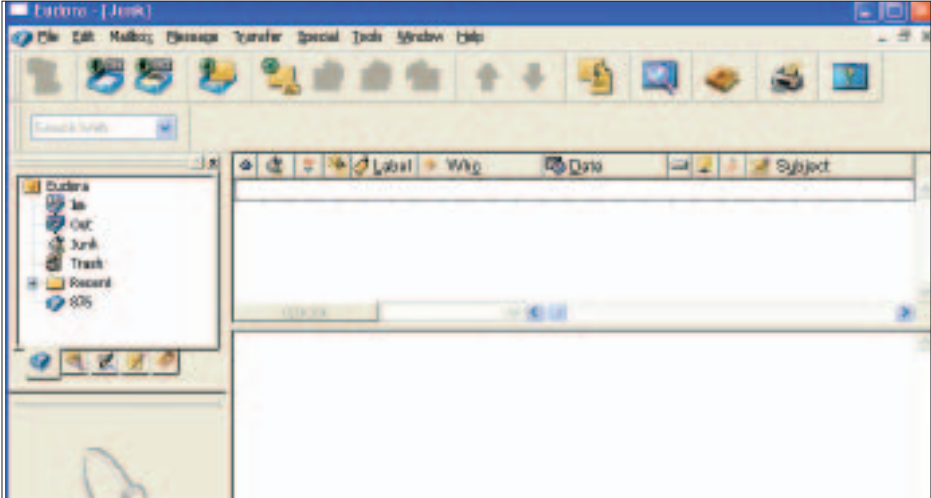
The eM Client has an Instant Messenger feature that is based on the Jabber client. If you setup an account, say, Gmail, your IM contact list is imported automatically to eM Client.

The more advanced features for eM Client are the RSS feed reader widgets that has presets for Google News, CNN, BBC and CNBC. You can also add new Web as well as RSS widgets.

One of the features of eM Client is integration with Skype, but we even after installing Skype we couldn't figure out how this plug-in actually works.

If you are really looking for a change from MS Outlook then we recommend you try this email client.

Be warned as this email client generally uses up about 75 MB of RAM.



Eudora – Old style look and feel.

Eudora 7.1

Eudora has the look and feel of a very outdated styling. Even so, it is very useful in managing multiple accounts.

Eudora might be a bit complicated at first, as it does not have any automatic account configurations like IncrediMail or eM Client. You will need to know the POP3, SMTP and IMAP setting for your email account before you can proceed with using this email client.

You will definitely need to get used to using this email client as the buttons used are different on the tool bar and they do not have text indicating which they are. You will need to wait for tool tips till you get used to it. This might be considered as a small obstacle in the usability, but it's just at the start phase.

A very unique feature, you don't usually find in email

clients, is that of setting MP3 files as your sound alerts. Mozilla Thunderbird has a similar feature where you can set a WAV file as an alert.

Emails do not open separately in a new window. They have to be read in the same window and then only. On double clicking, the raw view of the email is displayed. When you create or reply to an email, all the options ranging from text colour to alignment and even emoticons are available for use.

Eudora is simple and advanced at the same time, and will definitely take some time to get used to. It uses about 30 MB of RAM.

Pegasus Mail v4.41

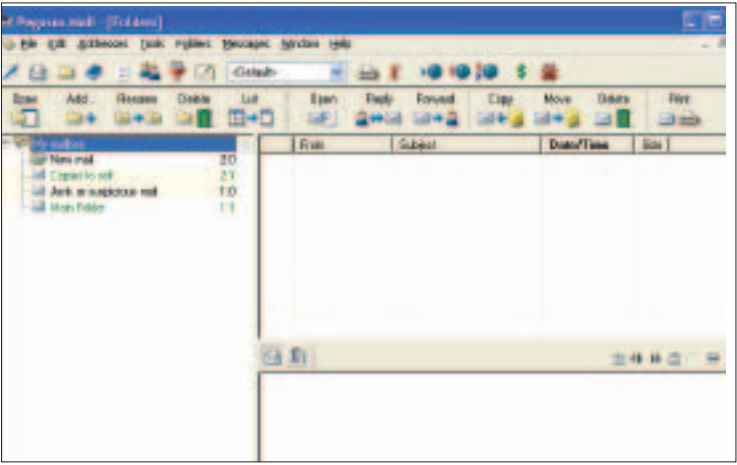
Pegasus Mail client is complex and has a lot of features, but it is easier to use in comparison with Eudora. It even looks better than Eudora.

Pegasus Mail, similar to Eudora does not have any auto settings for email services.

In Pegasus Mail you can segregate your contacts in different Address Books. This feature is similar the Contact Groups feature that IncrediMail has

Pegasus Mail – creates copies of the emails for storage. to offer.

Pegasus Mail can also support multiple email accounts. Each account can be opened in a separate folder like Eudora. The email accounts open in Mail Folders which can be renamed according to your choice and in turn help with the



overall management.

The main toolbar does not have any labeled buttons, only tool tips to know what you are about to click which might get confusing, especially if you are new to it and are in a hurry to do things.

Even with features very similar to that of Eudora, Pegasus needs some getting used to but is a better option and it also takes up only 13.5 MB of RAM.

So now, even if you are willing to spend money for MS Outlook we are not going to stop you. But we wanted to show you alternatives that do exist for it.

If you want an all rounder of an email client we would say go with Mozilla Thunderbird, as it also has some fun elements to it. If you want to switch to a completely new experience with all the fun elements then go for IncrediMail. eM Client is another good alternative for all the new features it has to offer. Lastly, if you want to move to an email client with a business appeal and a lot of features then opt for Pegasus Mail or Eudora.

kumar.jhuremalani@thinkdigit.com

Opera Mail

Opera is primarily a browser, but it has features of an email client with it now. That means you can actually use a browser with all its functions – surfing, downloading and now even emails. You can setup and use multiple email accounts and even manage your folders like you were using an actual email client.

Setting up Opera Mail is quite easy as it supports POP3, IMAP and even IRC Chat. Emails can be categorised by labeling them with any of the seven labels available – Important, To Do, Send Reply, Call Back, Meeting, Funny and Valuable, each having their own distinct icon. Emails can also be categorised according to their attachment types such as documents, images, videos and movies. Opera Mail, being integrated with the browser, opens each email in a separate tab. You can also just highlight any text

displayed in Opera, and just right-click and select send by mail – a new tab opens with your compose message screen.

Opera Mail initially just downloads the email titles, but you do have the option to download the mail bodies also. Opera as a whole is also customisable in terms of skin colours and themes.

Opera Mail also comes with a spam filter (which is Bayesian, and learns as it goes along) customisable rules, and an RSS and Atom feed reader.

Opera Mail is a good alternative to an email client, but you may probably use it only if you use Opera as your primary browser. Although we can't really consider it an email client, or compare it to the others tested here, it's impressive and easy enough to get an honourable mention.



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Download Managers

Kumar Jhuremalani

People who were managing with a mere 160 GB hard drive today have the option of upgrading to a 500 GB hard drive for more or less the same price that they would have paid two years back for their current drive. Gone are the good old days of 56.6 kbps modems; today you can get a 1 Mbps unlimited Internet connection for about Rs 2,500 per month. So what do you do when you have a couple of terabytes of hard drive space and a fast Internet connection? Well, you download everything you possibly can; and thanks to fixed rate, unlimited download plans a new breed of junkie has spawned — the download junkie. Download Managers are software that have been designed for the purpose of

Download managers will help reduce your blood pressure problems, which are caused by unreliable Internet connectivity

making your downloading as much a streamlined, automatic process that can happily run without your interference. After all, who wants to sit in front of his PC while it downloads 20 gigabytes of data on a 512 kbps connection?

Many people also have discrete download machines; PCs which are solely used to download from the Internet; and they use a different PC for gaming, multimedia and so on. In such cases, a download manager becomes even more important; since it's annoying to have to monitor downloads every little while. Download managers are designed to give users a greater control over the files they are downloading. Of course one might ask why not just use a Web browser to download files. Well, browsers cannot split up down-

loads into segments. On the other hand, download managers are developed for this kind of thing. We bring you the Top 5 download managers, tested and served up for you to choose from.

Free Download Manager 2.5
Free Download Manager (FDM here on), as the name suggests is free. It has possibly the most features we have seen in a download manager including Flash video downloads, BitTorrent support, Remote Access, etc. FDM impressed us a lot with its easy-to-use GUI.

FDM has a feature called Community Opinions. Here, the comments and feedback from other users are displayed about the file you are downloading. Also you can add your own thoughts about it which will be read by

.MP3 files into a music subfolder.

Bandwidth Allocation: Setting a speed limit or cap for your download is a very useful feature. By doing this you can surf normally while your file is still being downloaded with no problems of a Web site not opening due to bandwidth being hogged by the download that's happening simultaneously.

Flash Video Download: Flash video sites like Youtube and Google Videos have become a craze. Not only do users want to watch the videos online but also want to download the ones they like. So now some Download Managers have implemented the feature that lets you directly download Flash videos off these Web sites.

Browser Plug-in: A Download Manager that integrates with Web browsers is very helpful and gives easy access to users for instant downloads. We looked at how well the download manager integrated with the browser. The simpler it is the more usable it will be.

BitTorrent Support: BitTorrent downloads have become a very popular means of download. Having BitTorrent protocol integrated in a Download Manager makes downloading much easier as you don't need a second program just to download BitTorrent files.

Scheduler: Ever had an Internet connection that gave you cheaper or free rates at night or for certain part of the day? With these limited connections, downloads should be scheduled so that you don't go beyond the time limits and end up paying a hefty bill at the end of the month. If your download manager has a scheduler feature inbuilt, you need not worry anymore. Schedulers can now start and stop downloads and even connect on demand.

Remote Access: A more advanced feature available in Download Managers is that of remote access where in you can control and check on the progress of your downloads, even if you are not at your PC.

How We Tested

How We Tested: We jotted down the main features that are expected in a Download Manager and tested the performance in terms of memory usage and download speed over a 2 Mbps dedicated connection. We downloaded a 27.5 MB file from a stable server 5 times each. We tried to keep the testing a bit more realistic and used a lower-end PC.

PC Configuration:

- Intel P4 @ 3.40GHz
- 768 MB DDR1 RAM
- Windows XP SP2

The features that we looked for are as follows:

Resume support: The resuming of broken or interrupted downloads is one of the primary features that all Download Managers have. This saves a lot of time rather than re-downloading the entire file.

Mirror search support: A feature that any good download manager should have — mirror searches to add more sources for a download. A download manager should have the capability of automatically searching for alternative mirror links of the file that is being downloaded and resume download from any of them if the original download breaks.

Prioritised Downloads: A download manager should have the feature to let the user choose the order of download. Users should be able to either queue a specific download first or allot more bandwidth for it. In this way each file will be downloaded according to the priority set by the user.

Categorised Downloads: A Download Manager should be able to sort the file you are downloading into separate subfolders based on the file extension. Eg. AVI files will be put into a video subfolder and

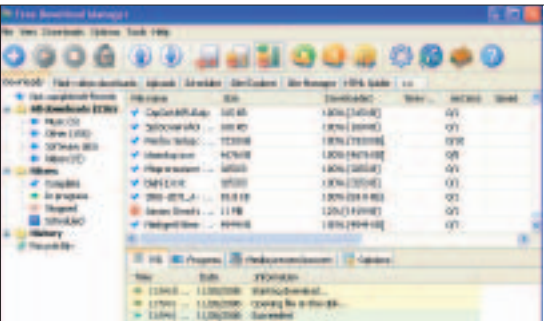
another when downloading the same file. The scheduler provided is not as complicated as we thought it would be. It's straight forward with option of Time, Date, Days (where you can even select which day of the week you wish to run the task), Hours and Minutes. It also includes additional features where a file can be downloaded from several mirrors simultaneously, and only particular files that you need in a zip file can be selected for download.

To download torrents you need to enable the BitTorrent protocol support in the download options. You can set an upload limit and even disable seeding if you want to.

FDM has the feature to download Flash videos straight off sites like YouTube and Google Videos. Just input the URL of the site like any other file download. After it's complete the default output is saved as an .flv file. FDM has its own audio and video convertor which stores files in .AVI, .MPEG4 and even .MP3. It also has preset formats for iPods and PSPs.

The Remote Access feature in FDM is pretty impressive. If you plan to leave your PC unattended but also want to monitor your downloads, or if you suddenly remember to download something else, then this particular feature will prove to be very useful. All that needs to be done is switch on the FDM Remote Control Server. For this to work you have to remember your IP which is displayed on the FDM remote control screen. Downloads can be viewed and new ones can be added using this feature. A username and password can also be set for security purposes. Free Download Manager is the only Download Manager we came across that has this unique feature of Remote Control.

FDM also comes with an upload manager called Free Upload Manager. Files were uploaded through wikifortio.com. This did not work, and the files we were trying to upload just refused to do so.



Free Download Manager — Managing multiple downloads easily

FDM used a maximum of 14.5 MB of RAM with a single download and attained a maximum speed of 213 KBps

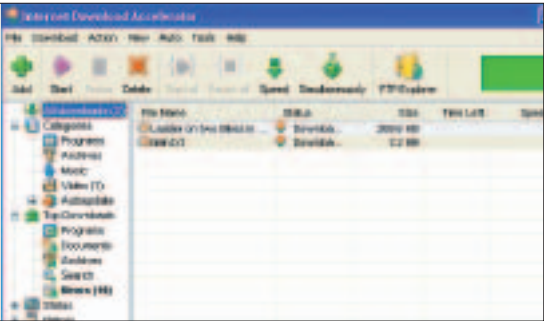
Internet Download Accelerator 5.6

Also known as IDA, this Download Manager is a shareware with a 30 day trial period.

You can set the number of maximum simultaneous downloads and have five variable speed limits. You can set the type of files that can be automatically downloaded or need permission before downloading with their extensions E.g. EXE and ZIP could be set as automatic whereas RAR and AVI could be removed from the list which would mean asking permission for the download. This feature is not present in FDM.

You could also embed an IDA Bar into your Microsoft Internet Explorer browser where you can view and set your download speed, view your downloads via a dropdown menu and also download all the links from the page you are at. A search function is also present which conduct searches through the Web site MyTopFiles.com.

IDA has its own FTP Explorer which pops out as a window when clicked. The FTP Explorer has its



Internet Download Accelerator 5.6

own set of file filters which can be set according to the users wishes. It works the same as FDM but is more user-friendly.

This download manager also has a Site Manager which helps retain information like usernames and passwords for a particular site, thus eliminating the need for re-entering them every time you need to download something from such sites.

IDA has quite a few features but it does not match up to that of FDM which has more advanced features like Remote Access and Video Converter. IDA can download Flash videos but does not have a video converter like FDM. It also does not have BT protocol support. Paying for this Download Manager does not seem like a wise option as you are getting a better one (FDM) for free.

IDA used up more RAM than FDM and reached a maximum of 20.6 MB. The download speed was the same as with FDM.

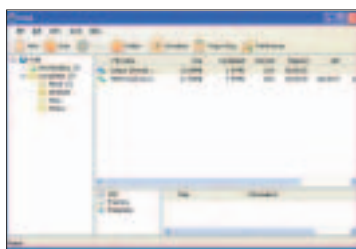
Download Accelerator Plus 8.7

When you think of Download Managers the first thing that comes to mind is DAP. DAP has been there for ages and is still has a huge following though slowly diminishing thanks to the new and improved download managers that are available.

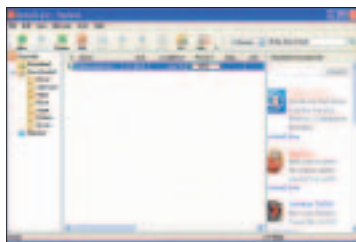
But even though times have changed, DAP has not evolved much. The GUI has improved from what it used to be and additions like an FTP browser and its own Internet browser have been bundled in the software package; still, it lacks some features like Flash video download and BitTorrent support.

Though it has a FTP browser we were having problems connecting to ftp servers. And if you look at the Internet browser it's definitely based on Microsoft Internet Explorer.

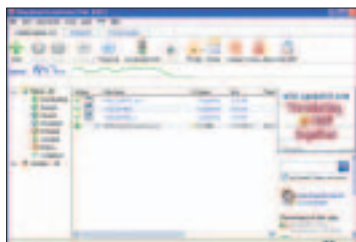
DAP claims to increase your download speed by 400 per cent, but when we tested out the free version it was not performing as per the claims. The download speeds did fluctuate.



Orbit Downloader – one of the simpler but efficient Mail clients



FlashGet – Improved features to offer



Download Accelerator Plus – With Internet browser and FTP browser attached tabs

tuate but overall it was the same as the others.

What has not changed with DAP are those very irritating pop-up ads that know not when to stop.

DAP has an upload button which leads to FileFlyer.com in an Internet browser tab. It still has the option of purchasing the Premium version which adds a few features like ZIP file previews, Multimedia file previews. These features are still not as good as IDA. If you really want to pay for a Download Manager we would suggest to pay for IDA. DAP may have ruled in the old days but it seems it cannot cope up with the young guns of this era.

DAP used a maximum of 12.5 MB of RAM when downloading the test file.

Orbit Downloader 2.7.8

Orbit Downloader is another freeware with a very simplistic approach. It does not have all the features FDM has. It does not have BitTorrent support, FTP support or a video converter, but is one of the best Flash video grabbers we have come across. When you install the software on to your PC it integrates itself with your Web browser. On visiting a Web site like YouTube, after restarting your browser, you will get a small little button when you drag your mouse over the video which says 'Get it'. On clicking, the download of the video starts directly, eliminating the entire process of copy-pasting a URL which is the case with FDM. There is no video converter or preview feature available for the download though.

The Scheduler is on par with FDM and looks almost identical. Orbit Downloader also has a filter system like IDA does in which you can set the file types that are allowed or not.

Even though Orbit Downloader has fewer features, it is still a good option to

use, as the GUI is very user friendly.

Orbit Downloader is the best when it comes to memory usage. A maximum of 3.5 MB of RAM was used while downloading the test file. The download speeds did fluctuate on the higher side but the outcome was the same as the others

FlashGet 1.9.6

FlashGet is another download manager that has been around for quite awhile now. FlashGet used to be shareware, but is now free. This Download Manager has actually grown with time unlike DAP. It has additional features like Categorized Download, BT protocol support, Scheduler and even a good monitoring filter.

It also has a Site Manager which basically functions also as an FTP explorer. The Site Manager also lets you view all the elements of a Web page.

The scheduler of FlashGet is equal in function as compared to the others we have tested. There are sound alerts which indicate when the download has finished.

FlashGet does have a column to the right which has a software search bar and their recommended software downloads. But these do not interfere with your downloads neither do they trouble you as a pop-up.

There are 2 versions of FlashGet available for download from their Web sites. The users who are used to the older version have the choice to download that and use it.

FlashGet used the most amount of RAM. It hit a maximum of 31.5 MB when we downloaded the test file.

All-in-all, after narrowing down to the best five Download Managers and testing them over and over again, we leave you with these last words. If you are looking for your download manager to have a lot of features then we would suggest the use

of Free Download Manager as overall it proved to be the best among the lot. If for some reason you just need to spend money, get yourself Internet Download Accelerator, which is a good choice, but still cannot compete with FDM. If you do not need all the features that FDM has to offer and want to go solely for performance, then Orbit Downloader is your best bet. In all honesty, if you're not using Free Download Manager, give it a try, it's available for free and is already in our Essentials section!

kumar.jhuremalani@thinkdigit.com

Features At A Glance

	Free Download Manager 2.5	IDA 5.6	Orbit Downloader 2.7.8	FlashGet 1.9.6	Download Accelerator Plus 5.6
Memory Usage	14.5MB	20.6MB	3.5MB	31.5MB	12.5MB
Resume Support	✓	✓	✓	✓	✓
Prioritized Downloads	✓	✓	✓	✓	✓
Categorized Downloads	✓	✓	✓	✓	✓
Mirror Searches	✓	✓	✓	✓	✓
Bandwidth Allocation	✓	✓	✓	✓	✓
Browser Plug-in	✓	✓	✓	✓	✓
Scheduler	✓	✓	✓	✓	✓
Flash Video Download	✓	✓	✓	✓	✗
BT protocol support	✓	✗	✗	✓	✗
Remote Access	✓	✗	✗	✗	✗



Improve Windows Font Display

GDI++ gets your windows fonts to look like text on OS X

GDI++ is a font rasteriser that looks better than Microsoft's font rasterisation, and even ClearType. The application is written to make fonts on Windows appear the way they do on a Mac OS X. The application is open source, free and can be downloaded from <http://tinyurl.com/5uwwcc>. GDI++ itself is a 70 KB download. All you need to do, is drag-and-drop any other EXE file onto GDI++.exe.

GDI++ uses a royalty-free font rasteriser called FreeType 2. It routes all font parameters through GDI++.dll instead of GDI32.dll, which is the default rasteriser for Windows. The improvement in everything from word processors to Web browsers is startling. GDI++ does away with the sharp, jagged edges of fonts in Windows by using sub-pixel rendering and increasing the weight of the fonts by up to four points. Each pixel on the screen is made up of three sub-pixels, which are cells of a particular colour. Pixel rendering turns the entire pixel on or off, whereas sub-pixel rendering turns on or off individual cells that make up the pixel. This increases the resolution of each character by three-fold, but under magnification, letters acquire a colour fringe, with a colouration of the specific sub-pixel that is used.

However, this artefact is not easily noticeable by the naked eye. Dragging and dropping Word onto the GDI++.exe will rasterise all fonts in Word through GDI++.dll. All other applications are

unaffected by these settings, not even another instance of the same application. There is a utility called gditray.exe that applies the settings of GDI++.dll globally, to all the applications that run on Windows, and Windows itself. By using this application, Explorer, the desktop and every application that uses fonts will be affected by the settings. Note that images of text will not be affected. The application nests in the system tray and can be conveniently toggled on or off from here.

Another application that uses GDI++ is gdiXXTuner.exe. This is a great application that allows a user to fine tune many aspects of the font rasteriser used. The application can work either through the GDI++.dll or through the default GDI32.dll. There are sliders available that lets you give a specific value to how much weight is added to bold text, how much weight is added to the default text, and the degree of slant added to the text that is italicised. There is also an 8x and 16x view of the rendering, which shows clearly the sub-pixel rendering and the amount of colour fringing created. Using gdiXXTuner.exe along with gditray.exe lets you apply fine tuned global settings to all the programs that run on Windows and Windows itself.

If you don't want to use gdiXXTuner.exe for changing the settings, you can do it directly by editing GDI++.ini. Open the INI file in Notepad, and enter the values that you want.

After this, either run GDI++.exe or use gditray.exe. You can also fine tune some parameters from here that are not allowed by the gdiXXTuner.exe application.

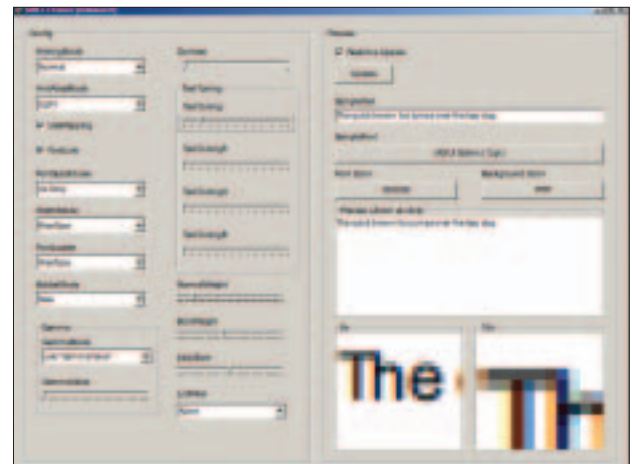
If you don't want to use the different font rasteriser for all programs, but instead want to use it only for a few programs, there are many ways to do this. In the command prompt (Start > Run > cmd), enter the path of the gdi++.exe, followed by the path of the application you want to run it in, and enclose it in inverted commas. To rasterise text in Internet Explorer through GDI++.dll, right click on the desktop, go to New > Shortcut and in the location field enter `C:\gdi++\Gdi++\gdi++.exe "C:\Program Files\Internet Explorer\IEXPLORE.EXE"` and click on OK. You may use this method for any other software, by replacing the path for that software. Another method to achieve the same result, is to create a batch file, type in `G:\gdi++\Gdi++\gdi++.exe "C:\Program Files\Internet Explorer\IEXPLORE.EXE"` in a text file. Save it as a BAT file. Now, double-click on this file every time you want to run an application through GDI++.dll.

Be careful when you are using this application. The text does become slightly blurry, and because the edges are not clearly defined, it might give people who are used to the normal text display on windows a headache. ■

aditya.madanapalle@thinkdigit.com



Left: text rasterised with GDI32.dll; right: rasterised with GDI++.dll



The options available in gdiXXTuner.exe



Remote Access For Your PC

Access your PC anywhere, anytime...

Remote access is good fun for some and really necessary for others. It seems rather useless at first, but it can be useful for pretty much anyone. It's like carrying your PC around with you wherever you go. Imagine being able to access all your applications, your documents from anywhere — at work, on vacation, from abroad, or through your laptop or cell phone sitting in the living room. There are a few known issues that can stop you from connecting to your PC, but there are ways to bypass these. We will explain and go through how simple it is to solve some of these problems.

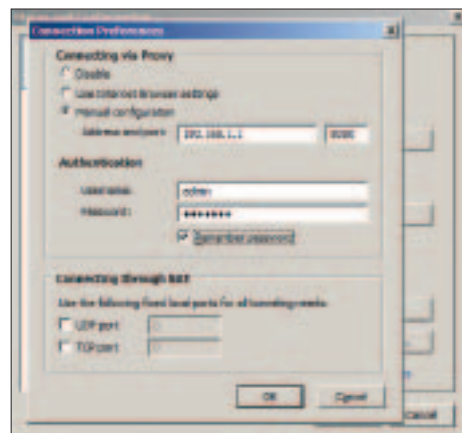
There are a few things to be aware of. Obviously, you need an Internet connection that stays on all the time when you're away from the computer. All the software we talk about should have open access to the Internet as much as possible. This basically means all the software firewalls on your computer should allow open access for them.

Making The Connection

Offices, large corporations and maybe a few internet providers block ports and provide only limited access to the Internet. Pretty much any work place today doesn't give every single employee a dedicated IP address. Even ISPs in the past have used a shared IP address and some even block incoming ports. If this means that a direct connection between two computers cannot be achieved, a third-party service needs to be used to bridge the gap.

Here's where Hamachi comes in. Hamachi is a virtual networking software that allows you to be part of a private network on the Internet, despite being behind firewalls and proxies. Hamachi has a free version and is available for download from www.hamachi.cc. Download and install the software. A virtual network adapter will be created alongside the physical network card on your computer.

Configuring Hamachi To Use A Proxy Server
Start Hamachi from the Start menu. If you are behind a proxy server, you need to enter the settings for the same in the Hamachi Preferences window. Click on the Configure Hamachi icon on the bottom right of the Hamachi window, and click on Preferences. In the Status view, click on the Detailed Configuration button under the Connection subheading. Click on Use Internet Browser settings if you want Hamachi to pick up the proxy configuration from your Internet browser. You can



Entering proxy settings into Hamachi

also manually enter the proxy address and port by clicking on the Manual Configuration button. Click OK when done. If you don't use a proxy to access the Internet, then there is no need to change the settings.

If you want more control and want an isolated VPN from Hamachi, there is a software called OpenVPN. The only downside is that it's highly complicated and requires a host computer running all the time with unrestricted access to the Internet.

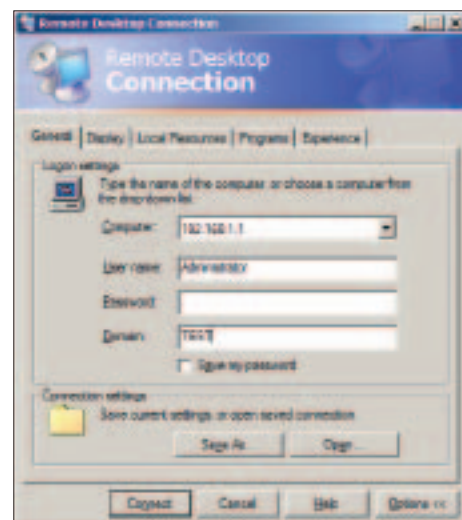
Connecting The Computers

Firstly, make sure all the PCs that you want to access have Hamachi installed. Next, you need need to create a network to which all the computers will connect to. Click on Create or join networks button and then on Create a new network. Give a unique name and password to the network. Remember this password. All the clients will use this to connect to the network. With the network set up, click on the Create or join networks button, and click Join an existing network. Enter the exact network name and password, and click Join. When you connect, you will see the other computers on the network. A flashing green light next to the computer indicates the PC is online.

Connect Using Windows Remote Desktop

There are plenty of remote desktop software for every platform. One that is available to everyone is the Remote Desktop Connection that comes pre-installed with every copy of Windows. First, Windows has to be set to accept remote desktop connections. Click on Start > Control Panel > System. Click on the Remote tab and click the checkbox "Allow users to connect remotely to this computer". Click on the Select Remote Users button. This selects the user accounts on Windows that can be accessed remotely. Click the Add button, enter the usernames and click OK.

Connecting to a remote desktop through Windows

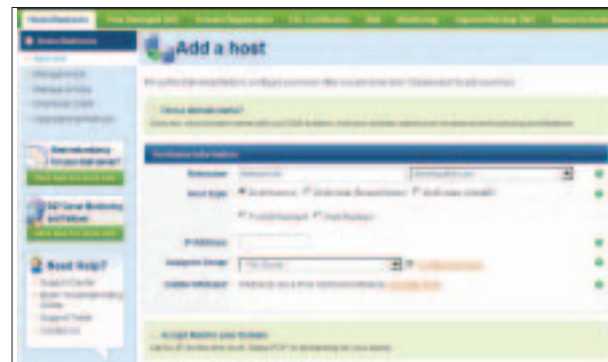


To access a remote PC, click on Start > All Programs > Accessories > Communications > Remote Desktop Connection. Enter the IP address of the remote PC on Hamachi. You can find this by double-clicking on the Hamachi icon in the system tray. If you have unrestricted access to the remote PC and you know the IP address, enter this IP. If you aren't sure of the IP, be sure to visit the site www.whatismyip.com from the PC you want to remotely connect to well in advance.

Setting up free domain hosting services

Services such as DynDNS (www.dyndns.com) or NO-IP (www.no-ip.com) provides free DNS services.

Instead of remembering IP addresses, you can remember a simple domain name. An example is remotetest.no-ip.com. An application on the client's computer updates the IP address to the domain name. You need to register with the site. Once you do so, login to your account on the NO-IP page. Click on Hosts/Redirects and click on Add Host. Enter a hostname and select a domain from the list of free domains. If you own other domains, you can select a group of which you want this new host to be a part of. Click Create Host when you done. With this done, all that's left is to do is download the client for your operating system and login using the same login information as the site. With the client running, the remote system can be accessed simply by using the domain name.

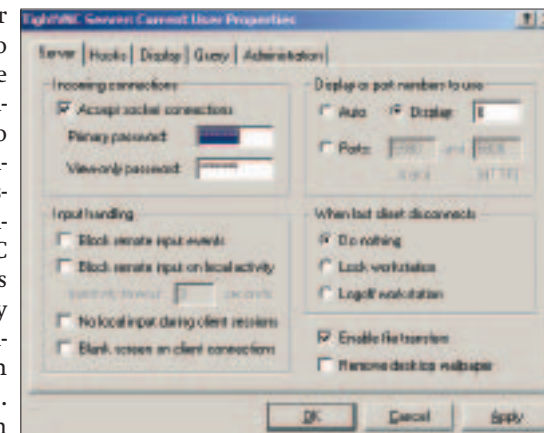


Creating a new DNS host

Connect using VNC

VNC is the other alternative to Windows Remote Desktop and is considered by many to be lighter, more optimised and customisable. The most commonly used VNC server-client is TightVNC. It is freely available for download from www.tightvnc.com. Another well known VNC solution is RealVNC (www.realvnc.com). Download and install TightVNC onto your PC.

On the PCs you want to remotely access, run the server application through the Start menu



Hosting a VNC server

or run the WinVNC.exe executable from the TightVNC folder. Right-click on the icon in the system tray and click Properties. Enter a password that you want to use when you access the PC. Click OK. Advanced options for quality and refresh rate can be set as well. These can help bring down the amount of bandwidth consumption. You can also make TightVNC all the time run as a service by clicking on TightVNC > Administration > Install VNC Service. This way, you don't have to restart the VNC server every single time you reboot.

To connect to the VNC server, run the VNC client. Enter the IP address of the VNC server and click on Connect. VNC servers can also be connected to through a browser-based Java applet. To access the remote PC through a browser, open the following URL: http://YOUR_IP_ADDRESS:5900. Enter the password and you will have access.

Using LogMeIn

One of the simplest ways to access remote PCs is to use an online service called LogMeIn. This service allows users to access PCs behind firewalls using a browser. Register an account on LogMeIn (www.logmein.com). Choose to create an account for the LogMeIn Free scheme. Once you have the account set up, log into it from the site.

Click on the My Computers link and then on Add Computer. Select the Free product and click Continue. Proceed and download the installer. Install the application on your computer and enter the computer name during



LogMeIn is both simple and practical

the installation process. Once the installation is complete, click on the computer you want to connect to. Enter the username and password for the account. You can then use the web-based remote access utility to access the desktop or even access files. To access the desktop, click on Remote Control and File Manager to access the files.

Remote access has been implemented in much other software. uTorrent and Free Download Manager are the best examples of this and they come with built-in features for Web access. With a virtual network, it's easy to share data with others and access common folders. ■

rossi.fernandes@thinkdigit.com



Organise Tasks With ToDoList

A small and feature-packed program for all your time management needs

ToDoList from Abstract Spoon software (www.abstractspoon.com) is a small, feature-rich and handy application to take care of all your time management needs. The 704 KB download comes with a bunch of plugins, and the program is open source. Using the software can be a little confusing at first. The interface is crammed with options, but the usefulness of the software cannot be denied.

ToDoList allows you to specify and estimate on the amount of time a task will take and allows you to fill in how much time is already spent on the task. Once this is done, the software can automatically calculate the percentage of the task completed, or lets you enter this value normally.

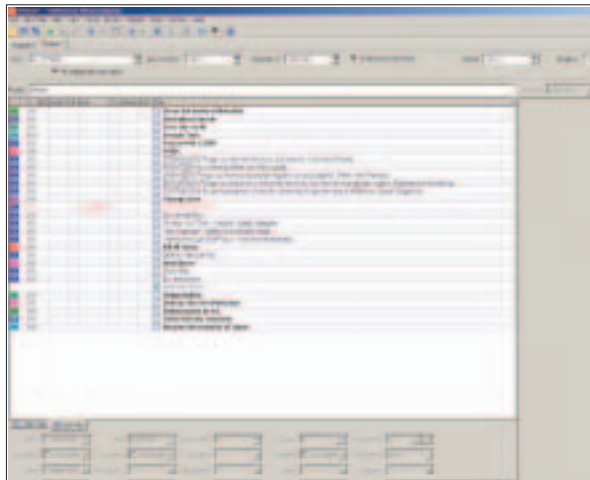
The first thing to do once you start ToDoList, is to change the way the software handles time. This aspect of the software heavily depends on where you are going to use it. If you are using it in the office, ToDoList considers 8 hours a day, and 5 days a week — the default settings. These settings will have to be changed for home use, school/college use or for different office hours. Go to **Tools > Preferences > Tasks > Time Periods**. Here, change the duration of the day and week according to your preferences.

Once you are done, go to **File > New Tasklist**. In the **Project** field, enter a name for your task list. Right-click anywhere in the task window. Select **New Task > At Top**. Now

define the task. The bottom pane is used for changing various attributes of a particular task. You can define a colour-coded priority from 1 to 10. Assign a start date, due date and due time, status, time allocated, and to whom the task is assigned to. ToDoList can be used to track work delegated to an entire team, or even an entire organisation, not just to track the tasks of an individual.

Right-click on any task, and navigate to the **Split** task(s) into menu, to divide the main task into sub-tasks. You can assign different sub-tasks to different people in a team, and keep track of how many tasks they have completed. As and when you enter the completion percentages of sub-tasks, the percentage of completion of the main task is automatically calculated. By default, a sub-task does not automatically acquire the attributes of the task in terms of priority, due date, or estimate time of completion. To change these settings, go to **Tools > Preferences > Tasks > Default Task Attributes > Attribute Inheritance**. Here, check the attributes that you want the sub-task to acquire. These are global settings for the software.

There are two views in the software — the tree view and the list view. The tree view has a directory-like structure that groups sub-tasks together under a task. The list view shows all the tasks in a list, with the tasks in bold and the sub tasks in regular text. There is a tabbed interface for switching between task lists and views.



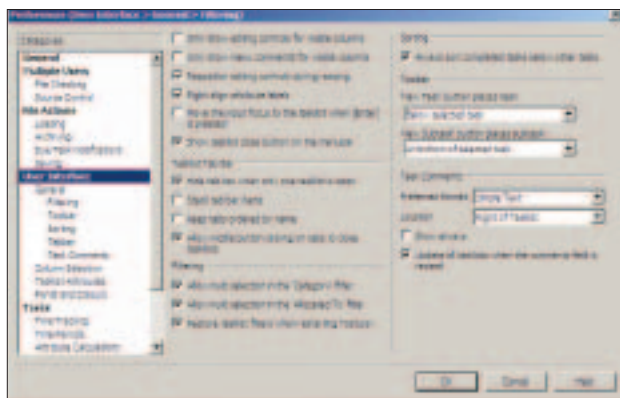
The main window of ToDoList in List View

A convenient feature in ToDoList is the ability to sort tasks in a number of ways — 25 ways to be precise. Go to the **Sort By** menu and select an option. Additionally, it is possible to filter tasks, and display only tasks of a particular priority, a particular due date, or a task allocated to a particular person. To do this, use the **Show bar**, which is below the menu bar and select options from the drop down lists. Multiple filters can be applied to the same task.

An incredibly useful feature in the task manager is the calendar available next to almost any field that requires a user to select a date. This allows you to keep track of due dates, start dates and completion dates of tasks in an almost effortless way. You can also feed in the recurrence of the tasks, so that the task does not show as being completed at the beginning of a new day. Tasks can be made to recur every day, week, month or even year. Additionally, you can set specific days, weeks, months and years when the task recurs.

In terms of customisability, and the sheer amount of features built into the software, ToDoList is a great tool for all your time management needs. Just make sure that you don't spend more time in organising the tasks in ToDoList, than actually working on the tasks.

aditya.madanapalle@thinkdigit.com



There are a ton of preferences to play around with



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A Solid UTM System

Nagendra Venkaswamy

Unified Threat Management (UTM) is one of the hottest industry topics in recent years. People think it's a "magic bullet" that can tackle all information security problems, especially for small- and medium-sized enterprises. On the other hand, some people have reservations. In this article, we will examine how a 5-in-1 UTM system can help protect enterprise networks at a reasonable

UTM solutions can provide an all-in-one security architecture with features equivalent to those offered by multiple security appliances

cost, and understand the advantages and limitations of such a system.

5-IN-1 UTM Platform

Many security vendors in the market claim to offer UTM solutions. However, what is a UTM system? A UTM device is defined as a firewall with extra protection features to avert DoS / DDoS, viruses and other malicious programs, spam mail and phishing attacks. Web filtering (blocking unauthorised addresses) may also be featured.



Before the current UTM “revolution,” enterprises had deployed multiple security software programs that included firewalls, anti-virus software, anti-spam appliances and URL gateways. These programs and devices have their own specific purposes. However, implementing so many separate systems is not cost effective. Enterprises dedicate vast amounts of resources to manage individual security appliances. IT staff would need to be trained on each user interface, with differing commands and settings across devices. Maintenance costs and troubleshooting delays would further increase with additional devices added to the mix.

The beauty of the UTM approach is streamlined management without sacrificing comprehensive security features — thanks to a unified operating system and management console. UTM solutions can provide an all-in-one security architecture with features equivalent to that offered by multiple security appliances. This can dramatically save time from having

to be trained on multiple software programs, as well as increasing responsiveness and effectiveness of system administrators in managing attacks. UTM also enables swifter migration, more centralised management, with reduction in operating costs. Deploying a UTM platform is actually a business consideration rather than a pure IT decision.

The UTM Potential

UTM solutions are designed to ease the workload of IT personnel. It is easy to manage and also saves cost. While UTM optimises IT resources, it must be properly implemented to be effective. An improperly configured UTM device can actually create more problems than it solves.

Some enterprises implement UTM without thorough planning. These companies might activate all the available features, thereby creating bottlenecks on their corporate networks. To prevent this problem, companies should divide their networks into different segments by usage, and turn off unnecessary features. For example, if an enterprise uses only a Web server and an email service, policies can be set up to block access by any other protocols. Moreover, only Web pages and email messages need to be checked. By carefully adjusting the features, network loading can be optimised. Enterprises should therefore choose flexible UTM products that allow granular definition of security policies and customisation of features, to ensure the network would not be overloaded and resources effectively utilised.

All UTM providers claim that their products efficiently tackle a wide range of enterprise security concerns. However, this is probably only valid if the vendor provides timely update of security information to identify the latest threats. Also, if vendors self-develop their own anti-virus, anti-spam and anti-phishing solutions, it is possible that these in-house solutions are not appropriate alongside the existing firewall. Unproven products can actually introduce extra risk by lulling an enterprise into a false sense of confidence, when in reality the security is inadequate. It is imperative that a company deploy a proven, reputable solution instead of a UTM device that has all the right marketing keywords on the package.

Finally, it is important to remember that a UTM system is only part of a total security infrastructure. Policies such as Web access control, identity recognition as well as resources management should also be implemented, otherwise there are significant gaps in the security posture that can be exploited by attackers and malware. ■

The author is Managing Director, Juniper Networks

Advanced Security For The Network

Organisations today are looking for an integrated and unified approach to network security — unifying the management of all of these disparate security technologies and productivity technologies into one unit. This is where Unified Threat Management (UTM) comes in. UTM is an emerging trend in the firewall appliance security market — an evolution of the traditional firewall into a product that not only guards against intrusion — but performs content filtering, spam filtering, intrusion detection and anti-virus duties traditionally handled by multiple systems.

UTM is a compelling and natural consolidation point in the evolution of information asset protection. Part technology and part packaging, it responds to the growing challenge of protecting information assets in the 21st century. Effective unified threat management requires:

Total cost of ownership: Total system costs must be less than the expected loss if there are security breaches due to a lack of controls. The solution must decrease the time to protection and ongoing overhead to achieve a lower total cost of ownership. Security is constantly changing and the system must adapt to these changes on a constant basis with little to no user intervention.

Coordination: Security breaches can occur between mismatched technologies, so when possible, layer your approach to security. Since many threats have multiple attack signatures one layer prevents a portion of an attack, another layer catches the rest. The security posture of the network must adapt in unison for comprehensive protection.

Reduced complexity: To achieve maximum security, solutions must be understandable to implement and components must work well together, or incident detection (and resolution) becomes difficult, if not impossible. Vital considerations include time-to-response and automation of the appropriate protection.

Unified Threat Management addresses these and other requirements by bundling together key information and security functions, and providing simplified administration. Efficiently packaged and effectively delivered, it reduces the cost and increases the reliability of a company's security program.

Source: SonicWALL

Securing Your Portal

Amuleek Bijral

Enterprise and consumer portals are an integral part of the business infrastructure of organisations in many industries – including financial services, healthcare, telecommunications, and government – and enable customers to increase their direct participation in key business processes. However, accompanying this increased usage, are concerns about privacy, secure access management, fraud and the increased risk and cost of security breaches. The concerns are magnified as the external user population grows.

Portals, typically contain important information such as financial assets or health information, and are deployed to user populations where authenticating users and controlling access to resources are critical. The strategic importance of these portals heightens the need for organisations to implement security solutions that meet internal policies, address regulatory requirements and provide the right level of security to protect customer identities.

Too often, portals are not properly secured, thereby inviting unauthorised access to company networks by curiosity seekers or even worse, hackers and fraudsters. The following tips are designed to assist you in securing your portals and protecting both your network and your customers.

Strengthen Your Portal

When strengthening security, you can achieve more with your portal by ensuring that all users – whether employees, partners, suppliers or customers – have secure, convenient access, but only to the data and resources they need to perform their necessary tasks.

Centralise your access policy administration. By using secure Web access technology, you can manage and enforce your portal access, control policies centrally and cost-effectively based on end-user roles, risk level or dynamic attributes.

Know your customer. Secure portals begin at the initial customer enrolment phase. Make sure your customers are who they claim to be. Leverage knowledge-based authentication at initial enrolment to verify user identities.

Record each action. A log management capability will enable you to detect unauthorised activities in real-time and to ensure logged data is available for audits and inves-

The following tips are designed to assist you in securing your portals and protecting both your network and your customers

tigations and properly stored over its entire lifecycle.

Simplify Customer Security

Traditional approaches to security are no longer sufficient as customers increasingly demand convenient network access. However, with the dramatic rise in online fraud and unauthorised access to enterprise networks and confidential information, customers also require that you provide the highest level of security protection for your network and their sensitive data.

Organisations require a solution that delivers strong portal authentication without hampering the customer's experience or privacy. Increase ease of use for your customers by enabling access to multiple applications within your network with single sign-on (SSO), thereby eliminating the frustration of tracking multiple passwords.

Risk-based authentication delivers both strong security and convenience to customers. This allows for a convenient user experience by minimising the number of unnecessary challenges and lockouts.

Inspire Customer Confidence

Organisations that instill confidence in their customers by ensuring their personal and business information is safe, will clearly have a competitive edge. It has been proven that providing secure online access increases brand loyalty and the number of transactions that customers will conduct online.

Organisations should also proactively educate customers about the security measures and why they have been implemented through various online and offline marketing vehicles.

In addition, by deploying a security solution that provides customers with site-to-user authentication, you are assuring them that they have gained access to your legitimate site, and not a fraudulent site designed to capture their credentials for the purpose of committing fraud at some future date.

The resulting sense of security will boost customer confidence without compromising the user experience, and your organisation can experience a significant increase in portal adoption and customer satisfaction.

The author is Country Manager, India & SAARC, RSA, The Security Division of EMC

The Future of MAID Storage

Jo Maitland

In the five years since its introduction, MAID-based storage deployments can be measured in the hundreds, rather than thousands.

MAID is a storage technology that packs a large number of disc drives into a single array and spins only those that are being used at any given time. This significantly reduces the power consumption of the system, and according to vendors that sell these products, also prolongs the life of the drives. For customers, it means the ability to keep much more data online instead of carting it off to tape. The acronym was coined in the late 1990s at the University of Colorado in Boulder, where students were working on a research project to build high-density online storage that consumed less power. COPAN Systems, located in Longmont, Colorado, productised the research and was the first company to ship a system, in February 2004. Since then, COPAN has installed 300 or so systems worldwide, and a handful of other vendors have joined the market.

Who's Using It And Why?

MAID storage is designed for infrequently accessed data, sometimes referred to as persistent data, where performance (IOPS or bandwidth) is not a big concern. With better response times as compared to access times in magnetic tapes, MAID storage has made some headway in the backup market, where customers are eager to increase service levels and improve the reliability of backups. If you want disc-based backup and have power or cooling constraints in the data center, MAID storage is a killer product. However, most IT shops have retained the traditional tools. Financial services companies, Web 2.0 firms, and government agencies have been early adopters, because they keep large quantities of data online and are often located in major cities short on power. Chicago Mercantile Exchange, Credit Suisse, MySpace.com, and the U.S. Department of Defense are all MAID users.

Drawbacks To Adoption

If you have even considered using MAID, chances are that you ruled it out for a handful of reasons. Limited ways to consume the technology, performance concerns, a lack of tools to identify what data to place on MAID storage,

MAID is expected to be a part of the long-term it strategy of organisations because it has the highest density, lowest power consumption, and longest drive life of any disk-based technology.

At A Glance

Massive array of idle discs (MAID) storage, a technology that radically cuts down on the power consumption of disk drives by spinning them down or off when not in use, has barely made a dent in the market. Despite the hype around green IT, there are several reasons for the slow adoption, in particular the requirement to trade performance for more energy efficiency. This is changing with some interesting shifts in the technology that will likely make MAID storage more appetizing for IT shops over the next 12 months.

and short refresh cycles have all been major obstacles to most firms' implementations:

Limited ways to use the technology. To date, the popular way to access MAID storage has been via a VTL interface in conjunction with a backup application. This has meant a lot of work on your part to figure out how to integrate these systems into an existing backup environment. Furthermore, tape libraries and backup environments are long-term investments where change is unwelcome.

Performance concerns (and myths). There has been a lot of fear, uncertainty, and doubt (FUD) about MAID storage that has obscured some of the real concerns about the technology. Some of the myths floating around have included suggestions that power savings from drives being idle are eaten up by the additional power required to spin the drives back to life. That turns out to be nonsense. And similarly, so is the claim that hard drives fail more often when they are spun on and off. COPAN argues that its software proactively monitors and manages drive health by periodically exercising all disks and detecting potential drive failures before they occur. Better management of the drives actually prolongs the mean time between failures, the company claims.

But there are some less well understood issues around the use of MAID given its performance characteristics. For example, COPAN Systems packs 896 1TB SATA drives into a single cabinet, spinning a maximum of 25 percent of them at any one time and queuing requests as they come in.

In the event that data is requested from a logical unit number (LUN) on a RAID group

Vendor	Product	Description of MAID features
COPAN Systems	Revolution 300A, 300M, 300T/TX	Only 25% of drives can be spun up at any one time, maximizing energy savings.
EMC	Disk Library 4000 series	Spindown automatically places inactive drives in sleep mode and activates them on demand, but they must be set by disk drawer and not individual drives.
Fujitsu	(in ECO mode) ETERNUS8000, ETERNUS4000, ETERNUS2000	ECO mode manages the on/off state of the disk drives' spindle motors based on policy settings as well as usage patterns. This means the disk spins only during a set period unless the disk is accessed more often than expected.
HDS	AMS 1000, 500, 200; WMS 100	HDS is a professional services engagement to select RAID groups appropriate for power savings and customize scripts to spin up and spin down drives.
NEC	D1-10, D3-10, D8-10	Using dedicated software control, this system turns off the motor power of unused disk drives. This leads to power consumption reductions of up to 30% compared with conventional models.
Nexsan Technologies	SATABeast, SATABeast Xi, SATABoy, Assureon, DATABeast, SASBoy	AutoMAID is user-selectable, enabling users to determine the level of response time performance to energy savings. Supports VTL, full file format D2D, and standard RAID implementations.

Source: Forrester Research

that is powered down, power management software will spin down an operational LUN when it's no longer in use and then power up the LUN that contains the data being requested. This means a delay in getting data on or off LUNs depending on what drives are currently spinning at the time of the request. The reduction in power consumption can be as much as 85percent compared with traditional storage arrays in which all disks are spinning, but not all applications can tolerate the latency introduced by the spin-up process.

Lack of software tools to identify appropriate data for MAID. Most organizations have little to no insight into how much or what kind of data they have. Couple this with a shortage of software to specifically identify persistent data suitable for MAID storage and it's no surprise adoption has been slow. Most storage architects know that transactional data on a MAID system will fail, but beyond that, they're not confident about which of their data has the right access patterns for MAID. It would be helpful if archiving software vendors identified which data within their applications goes on what storage device and moved it there, but so far vendors have been slow to do this work.

Short refresh cycles. Tech refresh cycles have been extended, but not by much. One of the toughest problems in building a long-term archive is preserving the data in the system through multiple generations of technology. COPAN alleges it has been able to extend the life of its storage from the typical three-to-five-year upgrade cycle to seven years. It's a small step

forward when you consider building an archive that will last a hundred years.

MAID Vendors

Vendors with MAID storage products include COPAN Systems, EMC, Fujitsu, Hitachi Data Systems (HDS), NEC, and Nexsan Technologies

The Future

Although the lack of ways to consume MAID storage has delayed its adoption, that's set to change, as the biggest proponents of the technology, COPAN and Nexsan, have recently introduced network-attached storage (NAS) technologies to branch out beyond the backup market. COPAN has bundled Quantum's StorNext file system with

its MAID arrays to enable file archiving, and Nexsan recently unveiled a NAS gateway based on Windows Storage Server. Furthermore, the combination of data deduplication and replication will mean that vaulting data offsite on disk is a possibility. MAID will enable data vaulting companies that use low-grade data center space in terms of power and cooling to offer a disk-based backup, restore, and vaulting service.

MAID is also evolving from a binary "on" or "off" mode to a more flexible power management scheme that balances energy consumption against the performance and availability needs of the application.

On the issue of energy efficiency, data center power and cooling considerations are set to become more prevalent, especially in Europe and the Far East where this is already a critical problem.

Vendors need to reduce the power consumption of all components in the system, not just the drives, according to Ethan Miller, professor of computer science at the University of California in Santa Cruz. He says the controllers and CPUs in MAID storage technology can consume 150 to 200 watts apiece and are constantly running. Miller is working on a project in archival storage called Pergamum, which aims to develop a long-term archive using low-power processors, SATA disks, and non-volatile random access memory (NVRAM) such as flash to hold metadata stores. When you consider the implications of searching an exabyte of storage, the address tables for all that data better be on fast storage.

The author is an Analyst with Forrester Research

Understanding WiFi Security

Capt. Raghu Raman

Wi-Fi stands for “wireless fidelity”, a throw back from the audio terminology of “high fidelity”, though the phrase just signifies any network connection that is a wireless transmission based connection.

In simpler terms, think of it as a radio broadcast — except that instead of audio, Wi-Fi transmits data. The typical home user is likely to encounter it when she gets a broadband connection, which terminates into a router at home (like cable TV terminates into a set-top box), only in this case, the cable terminates into a Wi-Fi router.

A Wi-Fi router is like a mini broadcast station that broadcasts in all directions. This means anyone with a receiver (typically a laptop) can receive the broadband connection

Recent events have raised concerns around the usage of wifi. If you know the fundamentals of the technology, it can be a safe and useful tool.

signal, use it, or also eavesdrop on the communication. Think of it like someone splicing a parallel instrument on your telephone line. Now, the rouge instrument can receive or make calls from your line — and for all practical (and law enforcement) purposes it will seem to originate from your phone.

Be aware that all 'hotspots' — public Wi-Fi enabled spots like airports, hotels, etc., are insecure. You may use them for browsing, but do remember that using hotspots for financial transactions can prove disastrous.

So there you go. If you follow the above steps — you should be alright. However, if you are looking for a more robust protection or use your home Wi-Fi for official work, then you need to call in the professionals. Because as they will tell you — these steps may stop a causal attacker — but for a professional, they are only deterrents.

The author is CEO of Mahindra Special Services Group

How To Secure A Home Wi-Fi Connection

So does that make Wi-Fi connections insecure? Well, the short answer is NO, just like a car that is competently driven, is safe! So how does one secure a Wi-Fi connection? Read on.

To begin with, the problem lies with the plug-and-play nature of a typical Wi-Fi router. Most home usage routers are bought over the counter and the manufacturers configure it for novice usage. Which means security configuration is non-existent. Just like say your mobile phone's default pin no. And most users don't bother changing the default configuration. Again like the mobile pin no!

There are few simple steps that one can take to make their Wi-Fi connection safer. Firstly read up the manual. If that is cumbersome (it usually is) — download a two page instruction set on how to secure the router from www.mahindrassg.com or watch a video which shows you how to do it step by step.

Secondly — change the default password for the administrator user of the router. Do this now! You must because — if that is compromised, then all advice that follows is pretty much useless. And don't put easily guessable passwords. So 'Linksys' or 'NetGear' is not a smart choice (these are names of the common routers and a surprising number of users choose them as the administrator password! And while you are at it, enable the firewall on the device.

Thirdly — place your router closer to the center of your home/office to prevent spillage of the signals outside of your physical premises. Some of it will still happen. That is unavoidable. Also switch off the router if you are not using it. Apart from security issues — someone could simply be 'stealing' your connection and you will have to end up paying for that data download.

Ok, now it gets a little technical. Get to the "Wireless Security Setting" page of your router administrative console (or get a teenage nerd to do it for you — make sure you can trust the nerd! — or watch the video mentioned above). Once you are in this console you have to do the following.

Change default SSID or disable it altogether if not required. Turn on WPA encryption and use a strong password there as well. This step will encrypt all traffic passing in your wireless network.

Every network card has a unique address. To find that simply type "ipconfig / all" in your command prompt window. You will see a line called Physical Address followed by a series of 12 digits and alphabets separated by hyphens. Something looking like this: 00-RR-HH-67-54-HF. That is your laptop's physical address. Enter those addresses into the Wi-Fi router and configure it to accept connections only from those addresses.



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Clear Sky



158 Fallout 3



162 Fable 2

Digital Leisure

Technology Beyond Work

Crash And Burn

Aditya 'Anorion' Madanapalle

FlatOut Ultimate Carnage is the third instalment of the FlatOut series. The game was developed and released jointly by Empire Interactive and Bugbear Entertainment. FlatOut Ultimate Carnage is an arcade racer with heavy emphasis on destruction. The other cars can be wrecked, your own car can be damaged till all the innards are showing, pillars, tankers, vehicles, dividers and even entire shops in the environment can be smashed to bits, and to top it all, the cars are driven by crash test dummy-like figures that can be driven over or humiliated in a score of ways.

The game suffers from a serious console hangover, with even the menu interface asking you to navigate through it using the A and B keys. The game offers a career mode, a carnage mode, a multiplayer mode and a party mode. The career mode lets you buy cars and race them against other players. At first, you will get what seems to be battered cars, but later on in the game sleeker, slicker models open up

to you. The loading screens show a virtual opponent you must handle in the race; all of these characters are so unoriginal that it is painful.

The carnage mode is much more addictive, offers a more fluid gameplay, and is more rewarding than the career mode. It is a mixed bag of different racing styles, combining races, death-match derbies, beat the bomb runs and stunts. The races encourage you to smash through the surroundings to gain nitro, and cross the tracks in time. The game is very demanding, and requires you to plan out the tracks well in advance. The game does get a little irritating when you get stuck for no fault of your own – either by a pileup of cars, which is pretty common or a pile-up of smashed material, which is uncommon but which eats up precious time. Deathmatch derbies is more or less like automotive warfare, with powerups available in an arena, and loads of smash able things strewn around. The beat the bomb runs are fun too, where you have to cover as much ground as possible before a bomb in your car goes kaboom. The most interesting and fun aspect of the game are the stunts, which is the part where you thrash the virtual driver in inventive ways. You can hurl him through rings of fire, aim him at a dart board or a

target, play baseball using him as the ball or send him skipping over a pool like stones over water. This game definitely has one of the most detailed driver models we have ever seen in a racing game.

The party mode is a fun little feature that lets you play all the stunts from one interface. There are a few preset sets of stunts that you can play, and it is configurable to allow many players to take turns playing. You can also make your own customised stunt bouquet. This game gets a few cookie points just for concocting this mode and all the stunts inside it.

The graphics are excellent; there are no questions about that. The level of detailing is also appealing. What makes the game go that extra mile is the realistic foliage, the grass, and the splashes of water. When a car gets wrecked, there is this a huge and totally cool fireball that takes up the entire screen. The soundtrack is mostly made up of slightly heavy rock songs by bands like No Connection and Dead Poetic – egging you on to some serious demolition.

It's a pity that the game does not have any kind of local multiplayer mode over LAN. Apart from that, it is an engaging arcade racer, and has its moments of pleasure to offer. If for nothing else, buy it for the stunts.

aditya.madanapalle@thinkdigit.com

FLATOUT

ULTIMATE CARNAGE

What We Love
Target practice with the crash test dummy

What We Hate
The done-to-death characters

SKOAR!: 6.5/10
Publisher: Bugbear Entertainment/
Empire Interactive
Distributor: Milestone
Price: Rs 1,000



A Journey, Not A Destination

What We Love
 Its art direction and humour
 Its dialogues and voice acting
 Its fun combat system
 and its cool dungeons
 Roleplaying (expressions,
 relationships, jobs, economy)
 The dog and how it replaces the HUD
 The breadcrumb trail that points
 to where you ought to be
 Relationships, and owning property

What We Hate
 The world is not very open-ended
 Combat is not very tactical
 Shallow roleplaying and morality
 No real penalties
 Ho-hum villain
 Dog fails to create a strong
 emotional bond
 No proper map

**"Do you like sex?
 The physical act of
 love. Coitus.
 Do you like it?"**

It has been a really, really, long day. I just fought these magic-dudes force-pushing me around; opening me up for their henchmen. Must have been 50 of them.

The swamps are infested with the rotting undead and the banshee-mothers have knife-wielding tots on their knees. Hack hack hack, some fancy shooting and fireballs, thrown in for style.

Then behold.. town of pirates and whores – not one filthy soul so much as waves at me. This really, really hurts. This needs fixing of course. They must love me. All of them. Vital.

The first thing to do though is to make the best of the town's destitution. Shopping, not for clothes but shops and houses – cheap as they are.

Buy the stone-cutter's shop, the blacksmith's and the town's watering hole. The salon's called Curl Up and Dye – I want. The more I buy, the more I earn.

Now to impressing the locals. A head for a trophy works. So does playing the lute for the chicks. Let's top this off with a nice long fart. Ah yes, everybody loves me.

"Do you like sex? The physical act of love. Coitus. Do you like it?" asks one in a rather

revealing outfit. Do I ever... Thumbs up. This town could use a bastard spawn of mine.

Ego Massage

Fable 2 constantly rubs you the right way. It adores and worships you, as this world needs saving. It also forgives you. For instance bigamy is an achievement. Just don't let the two (or more) near each other, or you might need to kill one. Go on a villainous rampage and get the respect of shopkeepers. How about a discount? Bloody nice. Go on to force the town's economy to collapse by looting and murdering? The resultant real-estate market

crash, allows you to pick the best houses at a killing. And if you would ever want to change your wicked ways, then you could offer large donations to the local temple, to literally wash away your sins. Ain't religion grand?! So relax, and just enjoy yourself.

In many ways, the game is like your companion dog. It doesn't care which way your morality falls. It loves you – tail wagging – and just wants to play fetch...

Playing Fetch

If a good ego massage doesn't do it for you, then the game's humour, combat and art direction will.

The amount of love and detail put into creating *Fable 2* shines forth and constantly keeps you amused. Like when you hear your companion quip when he meets the aforementioned constantly-chattering blind hag: "...blind eh? I would've preferred mute". The game is self-aware and will constantly poke fun at itself, venting potential frustration through humour.

Falling Short

The game will never frustrate you; even death can literally be brushed off for the price of a scar or two. And therein lies its biggest fault – the game's a little bit

shallow. Farting as a means of making amends with your beleaguered wife only goes so far, before falling flat. So does the combat – as fun as it is, it's not very strategic, and thus not very satisfying. The world is more open-ended than *Fable 1* but it's not quite enough. The game's morality – the fulcrum upon which the entire game moves – is easily fooled: kill everyone, and then throw in cash to be forgiven. Eat meat to gain weight and lose purity, and then binge on celery to lose it as quickly.

But even while you are abusing its very forgiving systems, it will keep you entertained. It never

bore, never punishes, never judges (except for when the children tease you when you dress in a frock). *Fable 2* is a fairy-tale casting you as the prince or princess, charming or otherwise.

Ultimately though, you should play it – because it's the most unique, fresh, innovative, enjoyable game you will have ever played. Heck, any game that quotes from *The Big Lebowski* is A-OK in my book. Peter and his team can sell me a bridge anytime.

Developer: 7/10
 Developer: GSC Game World
 Web site: Deep Silver

Lousy Name, Great Game

Agent001

Like most science fiction survival horror games of our times, *Dead Space* starts off with a search and rescue mission – heeding to a distress call from a mining ship called the USG Ishimura. Needless to say things take a sour turn as the rescue ship crashes into the ship in distress. Everything then goes from bad to worse for the three surviving members of the rescue mission, and the priorities shift from rescue to survival. In the thick of this is our protagonist, an engineer named Isaac Clarke (named after science fiction writers Isaac Asimov and Arthur C. Clarke).

As the game progresses, you discover that the USG Ishimura was illegally carrying out a mission in restricted space and nearly its entire crew has fallen victim to an alien infestation. The good news is that the infestation is capable of reanimating the dead into nasty and grotesque creatures. Time to lock and load!

Resident Doom Bio Space (Something Borrowed)

Dead Space takes cues from several successful games in this genre to set up an atmosphere rife with fear, and a claustrophobic feeling of impending doom. As an engineer, your task through most of the game is to fix the failing systems of the USG Ishimura and to make it space-worthy enough to get the hell out of there. Assisting Isaac on his mission is a protective suit of armor (rig) and a decent selection of weapons. An improved version of the suit, that offers better protection and weapons can be purchased at shopping kiosks that are scattered throughout the ship, in exchange for credits. Along with all the weapons, the suit can be upgraded at work benches by using power nodes that can either be bought or found around the ship. Using power nodes to upgrade the suit will improve your hit-points and oxygen capacity. The rig is also equipped with two other abilities: telekinesis, that lets you manipulate object remotely like some sort of gravity gun... and stasis – that slows down objects and creatures. The abilities find use both in combat and outside, the latter to solve environmental puzzles.

These abilities can be upgraded to increase their range and duration. Similarly, upgrading weapons will increase their damage, ammo capacity and reduce the reload time. On accessing a work bench, the game opens up a non-linear upgrade path that can be compared to a circuit board with empty power node slots. There are various options available with the upgrade path and depending on your playing style you can choose the attributes that you want to upgrade while ignoring the rest. Having said that, I feel that choosing between the upgrade options is more of a necessity than choice as there aren't nearly enough nodes available to fully upgrade your arsenal. This also leads the player to select a playing style that further intertwines with your choice of upgrades.

Watch My Back (Something New)

While the game borrows from its genre-leaders, the developers at Redwood Shores Studio have also introduced some very unique elements. First up is the game's style of heads-up display (HUD) and storytelling: the designers have completely done away with the traditional style of displaying information and replaced it with a well thought out way of interfacing with the environment and displaying vital information. The game plays in an over-the-shoulder camera mode, so health is displayed in the form of 'a spine' on the back of Isaac's rig that extends from his neck to his lower back.

Other details like map, inventory and mission objectives, along with video conversations are displayed using holographic projections that do not interrupt the game's flow and allows the player to continue navigating and interacting with the environment. This adds a dose of immersion into the game and also retains the continuity and atmosphere of this science fiction title. Additionally, the game does away with weapon crosshair and instead features an aiming mechanism in the form light beams that extends out the weapons. Also worth mentioning is the level of detail and realism implemented in the main character model. Idle animation shows Isaac's body slightly raising and falling as he breathes and his fingers on the weapons moving over and across it, from time to time. Isaac's head moves and follows objects depending on whether he is watching a holographic projection or assess-

SKOAR!: 8/10
Developer: Redwood Studios
Publisher: EA

Distributors / Prices
Redington / Rs 2,499 (Xbox 360)
Milestone Interactive Software Limited / Rs 2,799 (PS3)
Excel / Rs 999 (PC)

DEAD SPACE

ing the environment. Taking a certain amount of damage makes his body slump and running animation changes to show him dragging his body along; and low health is further indicated by heavy breathing.

Love You To Pieces

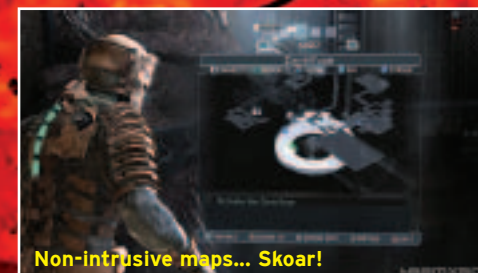
The combat system has been given a fresh coat of paint when compared to what we are used to seeing. Since we are stuck in space, ammo is in short supply and the quickest way to dispatch the cronies is by means of dismemberment. That's right – you need to slowly hack away at the enemies' limbs using your arsenal of ranged weaponry, and then closing in to stomp the freaks to oblivion. If you find yourself out of ammo in the thick of the battle, you can pick up an object using your telekinetic power and hurl them at the enemies. A further layer of depth is added to the combat system by giving an alternate fire mode to every weapon.

The game regularly pits you against new types of enemies, making you constantly think of new and efficient ways of dispatching them. Thankfully, the entire game is not spent inside the ship's corridors and it often throws the player in zero gravity environments and the vacuum of space. As you can imagine, this drastically changes the game dynamics and adds challenges like keeping an eye on your oxygen meter as you dispatch the enemies that come flying at you from all directions. Without giving too much away, let me say that game levels have plenty of variety, and keep the game fresh; rarely will you say 'here we go again'.

Even on normal difficulty, most of the game can be quite challenging, coupled with the dreadful environment and well-scripted (and scary) enemy encounters. There are times when the game can get a little predictable. However, having said that, the game designers have done a pretty good job of keeping the player on the edge most of the time. The developers seem to have a good understanding of the genre and have effectively used lights and sound to make this game quite a scary venture.

The game is divided into 12 chapters and this gives the player roughly 10 hours of gameplay. I imagine, like most games in this genre, the replay value of *Dead Space* is greatly reduced as the game becomes drastically less challenging and scary once you know when and where your next encounter will be. Overall, this is perhaps the best and most innovative title to come out of EA stables in a long, long time and is unfortunately also the most underrated game of this year.

The only way EA can ruin this franchise, is by throwing it in their mill of annual cycles, and not surprisingly, they have already announced a sequel in the making! Sigh.



An Embarrassment Of Choices

Agent001

Choices. That's what *Fallout 3* is all about. It's also about lost time spent playing this game.

So you are supposed to follow your dad. That's the setup. He went off into the big bad world, leaving you locked inside an underground vault. He doesn't want you to follow his footsteps, so be a good boy and stay indoors. As setups go, it's not the most original one. But you trudge through the first 30 minutes or so – and these are surely the most boring minutes you will

spend in *Fallout 3* – to make it to the outside. And suddenly, everything clicks...

Fast forward about 47 hours and a thousand kills later: I find myself in a remote corner of the wasteland – this post-nuclear, post-apocalyptic, post-civilized world order. The rules are simple: shoot or die. It's about choices.

I randomly pick a door and enter; to be greeted by a collector of Nuka Cola – the Coke of this world. Drinking it gives you a slight health boost but also irradiates your body – killing you over time. Choices. She would like me to

collect 30 bottles of Nuka Cola Quantum – a unique variation. I agree and she promises to pay me good cash and give me a "secret prize you're gonna love". Using my high charisma, I find out that the secret is a schematic for making my own Nuka Grenade – a high-level explosive that also bathes my enemy in harmful radiation.

As I leave her home, I bump into her 'protector', who is incidentally looking for some lingerie I happened to be carrying (don't ask, best that you find out for yourself). He tells me that he

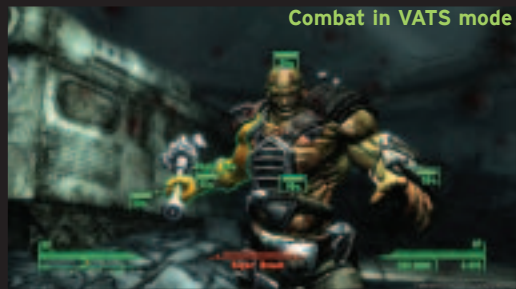
The Wasteland, your playground



Eat this you ugly ghoul



Combat in VATS mode



Father... Yes son... I want to...



A Bloody Mess – the only way to waste em



Speak when you're spoken to



would like to do the 'horizontal bop' with her, and at one point even agrees to a threesome... but I digress. To impress her and thus get to the horizontal, he would like to give her the Quantum bottles instead. I ask him to double the price for each bottle, and he agrees. My choice is then: twice the money at the cost of losing the Nuka Grenade schematic. It's all about choices.

That was just a small sampling of the kind of decisions you constantly face in *Fallout 3*. The choices range from the look of your character, to mass-murder for a few bottle caps – the game's currency. And within this gamut of extremes fall the little choices – Strength or agility? Combat or charisma? Ranged combat or melee combat? When wounded, do you eat to heal – irradiating yourself – or do you risk it and head back home wounded, to recuperate in the safety of your own bed? While fighting do you bring enemies out (boring), or do you go in guns blazing (all right!)? Do you spend your skill points upgrading your gun skills, or do you throw it in repair instead?

The biggest choice however, is whether you want to even play the game forward. The world of *Fallout 3* is so vast, so littered with a myriad of things to do, with places to see, and mutants to kill – that you might very well find yourself not giving a damn about the father you followed out of the vault. I know I didn't. 60 hours in and all I have done is everything else except what I am

SKOAR!: 7.5/10

Developer: Bethesda

Studios

Distributor: NA

Price: NA

Platform: PC, Xbox 360, PS3

What We Love

Huge world, yours for the exploring
Visceral combat system (VATS)
Post-apocalyptic setting
Lots of side-quests to lose yourself in
Well-written, outside of the dialogues
40's music. So good

What We Hate

Combat without VATS is a miss
Combat not as tactical or challenging as previous Fallouts
Moral choices feel flat and without emotion
Most dialogues come across as artificial and shallow

What Really Sucks

Not officially available in India because it has two-headed cows called Brahmins that you can kill

supposed to be doing. Yeah, I'll find him. Eventually.

Shots Fired

Combat in *Fallout 3* is best enjoyed using a setup called VATS. While you can play the game as a first-person shooter, you'd rather not. Under VATS, the gameplay is paused and you can target individual body parts of your enemies. Each part is awarded a chance-to-hit based on your skills and stats. You line up your shots and then watch as your choices turn to action – flying limbs and exploding heads, if you are playing right, or missed shots if you are unlucky or just plain stupid with how you have created your character. It's all bloody good fun.

Under VATS, you get a quota of Action Points which determine how many shots you can line up while paused. Here too, there is an element of choice – do you build your character such that he/she gets lots of APs, or do you go for finesse instead – fewer shots but more critical hits? Aspects such as your

character's Endurance, Agility, and Luck affect how well you do in combat. These fall under the umbrella of S.P.E.C.I.A.L. – strength, perception, endurance, charisma, agility, and luck – each stat defining you and ruling and affecting your world- and social-skills: speech, science, lock-picking, medicine, and so on.

The system is flexible enough to allow for some unique character builds: play as a silent ninja that specializes in unarmed combat and relies on stealth for kills, or as a strong brute that deals in rocket launchers and mini-guns, or even as a charismatic chap that can talk his way out of most situations. You can even style yourself a cannibal, feeding off dead corpses to regain health. Hey, whatever it takes...

Fallout 3 isn't *Oblivion* with guns. It's *Oblivion* sans faults, then married with the setting of *Fallout*, and clothed in something S.P.E.C.I.A.L. It's also a game you should not miss – *Fallout* fan, or otherwise.

Supermutants with super toys



Headshots you warma see



SKOAR!: 8.5/10
Developer: GSC Game World
Web site: Deep Silver

PROLOGUE STALKER clear sky

Innovation Sans Proper Implementation

Michael 'Lucifer' Browne

For me *S.T.A.L.K.E.R. Shadow Of Chernobyl* offered one of the most realistic FPS experiences. The concept of you, alone in an open-ended, irradiated world populated by free roaming and hostile mutants amid other adventure-seeking stalkers was topped off by very realistic weapons and weapon effects and an ultra real combat system. *S.T.A.L.K.E.R.* was touted as an action RPG sans character stats where you, the player, actually got better at combat, taking cover and generally surviving while playing the game. *S.T.A.L.K.E.R. Shadow Of Chernobyl* was best described as atmospheric and haunting; you were all alone at the mercy of the zone and its denizens. No wonder I gave it a 9/10 when I reviewed it. GSC Game World achieved nine out of ten objectives they started out with when designing the game. For me, *Clear Sky* had large shoes to fill.

This time you are a stalker called "Scar" with the Merc (mercenary) faction. *Clear Sky* is based on events of a year preceding *Shadow Of Chernobyl*. The zone is still unstable on account of the explosion and sudden radioactive emissions and dense pockets of anomalies are commonplace. The game

starts with a cut scene in which your character is leading a group of scientists into the zone when a blowout occurs. You, survive for some unknown reason and are rescued by a group of researchers called *Clear Sky*; and their objectives quickly become yours as they realise you're a merc who sells his gun to the highest bidder. And herein lies one of the new additions to gameplay; the concept of belonging to a group and taking on group objectives. Different factions are based in different maps and when you take on missions for them and complete them you may get the chance to join their outfit. This is a double-edged sword however as befriending one group often antagonises another. Team objectives aren't always very clear, mainly because the map is a little confusing and not all locations and waypoints are named. Patches improve this as I discovered. You will also work with teammates a lot of the time. Although working with a team does spoil the atmosphere somewhat but for the most part you'll be alone.

Clear Sky adds the ability to repair weapons at a weaponsmith's shop which is a huge plus especially if you have gotten accustomed to a really good weapon. You can also modify your weapons stats thereby increasing its

range, rate of fire, accuracy and reliability. Some weapons can be modified to accept sniper scopes and under barrel grenade launchers and silencers. Thankfully the delicate armour can also be repaired and upgraded.

Now you may wonder as to the perk of joining certain factions since some others will surely become hostile; all groups except loners have some enemies; the exception being bandits and military stalkers, who open fire on anyone trespassing around their domain. Each faction has a weapon specialist who will modify weapons. But these gunsmiths have a few more powerful upgrades that they only do for members of the same group. Also consider that not all gunsmiths do all upgrades, some are armour specialists, some work with shotguns better, the others may be able to make assault rifles more powerful. There are also some weapons which only the bigger faction gunsmiths (Duty and Freedom) may be able to upgrade. Some heavy armours are also only repairable by specialists of these factions. So your choice of faction if any should ideally be based on which weapon you intend to use; since a fully upgraded weapon makes a huge difference. That being said I played as a loner, (didn't join a faction), and ended up with a half upgraded SEVA armour suit that offers brilliant anomaly and radiation

protection. I ditched my handgun and stuck with an upgraded Tunder S14 assault rifle and a Vintar BC sniper rifle; because they use the same ammunition, I saved some weight by stockpiling only on one type of round. *Clear Sky* does allow you to carry more; although the weight limit is still 50 kgs; it seems that ammunition and even guns weigh less somehow as I could carry two guns all the time.

Upgrading weapons implies that they are much weaker when not upgraded and if you pick up a new gun you may find that emptying two entire magazines of rounds into a soldier may not kill him – this is unrealistic. Headshots do the trick although you'll be hard pressed to get them as the enemies dodge and move around a lot. And this brings me to another significant point – the game is rather difficult; fail to take cover and enemies can home in to you at even great ranges and even entry-level assault rifles like AK74s can tear you up in a single burst. Heck, even a peashooter will cause your health to nosedive. But as you play and get used to your weapons recoil and aim characteristics this will get better.

Artifacts are now much rarer and also invisible. Which

means you will come across them very seldomly and this is more a matter of chance. You have a detector that when activated indicates the presence of artifacts near you. The thing is artifacts are no longer lying in the open but usually near pockets of dense anomalies that are likely to kill you before you get your paws on any treasure. Thankfully, artifacts now fetch more cash; and money itself lasts a lot longer as weapons and armour are cheaper than they were in the original game.

The missions are very interesting; as good as the original game. One issue – *Clear Sky* crashes every now and again, something which persists even after installing the 1.503 patch; this is unacceptable. Sometimes *Clear Sky* will crash when running into a particular section of the map. Other times taking a certain route to solve an objective means it remains unsolved even after you've completed it. I picked up a parcel to return to a trader only to find he still doesn't recognise it from my inventory and tells me to fetch it again. Then there are issues with travelling between maps, which also mysteriously crashes while working fine sometimes. Thankfully the patch version 1.507

seems to clear up most of the issues I faced, but your older saved games no longer work and you must begin afresh. To make a buggy game, release it, and then create ineffectual patches and leave debugging to the development community is just unacceptable. The Starforce anti-piracy system doesn't help by not detecting the original game in the drive half of the time; a crack .exe was the only way out, and I have the original game! If I'd let my temper and frustration guide my hand; *Clear Sky* would get a solid 3/10.

But it's still an excellent, albeit flawed game. The visuals have gotten much better, and the environments are splendidly done – the wasteland really looks like the product of a nuclear fallout. Shadows are brilliant; shaders are beautifully done. Weapon and character modelling are also superb. The audio component is amazing. If only they could have gotten rid of those pesky bugs, if only the realistic weapon system hadn't been tampered with – this game would be so much better. Before I forget, if you are intent on playing *Clear Sky* with anything less than a GeForce 8800 GT / Radeon HD 4850 – please upgrade. michael.browne@thinkdigit.com

SKOAR!: 7.5/10
Developer: Volition Software
Publisher: THQ
Distributor: E-xpress
Interactive
Price: 2,499
Platform: Xbox 360, PS3

What We Love

Lots of customisation offered
A lot to do and it's all fun!
Great sense of (dark) humour

What We Hate

Weak plot
Graphical issues

Saints Row 2

Lots Of Fun

Agent001

How cool is it to play a gangster? So cool. If there is any doubt, *Saints Row 2* smashes home the point with great style and conviction. The premise of the game is not much different from any other in this genre – you were once a kingpin of the city named Stillwater, a city allegedly based on real life Chicago and Detroit. You start the game in a prison, waking up from a state of comatose and realise that your former kingdom has been usurped by three other gangs. The wafer-thin plot of the game is set in the first ten minutes or so and your missions are quite obvious – send the other gangbangers to meet their maker and regain your control over the city. Now, this may not sound very exiting – which it is not – however the game is a lot of fun as you go around town, wreaking havoc like an unhinged maniac.

The game shines right from the outset, from the customisation options offered while you create your character: suffice to say that you can really let your creativity go wild as you sculpt your in-game avatar. Mind you, the game isn't exactly a looker, in fact there are some horrible graphical issues that you will bump into from time to time. However, if you can look beyond these niggles the game redeems itself with some incredibly fun missions and activities (the game calls them diversions). It is also very tongue-in-cheek, poking fun and confronting some of the issues of our decadent civilization head on. Some of these 'mini-missions' are the common variety such as: drug dealing, car-jacking, and so on, but the game also offers some over the top mission such as rescuing prostitutes from their mistreating pimps, masquerading as a police officer and taking down crime with excessive force for the benefit of the local news channel, and even taking a helicopter ride of mayhem and destruction with gun cannons and missiles.

The map of the Stillwater is divided into three major territories that are controlled by individual gangs. Your primary objective is to regain these territories by completing certain missions and taking over their strongholds. As you progress towards regaining power (and money) you can upgrade your stronghold with better vehicles, arm your homies with better gear, and pimp your crib with a home theatre system and even stripper poles. Further character customisation include getting a new hairdo, sick tattoos, altering your melee fighting style, and if you feel like getting in touch with your feminine side – the game even allows you to indulge in some cross dressing. No respectable gangster should be seen riding a stock car, so the game features shops across the city where you can take your favorite ride and pimp it up with upgrades like hydraulics, spoilers, custom body and even nitro.

I am generally not a fan of these kinds of games; in fact, I have only slightly liked games such as the Grand Theft Auto series. There are a couple of things this game does to set itself apart from the competition. Firstly, the main plot of the game is relatively personal, where your motives are your own and you are not working for anyone but yourself. Adding to that is a really fun and unpretentious game play coupled with a really sick sense of humor; this is a game that never takes itself too seriously.

If you've not been too impressed by sandbox-styled action adventure games in the past, this may very well be the game that'll change your mind.*



WORLD OF GOO

Aditya 'Anorion' Madanapalle

World of Goo is a small (62 MB) 2D indie game released by two ex-EA employees under the banner of 2D Boy. The game involves manipulation of small balls of with varying properties into complex structures according to the needs of the level. What seems to be an under-manding and even silly physics-based game to start with, quickly snowballs into a complex cultural commentary on how modern humans use the environment, machines and computers.

World of Goo is a simple enough game to figure out, the first few levels introduce the goo balls and how they interact with each other. As the game progresses, there is an immense learning curve that does not level out till the very last stage of the game. This is because each level forces you to re-think about the entire game, demands a unique approach, and forces you to think out of the box. You have to stick goo balls together, burn them up, use helium filled goo-balls to lighten a structure, shred them, make them cling to moving surfaces, throw them in just the right angle, balance them on a beam, make them float and remove

blocks jenga style to get the goo balls to the pipe in every level. There are many controls for the goo balls that are introduced as the game progresses, including linking them, launching them, drawing them to one side by whistling, and time-bugs that turn back the clock. The environment too is designed with extreme care and passion, the spikes, the gears and the gigantic pieces of machinery that you encounter look appealing despite being hurdles. The world of goo corporation gets destroyed in the course of the game, and at the game's end, you are left with the tower of goo recreational park and entertainment centre. From here, the game pits you against everyone else playing the game on the Internet, to build the largest possible tower of goo after collecting the goo balls across the game. The heights other players have achieved are represented by clouds. Other rewards of connecting to the Internet with the game are player statistics, where the time taken and the number of balls collected in each level can be compared. The game play is addictive – in the sense that you will not have the heart to stop playing the game because of the curiosity that is created by the story. The designers leave messages, hints, misdirections and advice for the player – like the sign painter, an invisible character that leaves signboards for everyone to read.

And what a story they have to tell – from the dark nuances of the corporate world to an elegant and outrageous idea for power generation, the story is an insane and delightful interpretation of the modern world. The game is divided into six chapters. Each chapter has a mysterious artefact or quest – like the product Z or the elusive power source that you must find out about, the aura and the build up around these level endings are so great that you can't help but keep at the game. When the grand revelation comes, it is an epiphany of sorts, and consistently so, at the end of each chapter. In every chapter, you collect goo balls through a pipe at the end of each level. Every aspect of the game has a story to tell, and it's these small touches that makes the game so alluring. There is an astounding amount of observations, style and ideas constructed above and built around the basic premise. There is nothing linear about the story or the game play, as players have to work around totally new obstacles, and work with objects that are at times unique to just a single level.

Most of the story is narrated by the captivating sign painter, on small signboards scattered throughout the levels. The sign painter may say nothing helpful, talk about obscure philosophical ideas that seem to have nothing to do with the level, deliberately mislead you, or give you just the inspiration you need to solve the level. Throughout the story, there is a thread of very refined and very subtle humour. There are a few cut scenes and animations that are part of the narrative. Although a few of these are great, some are mediocre and don't add much to the appeal of the game. On loading, the game claims, among other things to "distilling beauty", "swapping time and space", "bending the spoon", and "deterministically simulating the future" – the game then delivers much more than this.

The graphics are excellent within the premise. It is a game, but it is also a work of art. The levels, the objects and the interface won't tax your computer too much, but

there is still plenty of eye-candy. While the screenshots might make the game look cute, the game is anything but. After a few levels, you really are immersed in the world of goo, and you start to take the goo balls much more seriously. There is a lot of detailing, care is given to the smallest aspects, and all the elements are fresh. The look and feel of the game changes drastically across chapters, sometimes across levels. The sound is made up of ambient loops which set the mood for every level, creating a sense of urgency in one level, and a sense of desolation in the next.

The game is available for PC, Mac and Linux. There is also a Wii version, and there is a healthy community around the game across forums and blogs, not to mention the official website. The developers seem to believe in and trust the gaming community, so the game is without region lock and DRM free. The game has very little replay value, unless you become fixated and want to earn ODC flags – which are obsessive completion distinction criteria – that is a reward for completing the levels with ridiculously difficult goals. All the balls collected over the game end up in a multiplayer sandbox where players have to build the world's largest tower of goo. By all means buy it, or at least try it – you will have nothing to complain about. This might claim to be a 2D game, but it is one of the most multi-dimensional games we have ever seen.

aditya.madanapalle@thinkdigit.com

What We Love
Everything

What We Hate
Nothing

How well do you know your fictional computers?

1 The Matrix is powered by humans – everyone knows that – but what does The Matrix feed the humans?

- a) Human blood
- b) The pulp of dead humans
- c) An organic soup
- d) Maggots



2 Isaac Asimov's famous computer, which was used across many of his works, was called the Multivac. What technology was used in this super computer?

- a) Integrated Circuits
- b) Chemical Reactions
- c) Quantum Transistors
- d) Vacuum Tubes

3 In The Hitchhiker's guide to the galaxy, which race created the computer Deep Thought to compute the answer to life, the universe and everything?

- a) Dolphins
- b) Humans from IBM
- c) Vogons
- d) Mice

4 HAL, from 2001: A Space Odyssey, the movie and the book, could not accept which of these input methods?

- a) Lip reading
- b) Cameras
- c) Keyboard
- d) Mouse

5 Gulliver's Travels by Jonathan Swift has one of the earliest known fictional computers. What was this computer called?

- a) The Gadget
- b) The Machine
- c) The Engine
- d) The Thingamabob

6 For all the trekkies – what is "The Ultimate Computer" from the Star Trek universe?

- a) M1
- b) M3
- c) M5
- d) M7

7 Which of these technologies were beyond the scope of omnipotent Skynet from the Terminator fictional universe?

- a) Time Travel
- b) Impregnating humans
- c) Mind Control over humans

d) Nuclear Warfare

8 The Transformers were robots made sentient by which computer?

- a) Vector Sigma
- b) Sequence Beta
- c) Directrix Omicron
- d) Focus Omega

9 Take all the villains in Batman, emulate them on a computer, and you get which super-antagonist to the dark knight?

- a) D.U.K.E
- b) D.R.A.K
- c) D.A.L.E
- d) D.A.V.E

10 Cortana from HALO, was inspired by which Egyptian queen?

- a) Nefertiti
- b) Hatshepsut
- c) Ankhesenamun
- d) Cleopatra

Answers

10. a	05. c
9. d	04. d
8. a	03. d
7. b	02. d
06. c	01. b

Got an interesting question? Send it in with the answer to **TQ@thinkdigit.com** Mark "TQ" in the subject area

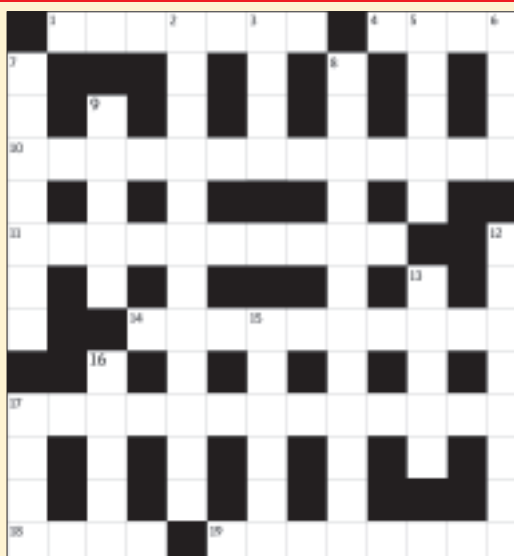
Crossword

ACROSS

1. Person who uses e-mail to fraudulently obtain valid data from a user(7)
4. To read the contents of a certain file(4)
10. Device that changes the video output from a computer to standard TV signals, allowing a regular TV to be used as a computer screen(4,9)
11. Communications protocol used by AOL Instant messenger (lap cub calf)(6,4)
14. Using a search engine to see how many times one's own name is cited(10)
17. Systems which distribute programming to multiple stations simultaneously beyond the limits of a single broadcast signal(5,8)
18. Digital Enhanced Cordless Telecommunications (abbr)(4)
19. Symbol used as a function, with infix or prefix syntax(8)

DOWN

2. 'S' and 'G' in SIG- one of the several technical areas, sponsored by the Association for Computing Machinery(7,5)
3. Short for Extended Turn(4)
5. 'Cut and -----' editing function which involves transferring text or images from clipboard to a desired location(5)
6. --- Line storage-on-site storage of data on removable media(4)
7. Stop a command on the computer(8)
8. Software application and Internet suite developed by a Norwegian company- handles internet related tasks(5,7)
9. Method of organizing several files into a single group for transmitting or printing(5)



12. A special, high-speed storage area within the CPU(8)
13. ---processor or a logic chip(5)
15. --- transformer- transformer in which the output AC voltage is less than the input AC voltage(4,2)
16. --- or spontaneous network(2,3)
17. 'R' in ROM(4)

Last month's Winner
No Winner

Send in your entries to **TQ@thinkdigit.com** on or by the 20th of this month. One lucky participant will win

Data Mining for Business Intelligence
By Galit Shmueli, Niting R. Patel, Peter C. Bruce

WILEY-INDIA



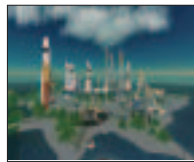
November's Solution



Crossword by Nitaa Jaggi

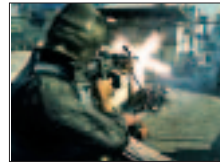
Brit Couple Divorces Over Second Life

A British couple has sought divorce after the wife spotted her husband getting jiggy with someone else in *Second Life*. The unrepentant and adulterous husband declared he didn't love his wife anymore. The wife, Amy Taylor, later found love on *World of Warcraft*



Geeks Beat Marines At War Game

At the debut of the new game — *World at War* — the world watched as an innocuous teenager wiped out an elite squad of marines in the game. And these aren't computer-generated marines, either — they were real, flesh-and-blood marines playing the game



Escape

IDENTITY CRISIS

OpenID Too Much To Take

When you sign into your Gmail account, you're automatically signed into all Google Services — Docs, Blogger, Reader, whatever. And you like that, don't you? We do too. It's hassle-free, and hassle-free is good indeed. But then, you need another ID for your Yahoo! account. And another for your Windows Live services. And another for some other services we can't really think of right now.

And then came OpenID — the initiative that promised us a single ID. If you remember just one single password, you're set to access all the services you ever need. It's more hassle-free than what we're used to now, so it can only be better.

In January this year, there were only two players supporting the platform — Yahoo! and AOL. And we don't know about you, but we remember sticking to our Yahoo! IDs to access the services. Now, however, more of the big guns have joined the movement for OpenID — Google, MySpace and Microsoft, among others, announced their support for the platform in October. Finally, it looks like the way is paved for a Web that's much easier to access, and henceforth, we'll only have just one ID to remember. Even better, you



already have an OpenID — none of this registration nonsense to contend with.

Only one problem, though: people don't seem to be using it.

It's not that people aren't enthusiastic about it, either — you're probably getting pretty excited about OpenID yourself, we can tell — it's just that they can't figure it out. When Yahoo! studied the success of their OpenID system, they saw one critical flaw with it — users found the system absolutely befuddling. But is it really that befuddling, or are we talking stupid users here?

Turns out, logging into a service with an OpenID is considerably befuddling indeed. First, there's the matter of your ID. You don't register for one: if you have some sort of Web presence — Blogger or Yahoo!, for example — you already have an OpenID. In the former case, it's your blog address; in the latter, it's a little complicated. Then there's the login process itself. It

isn't as simple as username: password any more. Let's say you want to use your Blogger address as your OpenID. You just enter your blog URL in the box that asks for your OpenID, and click on Login. Then, you'll be taken to Blogger, where you'll have to log in using your Google ID. And then, you'll go back to the site you were trying to log into, and you'll be signed in. Dizzy yet? And the process changes for every OpenID-toting service, too.

And we know what you're thinking — unless the companies get their act together and stop sending us bouncing around the Internet, we'll keep our passwords, thank you.

BOOM, LIKE THAT

Total Recall

Even as we complacently sit with our...well...laps, we forget the horrors of days past. Days when no lap was safe. When any normal day could turn to horror as the most innocuous of components — the humble battery — took to revenge. All over the world, they launched kamikaze attacks, going up in flames, and taking with them precious laptops, their data, and sometimes even human flesh. The world of

Whatever Happened To... The Trackball

Ah, the good old days — when mice had balls, and you'd waste the first few minutes of your work day cleaning them.

Between the mechanical and optical mouse, there was one device that promised to end the era of dirty mechanical mice, and more importantly, counter the effects that these mice were having on our wrists. We remember all the hype — even the big features in your favourite technology magazine. And then, nothing.

While we'd like to say that the optical mouse was the trackball's undoing, the problem (if you can really call it that) ran deeper. Trackballs have been around for ages — even before mice — so there must be some other explanation. It's simple enough, really — they just aren't everyone's cup of tea.

From our own experiences, we've seen that while trackballs were considerably more comfortable and accurate than the old ball-mice, for some of us, they just took the stress from our wrists and gave it to our index fingers. Some others were so used to the mouse that they couldn't fathom anything that didn't need to move around the table. And yes, the optical mouse became the final argument against switching away from the mouse.

Still, the trackball does enjoy its own little cult following, and if you want to see what the fuss is all about, you might still be able to get your hands on one. Logitech still sells its range of trackballs, right from the entry-level PS/2 model. However, it's not just the PC any more — you'll see trackballs or your favourite Blackberrys, and even on the G1.

portable computing was plunged into chaos, as users lost the courage to even turn on their machines. There were fragments of Dell and shards of Apple, and Toshiba cowered in the corner. We take a moment now to remember our electronic friends who perished in those blasts.

And to tell you that the danger hasn't passed. Dell recalled laptops back then, Sony recalled their batteries, there was much criticism, but it hasn't ended. In October, there was another scare, and Sony has now recalled 100,000 more batteries worldwide. That's right, those lithium-ion rogues are still out there, just waiting for the opportunity to take something precious with them. Who will it be this time? Will it be you, guy-who-reads-RSS-feeds-in-bed? Or you, lady-who-does-her-accounts-in-public-transportation? Or will it be Innocent Bystander #54, whose only crime is to appreciate the shiny new laptop in his peripheral vision?

Across the US, owners of HP laptops are in panic, for 32,000 of the 35,000 kamikaze batteries are apparently in HP systems. Sixty-five thousand are spread across the world, hiding out in everything from Dells to Tecras to Toshibas. The war on battery terror isn't over, and it's time to put your laptops back on your tables once again.

BEYOND HELP

Online Psychics Profit

It's no secret that thanks to the naughty antics of the Big American Corporations, the world is in an economic slump, and fear reigns everywhere. In these tough times, we turn to all those wise investments we made over the years, cut down on our unnecessary expenses, and generally find support in our fellow unfortunate friends and family. In the US, however, people are spamming their online psychics.

On September 30 — the day the madness truly began — Katrina Spears, "Internet medium" came home after an errand to find 30 panicked messages from her clients. Since that day, Spears has found herself inundated with online consultations, reassuring panicked Americans that everything will be all right. And at \$3 (Rs 150) a minute, you can bet that she's telling them every single thing they should be happy about.



Another "reader", Pure Empathy, puts it in better perspective: "People are more depressed, and I can easily make \$150 to \$200 a day." And obviously, these big spenders are asking him about their finances, wondering if they're going to be secure. Their predictions? It's back to basics, apparently — no more shopping extravagantly for Americans, but things will get better by the middle of next year. Of course you need a \$3-a-minute online psychic to tell you this.

The only psychic with intelligent clients, it would seem, is Amaya Elliot — instead of rising, her business dropped by 50 per cent. This makes perfect sense, because in times of economic crisis, intelligent people know that the first thing you do is eliminate extraneous expenses. Like online psychics. And this is the country leading the world's economic charge?

Oddly enough, none of these psychics expected all this success.

GAMER DUMB

Gaming Not Good For Brain

Before we begin this story, we must first express our deep regrets to the following groups of people: 1. Ye whose parents control your gaming time, for you

People Who Changed Computing

John Cocke

You'll like what John Cocke did for your smartphone. He didn't design touchscreens or keypads, but RISC — Reduced Instruction Set Computing — which lays the groundwork for your phone processor's architecture. RISC architectures make



processors more efficient at processing mathematical calculations, and hence finds its place in cell phones, game consoles and to some extent, graphics cards.

A PhD in Mathematics from Duke University, Cocke spent his entire career from 1956 to 1992 as an industrial researcher with IBM. One of his most significant achievements was the IBM 801, which came from his idea to build a very small and very fast core, and which didn't have too many instructions in the instruction set. His work on the 801 won Cocke the Turing Award and the Presidential Medal of Science.

Cocke also co-invented the Cocke-Younger-Kasami (CYK) algorithm, which is one of the more effective algorithms for making computers understand human speech.

Bluff

YOUR WAY THROUGH

Geek Sci-Fi

If you must present yourself to a congregation of geeks, you need to keep yourself abreast of stuff that will happen in the future, and the sci-fi greats that we have come to love so much.

Cylon (n.): The enemy from the series *Battlestar Galactica*. They're metal men, and naturally don't appreciate us fleshy men.

Usage: That helmet makes you look like a *Cylon*. All you need is LEDs flashing across your eyes.

Hari Seldon (n.): The creator of psychohistory and the two Foundations in Isaac Asimov's Foundation series.

Inordinately brilliant, and hero of the universe. Also long dead.

Usage: By *Seldon*, I will get you for this!

Skynet (n.): Rogue robot overlord that takes over the world in the *Terminator* series. Doesn't like humans, and takes special dislike towards John Connor. Also spelt e-v-i-l.

Usage: If we don't start building ethics into these robots soon, we'll be staring at a *Skynet* situation.

HAL9000 (n.): The AI that powers the Discovery in *2001: A Space Odessey*. Polite and friendly at most times, but tends to be a little...unbalanced. Sings moderately well.

Usage: I wish there was a *HAL9000* to drive this car. Then I wouldn't have to fear your reckless driving.

Replicant (n.): "Bio-engineered" robotic humans from *Blade Runner*. Look like regular people, only they are stronger and faster. Also (derog.) Skin-job.

Usage: "I just ran into a skin-job back there." "Hush now, be PC - they're replicants."

Wild Wild Web

The Phoenix Is A Twit

As you know, the Mars Phoenix rover powered down not too long ago, drawing a tear or two from its fans (apparently, people are that bored). What you didn't know was that the Phoenix apparently has enough juice (not to mention connectivity) to keep updating its Twitter feed. It is, in fact, speaking to us from beyond the grave. Some gems from the feed:

"The team has me on extreme "bed rest" to recharge power supply. There's cautious optimism about pulling out of this in a few days."

"Not everyone gets the chance to read their own

epitaph(s). So many great entries, I feel so loved :-)"

"01010100 01110010 01101001 01110101 01101101 01110000 01101000 <3"

If you want to follow the goings-on on Mars, or if you're one of those weepy fans, you can connect with your beloved rover at <http://twitter.com/MarsPhoenix>.



Web People Stupid

Has the Web made us a dumber generation? Or has the Web just brought out our inherent dumbness? The antics of News and Star don't seem to be encouraging either way. Maybe they're talking down to us dumb

users. Or maybe, they've become dumb users themselves. The picture above, to be precise:

They also add this helpful caption: "An egg." Of course, how silly of us not to recognise that. Now when we see anything of this ovoid nature headed our way, we'll be sure to remember that they will splatter, smell, and if collected, make a good omelette.

will find yourself stuck to your books more often.

2. Ye who use games to sharpen your minds, for there will be no sharpening.

3. Ye who think that as gamers, you are superior creatures. You are not.

Remember all those gaming studies we've talked about in these pages? The ones where we rejoice that gaming may, after all, be the key to well-developed brains, and that you should keep on gaming with our blessings? Well, we were wrong. Well, no. Correction. The researchers were wrong. We were misled, and are as outraged as you are.

According to a new study (likely by a sadistic researcher), gaming does not, in fact, have any positive effect on your cognitive skills. Walter Boot at the University of Illinois, Urbana-Champaign made non-gamers spend over 20 hours with three different video games, and found that they showed no improvement in their memory or their ability to multitask, which goes

against all we have believed in so far — namely, that gamers have better-developed brains than non-gamers.

It isn't all bad news, however. Boot does admit that a few hours of action games improves concentration, so if you're having trouble paying attention, some hacking and slashing and blowing up might actually help. And to explain why the other studies said what they said, he flatters us — "Perhaps individuals with superior abilities are more likely to choose video gaming as an activity in the first place."

MULTI-BAND CELL PHONES

Strange, Beautiful Music

There's nothing more annoying than being in the vicinity of an air guitarist. And there's nothing more fun than being that air guitarist. Well, now there is. If you've

got a cell phone with an accelerometer — and so many new ones do — you're set to take air guitar (and air drum, and air piano) to a new, crazy level. With a new program, your motion-sensitive cell phone will actually produce the sound of these musical instruments.

Want to bang out some beats? Or make your guitar gently weep? Or tickle the ivories? Your solution is called ZoozBeats, and has been developed by the mad scientists at the Georgia Institute of Technology. ZoozBeats "is a gesture-based mobile musical studio, simple enough for non-musicians to immediately become musically expressive, but rich enough for experienced musicians to push the envelope of mobile music creation," and it doesn't just need an accelerometer, even though that's the most popular way to detect motion. ZoozBeats can even use your phone's camera to detect sudden movements and play an appropriate sound.

When you play with ZoozBeats, the probability of you creating actual music is actually very, very low. While you play with it, you'll most likely create a cacophony unpleasant enough to drive your neighbours away — which may or may not be a good thing, now that we think of it. And you'll look pretty silly — get a preview of this silliness at <http://www.zoozmobile.com/beat/>.

MOB MENTALITY

The Hunters Cometh

Robots in the military aren't a new thing — they've been used to detect land mines, and more importantly, go where no man would want to go. But the trouble with these robots is that in using one robot, you also use up one human, which isn't ideal. The whole point of a robotic army is to remove humans as far as possible, so one human per robot is pretty

Fooling The Network Admins

There is literally, a war of sorts, waged here at Digit — between the system administration guys and us, from the editorial team. The rules laid out by them don't allow us to download, or even surf sites like YouTube or Orkut.com. Besides, they have loads of other measures apparently designed to increase productivity.

Although we continuously come up with measures and counter-measures, status quo is maintained. We survive online with new proxies each

day, as and when the last one is cordoned off. However, Rossi, the usually innovative one, known for his foolproof ideas, set up a Hamachi network connection back to his home with a proxy server set up on his home PC. He uses this set up to surf the internet from office. Of course, there are much simpler ways of going around. The smarter, new recruit — Kumar, just walked in and typed in the url to the UK version of YouTube and watched those insane human tetris videos. There's always an easy way out Rossi!

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inefficient resource utilisation. What if one human could command a whole team of robots?

Let us call this Stipulation One. Stipulation One is that the US Department of Defence has put out a call for a "software / hardware suit that would enable a multi-robot team, together with a human operator, to search for and detect a non-cooperative human subject." Each robot is to weigh 100 kg, and will report to the human when there's a "difficult decision" to be made.

Stipulation Two is that last year, iRobot signed a deal with Taser International to mount stun guns on military robots.

Finally, Stipulation Three is that when you bring robots, stun guns and "non-cooperative" human subjects together, no good can come of it.

Now, what conclusions can we draw from these stipulations? Firstly, that the US military is apparently quite interested in getting themselves robotic hunting packs. Secondly, that they don't mind giving these robots stun guns. To

extrapolate a bit, it's possible that they don't mind machine guns, either. Obviously, we are all doomed. The top brass of the US Military has clearly been replaced by Combine Advisors, for the product they aim to create exists already:



think digit

Blog

WATCH

Featured here are snippets from some of the best bloggers who have registered at the Blog Watch section on thinkdigit.com.

If you wish to be featured too, head to www.thinkdigit.com/blogger.php and sign-up.

Firefox 3.1 To Have Private Mode

Of the two big browsing features of 2008, one seems to run counter to where developers are driving their browsers. The melding of the location bar to the search bar was expected in Firefox and Opera, thanks to beta versions. Chrome has it, too, calling it the Omnibar. What seems to have caught developers off-guard has been the clamor for a universal switch to stop the cache and browsing history from recording anything at all.

<http://techfat.blogspot.com/2008/09/firefox-31-to-have-private-mode.html>

Another guide to Quicksilver

Joe Dunn is doing a nice series of articles on Quicksilver. He's

covered triggers and scripts so far with more on the way.

One thing I disagree with, though, is the excessive use of the "do shell script" AppleScript. I like the "Run Command in Shell" action just fine. But if you want an icon, writing an Obj-C wrapper isn't too much work. Especially since you have this source code.

I've also got a bit more on Quicksilver coming up shortly.

<http://lipidity.com/apple/another-guide-to-quicksilver/>

Video

Our movie 'Mera Number Kab Aayega' is out under the banner 'SVNIT Talkies'. Though the venture started for some competition, it could not be completed by then. At last Late

Latif has successfully completed the video, this time for entertainment purpose only. Other jobless people who took the risk were Suhas,Ashwin, Nikhil and many more.... look at the credits. With creativity pouring in from all sides, but also keeping in mind our academic load, we are in the making of next version, 'Mera Number Aayega - [Fully Loaded]', casting still open for SVNITians only. Contact me/team personally or leave a comment here.Budding/'Budded' critics can try out something here at the comment section. I wont delete 'em. People in my network can download the video from my computer \\ram .

<http://zone404.blogspot.com/2008/04/video.html>

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Study: unhappy people watch more television

Space Station Astronauts to conserve water by drinking their own purified urine

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Write to the Editor

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November 2008 Issue

A Sticky Situation

Digit is the leading magazine in the IT sector. Over years it has improved a lot, in terms of content, technical information, getup and the help to readers. Your recent improvements in packaging is praise worthy, but with only one drawback: the package is sealed shut and you have to tear the plastic off to open it.

I also got a November issue with some loose pages inside and page numbers 91 to 102 missing. I request you to replace this issue.

The trial software and games that we receive in the CD / DVD leave Registry and System 32 files after un-installation. Perhaps you can make a Tips and Tricks CD to help us solve such problems.

Dr. Shib N. Ghosh Dastidar

The new address for subscription related queries is help@thinkdigit.com. The packaging is glued in such a way so as to prevent tampering with the contents. We will send you a replacement issue ASAP. As for the Registry cleaning CD you're requesting, have a look in our System Tools section, where we often carry many such cleaners.

Team *Digit*

Wow!

Wow! A *Fast Track to C++* just when I wanted to include that suggestion in my mail. I am a class 9 student who has had six years of fabulous reading with you guys. It is amazing that this is my first letter to you, and I was very impressed with the November issue. It all started when my dad bought *Digit*

Team *Digit*

when we didn't even have a PC! After that we became regular readers and you helped us in many ways. I became a fan of your CD / DVD and crosswords. We try to finish the crosswords, but often fail. I then moved on to reading the articles and reviews, and then bought a PC and a PS2 based on your suggestions. I'm quite famous as a tech-know-it-all at school because of you.

I liked your October issue, three dual layer DVDs were just amazing.

I was just about to complain about the delay in distribution of *Digit* in the newspaper stalls, and then you showed up on the 1st itself! Unbelievable yet true. The special issues (June and December) are always late, so please check on that. Otherwise I have no complaints. You could also revisit some old *Fast Track* topics such as HTML, Windows Registry, Apple, Gaming and maybe a new one like a *Fast Track to Ethical Hacking*.

Vaibhav Nanchahal
Chandigarh

Yes, we're the first to admit that it's shameful that reaching the stands on the 1st is actually a surprise rather than the norm. Stringent steps have been put in place to make sure that barring an emergency, we will always be out on or before the first in most cities across India. If you love the crossword, make sure to send your entries in to the editor if you complete it, because we often get "No winner", and we really want our readers to get the prizes we allot. Your ideas for the *Fast Track* are also noted, and we will try our best to give you content you will love.

Extra, Extra

Hi! I am a student of 8th standard in Srinagar. You are really working hard to make *Digit* better day by day and you have succeeded it seems. Before that I was reading another magazine. I saw your ad in one of the daily news papers of Srinagar (grater Kashmir) of 7th anniversary special issue and I got your magazine and I was amazed to see 2 dual layer DVDs. Ever since, I'm a fan.

In your November 2008 issue, the page numbers 105 to 109 are repeated.

Abhaydeep Bali

Thanks for your letter. We will look into our production, and put an end to all of the repeated pages complaints. Although on an average a few issues out of every lakh copies printed do have errors in them, we're happy to replace any magazines that have missing pages. Extra pages, however, we do not replace, for obvious reasons.

Team *Digit*

More Please

You guys are undoubtedly the best magazine in India. I want to make a career in animation and your guide to 3D modelling was immensely useful. Agent 001 helped me buy a cabinet and SMPS. You guys are best, but there is still room of improvement. Some of my suggestions are: make your mag thicker, include more budget products, and that's all. Keep up the good work.

Kshiti Raj Rawat

We will try and make the changes you requested. We will also be including more budget reviews online at www.thinkdigit.com soon, so keep an eye out for that as well.

Team *Digit*

Editing The Editors?

Your *Fast Track to Flash CS3* was awesome, as was the *Fast Track to C++*. I believe these were some of the most useful *Fast Tracks* since Photoshop. You are doing a great job there. Please include more Bollywood content in your DVD. I miss tabloid tech on the last page, and actually preferred it to Mr Henning's column on the last page. I would prefer his column in the beginning on the magazine. Also, why

does *Raaabo* not remove his earrings?

Mohd Arshad

Raaabo says he rather likes his earrings, as their weight keeps his head steady; and also make up for the lack of hair! As for Edward's column, since he is our Editor-in-Chief, and has the final say in all things *Digit*, it's only fitting he have the "Last Word".

We could possibly look at resuming *Tabloid Tech*, but on a different page, providing enough of you write in and harass Robert (*Raaabo*) via email for it!

Team *Digit*

Save The Environment

You guys are classy and your magazine is unrivalled. However, in the anniversary and December issue, I would suggest that you give out the whole years best rated products.

I love the FT to C++. It would be even better if you made a FT to PHP, .Net, Java, Javascript, Oracle and many other languages.

The DVD / CD packaging is not environment-friendly, so why not replace it with paper-based packets in which you can add foam as a partition to avoid scratching the DVD and CD. Then you could be number 1 tech magazine, as well as number 1 green magazine.

I like the November 08 packaging, because now I can preserve it, instead of throwing away the cardboard you used to provide earlier.

Saurabh Jain,
Bhopal (M.P.) - India

We do list the Best Products Of 2008 in this current issue. Every year in December we carry the Zero1 Awards, which tell you exactly what you wanted to know. You had also asked for a "Best Software" collection earlier, and we're happy to tell you that we have something even better: in this issue, we have included an entire dual-layer DVD that's filled to the brim with software that our readers have demanded. We hope this will quench your software thirst. Your point about being eco friendly is noted, and although we try to be as eco-friendly as costs would allow us to be, we know we can improve further.

Team *Digit*

Awesome

East or West, *Digit* is the best! I just love *Digit*, I've been reading *Digit* for the past 3 years and I cannot live without it. I don't know how to thank you guys, you have helped me in many ways. I started reading it when I was in 8th grade and *Digit* made me the tech geek of the school, and because of *Digit* I can solve most of my computer problems. It is you guys who helped me to buy the best cellphone. A thousand thanks for that! *Digit* also improved my language skills.

The content you provide on discs is just awesome, and the reviews of hardware are simply amazing! Other technology magazines are nowhere near your standards. Great work Team *Digit*! The November issue was astounding, the CPU, motherboard and GPU tests were really great and one more thing — the first letter in the inbox column was damn funny!

As for the suggestions — NONE! *Digit* is cool the way it is. You guys are doing a great job, keep it up, thanks!

Nitish R Shiggaon
Dharwad

Trial And Error

I would like you to congratulate you for your efforts to keep the people of India updated with technology. I first bought *Digit* in April 2007, and you opened my eyes to products and technologies that I didn't know existed. From then on I've been a regular buyer of your magazine. To be honest, I have tried out a competitor magazine once, but was really disappointed because they were no match for you. That was the end of the experimentation. I have a few requests:

Please include some latest movies, or put some Webaroo packs, but don't give us old movies. More and more open source products please. Bring back Tech Careers. Include celeb wallpapers. And finally, keep up the good work....

Subrata Das

Nitish, a thousand thanks for the letter, it boosted our spirits. Subrata, we will try and implement all of your suggestions. One Webaroo pack coming soon...

Team *Digit*

Q&A Archive

I'm studying final year B.Sc. in Computer Science. *Digit* is fantabulous, and I'm a regular reader for the past three years. Here goes the same message (usual for you though!) "Your mag helped me in all my technical knowledge needs. I built my custom PC and got myself a lot of best stuff and I'm consuled by my friends for technical issues" Seriously, all the above just holds good for me. You guys made me stand out from the rest. I'm ever thankful to you.

The latest *Fast Track to C++* and Diwali special HTML tutor were something really great. Sadly, the FT to C++ came only after I finished my course semester... MORE PLEEEAAASE...

Now, the BIG change this month was the packing. It was smart and not. I really miss the hard DVD casing you used to give earlier. You've said it earlier and you're gonna say it again, "Cost cutting!". Though that makes sense in these times, you should also understand how much the *Digit* discs mean to us. It's difficult to see them stacked in cheap envelopes, getting scratched. Why not provide a one of those case logics to subscribers, so that those who value the discs could opt for that subscription offer.

Second, you have a lot of questions coming in maybe for buying guidelines / tech help, you already have published a *Fast Track to Troubleshooting*. I often find myself faced with problems that I know you guys have provided solutions for, but I cannot remember in which issue. Please, if possible, gather ALL the troubleshooting solutions you have and make a searchable software which is something like your *Digit* Archive. This would make it possible for us to just type in a problem such as "HDD partitioning Linux", and read the solution or workshop right there on the screen, or online, instead of trying to remember which issue of *Digit* had it, or searching through the PDFs of past issues.

Keron Madtha
Mangalore

Wow, that's an excellent suggestion. Let's see whether we can achieve this. Meanwhile, you can visit the Tech Q&A section on www.thinkdigit.com and have your questions answered by experts.

Team *Digit*



The Last Word

Keep It Simple

SOME OF MY new *Digit* colleagues are surprised by my insistence on always using the simplest approaches to technology, particularly when it comes to things like file formats. There are several reasons for this, and a recent news story, to which I will return, reminded me of one of them.

For a start, the more complex anything is, the more likely it is that something will go wrong, and the more difficult it is likely to be to fix it. Also, can you trust the developer or manufacturer concerned to understand their own products? Several years ago, during a conference call to Microsoft technical experts in the US, during a discussion of the contents of a Word doc file, I drew their attention to about 70k of ASCII text near the front of the file. I called it ASCII text because using a simple viewer like Ztree, it was perfectly readable. The “experts” corrected me, and told me that this was in fact “compressed Unicode”. In order to prove their point, they drew my attention to about 70k of zero bytes towards the end of the file — these were all the zero bytes from the otherwise Unicode characters stored temporarily.

This is the word-processing equivalent of hearing the electrician wiring your house shout out to his mate “Which one is live? Red or black?” Hand on heart, I actually heard that once, and no, I will never use Word as my main text processor. Never. The other main reason that I prefer simplicity is so that I can access files over a long period of time. Will I want to be able to read this column in 10, even 25 years’ time? I doubt it, but I certainly have plenty of files from about 25 years ago that I do wish to be able to access, and sometimes do.

The rate of change in the PC world is fast, but this does carry with it problems. Not only is the technology advancing quickly, you also have companies apparently introducing gratuitous changes into file formats in order to force people to change to new versions of the software. Hint: if anybody sends you a docx file, just send it back and insist on a more simple format.

My old text files are all plain ASCII, but what if they had been written using WordStar? Would I be able to open them now? Even if that were possible, I cannot count on it being so in another 25 years. I have already “lost” some early image files because I can no longer find anything to open them.

And then there is Adobe’s PDF format. The news item that caught my attention concerned the recent adoption of one of the PDF formats as a published ISO standard. As an increasing amount of material is being stored in pdf files, this is an important and vital step. The point is that unless we know that we will for certain be able to open these files in the distant future, I do not think the verb “archive” should be used here.

When I heard this news and chased around the Internet for further information, I came across the comment that we



Edward Henning, Editor-in-Chief

“You also have companies apparently introducing gratuitous changes into file formats in order to force people to change to new versions of the software.”

could now be confident that we would be able to open such files “50 years from now”. Wow! 50 years from now! I have often read books in libraries in this country and the UK that go back to up to 1,000 years — and their “file formats” have stood the test of time. I mention libraries because one librarian told me not long ago that the advent of first microfiche and later PDFs had caused some library bean-counters to suggest that they could now do away with boring old paper books. Such people should not be allowed within a mile of a library!

Although the PDF format is complex, making it an ISO standard is at least a step in the right direction (and no doubt good business for Adobe). But we need more companies to take on board the concept that at least for many users, our work is valuable and important and we wish it to have a very long shelf life — at least as long as the dusty old books that can be found in libraries. Rapid change is good for business, productivity, and in these times, the economy, but these machines are called “productivity tools”, so the industry should make sure that the value of the work we produce with them is not swept aside by “progress”.



edward.henning@9dot9.in