



Price  
Rs 150

thinkdigit.com

Agent 001 goes shopping for Bluetooth devices

A 9.9 Media  
Publication

# thinkdigit

YOUR TECHNOLOGY NAVIGATOR

GROUP TESTS:



Speakers



Hard Drives

April 2009

Green  
computing  
demystified

Engines  
that will save  
the world

Ergonomics  
and  
ergonomic  
furniture

DIYs

Make your own  
UFO video

Spice up Firefox  
with plugins  
and themes

Tech In  
Movies

IRONMAN

THE DARK  
KNIGHT

# FUTURE PERFECT

fast forward tech

Growing our  
own Black Hole

Space Travel:  
What the  
future holds

TIPS AND TRICKS: MAC OSX, VBULLETIN, HANDBRAKE, IE8



# When sci-fi meets reality

If you took this month's Digit, and gave it to someone in 1979, they'd ask you whether it was some new sci-fi publication. That's the beauty of technology and the way it has exploded into our lives over the past three decades.

Today, you and I are doing things with gadgets and computers that no one, except for a few sci-fi writers, would have dreamt possible a few decades back. However, almost everything we can touch and feel today was indeed the stuff of dreams and the fantasy worlds of dreamers such as Issac Asimov and Arthur C Clarke have been used as fuel to carve our current slice of reality. It's almost as if most of humanity's inventions are the result of our sci-fi fed imaginations, and research dollars spent to make those dreams a reality. The internet, the moon landings, handheld computers, tiny cameras, robotic assembly lines, artificial satellites, word-wide TV networks, instantaneous information flow, the orgasmatron, all of this was "imagined" by sci-fi writers as much as a century before even rudimentary versions of these were available.

Perhaps it's because I've been a sci-fi bookworm from the age of five, or because of my constant exposure to technology at Digit over the years; but nothing shocks me anymore. I'm quite sure a lot of you feel the same, and need something special to happen before you're "amazed" again. For example, after Atari, Nintendo and Sega got us used to playing computer games on our home TVs back in the 80s, nothing, not even the powerful PS3 from Sony was really an eye-opener. I don't mean to be a wet blanket, but from the early 80s to sometime in November 2006, if you wanted to play video games, you needed a comfortable chair or a sofa. All that changed over the years was that the graphics got better — which, frankly, was expected. Then came the Wii, and a lot of us had to sit up and take notice; actually, we had to stand up and move to play it — no prizes for guessing which game console is the top seller.

Another thing technology has done is shrunk the generation divide. 30 years ago, if the age difference between two people across a generation gap was 20 years, today it's more like five years.

For example, it's interesting to note that all my friends and colleagues who are

less than five years older or younger than me hate the whole Twitter phenomenon, and yet there are so many 15 to 25 year olds Twittering away their time. Personally, I think it's just a waste of time with a lot of bad language (SMS speak) thrown in, but with millions of users across the globe who disagree, I'm forced to admit that it's perhaps just not my cup of tea.

However, let's not twitter on about minor differences in taste, what I'm trying to get at is that although we still have our likes and dislikes, and a billion choices, none of us can really get back to the childish awe and wonderment that we experience when we are witness to great innovations.

Can you imagine how people felt when they watched the first moon landing on TV, or how bystanders gasped in wonderment as the Orville brothers took flight? These days we expect innovation, and are sometimes peeved when technology lags behind — such as the way we moan about crawling hard drives, or the lack of AI.

This is why we need more innovation, or at least more sci-fi turning reality.

We've tried to give you a small glimpse of the future to come, in the pages that follow — from engines that will drive our future, to the plans that various space agencies have put in place as a roadmap to our exploring our solar system. Edward's article on the Large Hadron Collider (LHC) also puts across some possible scary outcomes of the testing being done there. We also look at some interesting technology depicted in popular movies, and find out how close to reality sci-fi has become. Although, sadly, we're still a long way off from colonising the solar system, and thankfully, don't have to worry about AI taking over the world, Terminator-style, we're already headed towards becoming cyborgs and preparing to use little nano-bots to clear blocked arteries — not quite the *Fantastic Voyage*, but fantastic enough.

In this issue and the ones that follow, we're going to try and show you facets of science and technology that will re-capture your imagination...



Robert Sovereign-Smith, Editor

*"We need more innovation in our lives, or at least, more sci-fi turning reality"*

editor@thinkdigit.com



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**

Editor-at-large and Online Architect  
**Ahmed Shaikh**

Head - Copy Desk  
**Nash David**

Writers  
**Aditya Madanapalle,**  
**Siddharth Parwatay**

#### Test Centre

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

#### Design

Creative Head **Kabir Malkani**  
Art Director **Rohit A Chandwaskar**  
Senior Designer **MV Sajeev**  
Designer **Soumya R Mohanty**  
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**  
Product Manager **Navneet Miglani**  
Assistant Brand Manager **Arpita Ganguli**  
National Marketing Manager  
**Vikram Duggal**  
Marketing Communication  
**Thomas Varghese**  
Co-ordinator, Scheduling,  
MIS and Ad-sales **Aatish Mohite**

#### 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**

#### Customer Service:

**+91-22-4078 9612/13/14**

#### Head Office: Editorial, Marketing and Customer Service

Nine Dot Nine Interactive Pvt. Ltd  
C/o KPT House, Plot 41/13, Sector 30,  
Vashi (Near Sanpada Railway Station),  
Navi Mumbai 400 703  
Phone: +91-22-4078 9666  
Fax: +91-22-4078 9540, +91-22-4078 9640

Cover Design **Andre Rodrigues**

## To advertise

#### South

Sanjay Bhan  
Email: sanjay.bhan@9dot9.in  
Mobile: +91-93418 29285  
Phone: +91-80-2554 6370/73  
Fax: +91-80-4151 8330  
Phone: +91-44-2823 5186/88  
Fax: +91-44-2823 0731  
Phone: +91-40-2789 4167  
+91-40-5522 1051  
Fax: +91-40-2772 0205

#### West

Ganesh Lakshmanan  
Email: ganesh.lakshmanan@9dot9.in  
Mobile: +91-98196 18498  
Phone: +91-22-2437 2214/19  
Fax: +91-22-2448 2059/1123

#### East

Jayanta Bhattacharyya  
Email: jayanta.bhattacharyya@9dot9.in  
Phone: +91-93318 29284  
+91-33-2231 7344/46

#### North

Pranav Saran  
Email: pranav.saran@9dot9.in  
Phone: +91-93126 85289,  
+91-11-4160 8655/56/57/58

#### International

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

## Advertisers' index

Client	Page No	Client	Page No
AGEAPE	116	Mr. Site	107
Airtel	Back cover	NEOTERIC	95
Cricket Today	89	No criminals in politics	103
HP	Inside front cover	ONE NETWORK	109
Dell	3	Plustek	21
Fortune	113	Seagate	Inside back cover
Iball	9, 39	Sony	27
Iomega	17	Topgun	41
Lenovo	7, 13	ZOTEC	23
LIC	25		
Microsoft	15		

## Products reviewed this month

#### Bazaar.....64

AMD Phenom II X4 940  
ASUS ENGTX285 TOP  
Asus P6T Deluxe  
Creative Zen X-Fi  
ECS A790GXM-A  
Epson EMP DM1  
GlacialTech CPU Cooler UFO V51  
Intel Core i7 920  
Nokia 5800 XpressMusic  
OCZ NIA  
Plantronics Voyager 855  
Plustek SmartOffice PS286  
Samsung CLX-3175FN/XIP  
Sony Vaio P  
Zotac GeForce 8200 ITX

#### Harddisk Comparison Test.....58

Hitachi DeskStar 7K1000.B  
HDT721010SLA360  
Seagate Barracuda 7200.11 ST31000340A5  
Seagate Barracuda 7200.11 ST31500341A5  
Seagate Barracuda 7200.11 ST3500320A5  
Seagate Barracuda 7200.12 ST3750630A5  
Seagate Barracuda 7200.12 ST31000340N5  
Seagate FreeAgent Desk ST310005FDA2E1  
Seagate FreeAgent Desktop Extreme  
ST310005FPA2E3  
Seagate FreeAgent Go ST903203FBA2E1  
Seagate FreeAgent Go ST905003FAA2E1  
Seagate FreeAgent Xtreme ST315005FPM203  
Western Digital My Passport Elite  
WD3200MLZ  
Western Digital My Passport Elite WD5000ML  
Western Digital My Passport For Mac  
WD5000MEA  
Western Digital My Passport Studio  
WD2000MS  
Western Digital My Passport Studio  
WD5000MT  
Western Digital MyBook Mac Edition

WD10000H1U  
Western Digital MyBook Mirror Edition  
WD20000H2U  
Western Digital MyBook Studio Edition II  
WD20000H2Q  
Western Digital MyBook Studio Edition  
WD10000H1Q  
Western Digital WD Black Edition WD  
1001FALS  
Western Digital WD Caviar Blue WD3200AAKS  
Western Digital WD Caviar Green WD20EADS  
Western Digital WD Caviar RE2 WD5000YS  
Western Digital WD RE2 GP WD1000FYP5  
Western Digital WD RE3 WD1002FBYS  
Western Digital WD RE3 WD5002ABYS  
Western Digital WD Velociraptor WD3000GLFS

#### Speakers Comparison Test.....50

Artis S7+  
Altec Lansing FX 2020  
Altec Lansing VS 2421  
Altec Lansing VS 3251  
Altec Lansing VS4121  
Artis S-Dual  
Artis S222  
Artis S99  
Audio Engine A2  
Creative Inspire M2600  
Creative Inspire T6100  
Creative T3100  
Intex IT2600  
Logitech X 210  
Logitech X 240  
Logitech X 540  
Logitech Z4  
Logitech Z5500  
Razer Mako  
Umax UPB 3200  
Zebtronics Duality 5000  
Zebtronics Duality 6000  
Zebtronics ZEB-T9000

## Tell us what you feel about Digit

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

## Product testing

Want your product reviewed by *Digit*?  
Contact our Test Center at  
[testcenter@thinkdigit.com](mailto:testcenter@thinkdigit.com)

## Software on DVD

To submit and suggest software for inclusion in *Digit* DVDs, write to  
[cdcontent@thinkdigit.com](mailto:cdcontent@thinkdigit.com)

## Help!

For subscription or copy-related issues,  
send an e-mail to [help@thinkdigit.com](mailto:help@thinkdigit.com)

## Endorsements / reprints

Interested in ordering article reprints,  
or using our logos? Contact  
[reprint@thinkdigit.com](mailto:reprint@thinkdigit.com)

## Business enquiries

For any business-related enquiries, contact  
[business@thinkdigit.com](mailto:business@thinkdigit.com)

## News and new product launches

To announce new product launches, and press releases,  
email us at [pressrelease@thinkdigit.com](mailto:pressrelease@thinkdigit.com)

**Disclaimer:** For every *Digit* contest, there will be only one winner, unless specified otherwise. In the event of a dispute, the Editor's decision shall be final.

Printed and Published by Kanak Ghosh, for Nine Dot Nine Interactive Pvt. Ltd. C/o KPT House, Plot 41/13, Sector 30, Vashi (Near Sanpada Railway Station), Navi Mumbai 400 703

Editor: Sujay Nair, C/o KPT House, Plot 41/13, Sector 30, Vashi (Near Sanpada Railway Station), Navi Mumbai 400 703

Printed at Silverpoint Press Pvt. Ltd, Kohinoor Estate, 165, Tulsi Pipe Road, Lower Parel, Mumbai 400 013



## contents April 09

# digit

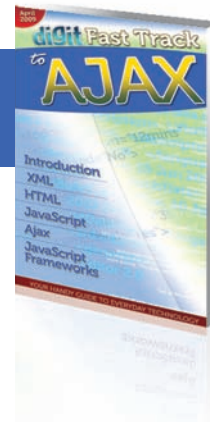


20



32

Also with this issue:  
**Fast Track on AJAX**  
Learn how to code using AJAX



### ENTER

- 10 Inbox**
- 12 Industry connect**  
We talk to Ravi Srivastava of Microsoft India about Internet Explorer 8
- 14 Buzz**  
Is there a Nokia laptop in the making? Read up on that and more...

### CONNECTIONS

- 18 Web watch**  
A homeless guy puts up his own web site to amazing results
- 20 Mobile watch**  
A sneak peek at iPhone OS 3.0 and Windows Mobile 6.5
- 24 Unsocial networking**  
In these dire economic times, stay connected to stay employed
- 28 Your head in the clouds**  
Use the cloud to access your contacts and calendar anywhere

### DIGITAL LIFE

- 30 Droolmaal**  
From Blu-ray camcorders to laser keyboards; find them inside
- 32 Tech in movies**  
We explore how feasible the tech showcased in blockbuster movies is
- 35 Green tech**  
We bust the global warming myth and expose the truth behind e-waste

### SCI-TECH

- 40 Growing our own black hole**  
Will the LHC be the end of us all?
- 42 A space odyssey**  
Humanity's tryst with outer space explored inside
- 48 Engines that will save the world**  
Environmental friendly, air-breathing engines explored

42





## TRIED & TESTED

### 50 Speakers test

We test 23 of the best speakers inside

### 58 Hard drives test

30 drives tested: internal, external, portable, and NAS

### 64 Bazaar

## TOOLBOX

### 72 Art of Illusion

Use this open-source tool to create amazing 3D models

### 74 Visual Story: Motherboard

Every wonder what all those parts do on a motherboard? Wonder no more!

### 76 Adding fire to Firefox

The best plugins for Mozilla Firefox

### 78 QnA

Digit answers all your technical queries

### 81 Tips and Tricks

Tips on Handbrake, Mac OSX, vBulletin, and IE8 inside

## STREET SMART

### 90 Agent 001

Agent 001 goes shopping for Bluetooth headsets and speakers

### 92 Killer Rigs

Whether you are on a budget or have money to blow, we've got the right PC for you

### 93 Price Watch

Street prices on the hottest computer product categories

## TECH@WORK

### 96 Smart SoHo

Why your workplace needs to invest in ergonomic furniture

### 98 Developer's corner

We explore the concept of Model View Controller



## ESC

### 100. The year of the popcorn

The hottest movies to look out for in 2009

### 104. Make your own UFO video

...We show you how

### 105. F.E.A.R 2

### 106. Bionic Commando

### 108. Dawn of War II

### 110. InFamous

### 112. Wheelman

### 114. Unwind

From cyberpunk to pixel art

### 118. Community



# dvd contents

April 09

## Art of Illusion

Learn basic 3D modelling with Art of Illusion. Video tutorial on DVD

# 72



## Gaming

### GAMES

#### Eco Warriors: Invasion of



#### the Necrobots

Strange events are hitting the Apulian Region. Horrid Necrobots appeared in town, woods and countryside. A dark enemy is conspiring to destroy us all...

#### Railroad Tycoon

This is the original Railroad Tycoon game, released for free by 2K Games and Firaxis.

- Samorost 1
- UFO: Alien Invasion v2.1
- Within a Deep Forest
- Tom Clancy's HAWX

### GAME TRAILERS

- Starcraft 2
- Terra
- Warhammer 40,000: Dawn of War II
- Battlefield 1943
- Bioshock 2
- Diablo III
- Fuel
- Star Trek online

## Entertainment

### HD TRAILERS

#### Dragonball Evolution

Goku and a handful of friends battle for the Earth against the deadly

forces of the Saiyans, who are sweeping across the universe, leaving a path of destruction.

- Fanboys
- Funny People
- Goodbye Solo
- Land of the Lost
- Mutant Chronicles
- Public Enemies
- Terminator Salvation
- The Soloist
- Transformers: Revenge of the Fallen

### VIDEOS

#### Artificial Intelligence

An early look at artificial Intelligence. Guests includes Edward Feigenbaum of Stanford University, Nils Nilsson of the AI Center at SRI International, Tom Kehler of Intellegentics, Herb Lechner of SRI, and John McCarthy of Stanford. Featured demonstrations include Inferential Knowledge Engineering and the programming language LISP. Originally broadcast in 1984.

- Battle of the Browsers
- Computer Games
- High Tech India - Part One
- Smart TV

## Linux

### ESSENTIALS

- 7zip
- amarok
- Audacity
- Mplayer Codec Pack
- Pidgin
- Vuze
- Wine

### DISTROS

- KDE 4.2 Live CD
- Knoppix 3.6

## Tools

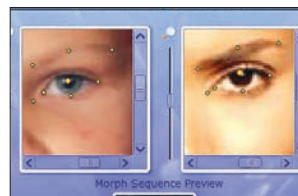
### MULTIMEDIA

#### 3D Picture Browser 1



3D Picture Browser (freeware) is a new piece of software that provides a visually rich experience for browsing photos. It features a real-time 3D user interface, an innovative cursor-detection technology, and very simple controls: no scrollbars, no double-click, no right-click, just move the mouse and left-click.

#### FotoMorph 6.0



FotoMorph is a photo animation tool with a friendly user interface. Amaze your friends and family with unbelievable transformations. Morphing is an animation technique in which one image is gradually turned into another. Turn a friend into a tiger. Watch your child grow into an adult. Unleash your imagination with the power of FotoMorph. FotoMorph is designed to create animations in real time. The rendering engine takes advantage of hardware acceleration, and the rendering speed easily goes up to several hundred FPS.

- Ashampoo ClipFinder 1.55
- ATP Player 1.02
- BS.Player 2.35.985
- CamStudio 2.5 beta
- DebugMode Wax 2.0e
- Flash Slideshow Maker 4.88
- FTV Player 2.0.25
- FLTV - TV and Radio Player 3
- FormatFactory 1.65
- Free Photo Viewer 1.1
- Free Video to MP3 Converter 3.1.3.51
- Free YouTube to MP3 Converter
- GIMP Portable 2.6.4
- iClone3 EX 3.2
- JLC's Internet TV 1.1
- MagicDisc 2.7.106
- Magix Photo Clinic 4.5
- Nimbus Standard Edition 1.8
- Pazera Free MP4 to AVI Converter 1.2
- Photo Pos Lite 1.62
- PSP Video Express 1.03
- RentASoft Image Converter 2.2
- Scribus 1.3.3.11
- Video Edit Master 1.8

### INTERNET

#### Firefox Portable 3.0.5



Mozilla Firefox is a fast, full-featured Web browser. Firefox includes pop-up blocking; tab-browsing; integrated Google search; simplified privacy controls; a streamlined browser window that shows you more of the page than any other browser; and a number of additional features that work with you to help you get the most out of your time online.

- Gladinet Cloud Desktop 0.8.71
- Instant Hidden Internet 3.1
- Internet Explorer 8 RC 1
- Izimi 1
- Maxthon 2.1.5.1250
- MP3 Rocket 5.2
- Netscape Navigator 9.0.0.6
- ProxyCaptor 2.1
- Safari 4.0 beta
- StrongDC++ 2.21
- Swapper 1.0.4
- Webshots Desktop 3.1
- WiPeer 0.72
- Xnews 5.08

### SYSTEM

#### Pandora Recovery 2.1.1

Pandora Recovery is a powerful free tool that provides its users an effective way to attempt recovery of permanently deleted files. The software recovers files removed from Recycle Bin, deleted using Shift + Delete keys bypassing Recycle Bin and files deleted from DOS prompt.

- Paragon Partition Manager Express 9.0
- Recover Files 2
- Revo Uninstaller 1.80
- TuneXP 1.5
- Unlocker 1.8.7
- Wise Disk Cleaner 4.12
- ZIP Reader 8.0.18

### ESSENTIALS

- Silverlight
- .net Framework 2.0
- .net Framework 3.5
- Avast Home Edition 4.8
- Comodo Internet Security Pro 3.5.55810.432
- Foxit Reader 3.0
- 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 9.64
- Spybot Search and Destroy 1.6.0
- VLC Player 0.9.4
- WinRAR 3.80
- µTorrent 1.8.1

### UPDATES AND ADD-ONS

- Adobe Shockwave
- Java runtime update
- Windiws Vista SP2 RC

For any queries regarding the CD or DVD, email [help@thinkdigit.com](mailto:help@thinkdigit.com) with "CD/DVD" as the subject. If the subject is not mentioned, your mail might not reach the right person.



## Movies in 2009

A roundup of the most anticipated movie releases of 2009

# 100

## DIY: UFO Video

Want to freak out your friends with close encounters in your neighbourhood?

# 104

## Digit

### DIGIT VIDEOS

#### Installing the UFO V51



A video on how to install the CoolerMaster UFO V51 Cooler.

- Art of Illusion features
- NIA Unboxing
- UFO V51 Unboxing
- Vaio P Unboxing
- DIY: Make your own UFO Video

### VIDEOS

#### GI Joe

GI Joe: Rise of Cobra teaser trailer.

- Star Trek
- Transformers2
- Watchmen
- X-men Origins

### SOFTWARE

#### Amaya 11.1

W3C's complete web browsing and authoring environment. The Windows and Linux versions are included.

- Aptana Studio 1.2.4
- Art of Illusion 2.71
- Bryce 5
- Eclipse
- Handbrake 0.9.3
- eScan
- Expression Studio

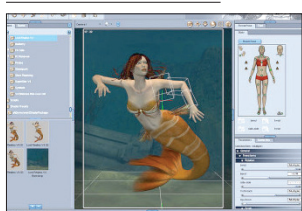
### FAST TRACK

- Fast Track
- Pokat Reader

## Tools

### CREATE

#### DAZ Studio 2.3.3.146



DAZ Studio is a feature rich 3D figure posing and animation tool that enables users of any skill level to

easily create stunning digital imagery. Whether you're a 3D newbie or an avid 3D artist, you'll find DAZ Studio is the perfect tool for designing unique digital art and animation with virtual people, animals, props, vehicles, backgrounds and more

- Terragen 0.9.43
- 3Board 2006 3.6
- 3D Message Free 2.1.9
- Adchiosk Reflect 1.1.4
- CADE 2.4.9
- CalendarPainter 1.0i
- Digital Image Tool 1.4
- InsightPoint 3.2.5.2
- Kommaker 1
- Landscape Studio 0.3
- LOOXIS Faceworx 1
- Magix Xtreme Print Studio 1.0
- Microsoft Plus PhotoStory LE 2
- PolyGo 1
- Poplins Animator Video 1.0
- Ragtime Solo 5.6.5
- Scribus Portable 1.3.3.11
- Wink 2 build 1050
- WireFusion Free Edition 5.0.24
- X-Blender 2.48a

### PRODUCTIVITY

#### Cayra 0.9.5



Cayra is a program that lets you represent tasks, ideas, concepts, and other items in a graphic, well-structured way. Cayra is based on such mental techniques, as Mind Maps and Concept Maps and helps you create colorful and informative maps. You can use Cayra for: Studies, Brainstorming, Project and people management, Planning and organizing, Creativity, Decision making, Problem solving, and Time management.

- Express Scribe 4.30
- FreeOCR Invoicer 2.2.3
- Jarte 3.3
- OneStep Accounting Standard Edition 4.0
- OpenbravoPOS 2.20
- To-Do DeskList 1.4
- Web+Center 6
- yEd Diagram Editor 3.0.0.5

### MS OFFICE

- Office XP Update: Service Pack 1



### (SP-1)

- Office XP Update: Service Pack 2 (SP2)
- Office XP Service Pack 3 (SP3)
- Office 2000 Service Release 1a (SR-1a)
- Office 2000 Update: Service Pack 2 (SP-2)
- Office 2000 Update: Service Pack 3 (SP3)
- Office 2003 Service Pack 1
- Office 2003 Service Pack 2 (SP2)
- Office 2003 Service Pack 3 (SP3)
- 2007 Microsoft Office Suite Service Pack 1 (SP1)
- Microsoft Office Compatibility Pack for Word, Excel, and PowerPoint 2007 File Formats
- Microsoft Office Compatibility Pack Service Pack 1 (SP1)

## Gaming

### GAMES

#### UT3 Titan Pack



Unreal Tournament 3: Titan Pack adds three new game modes, new maps, new vehicles and weapons and game improvements.

### GRID

- Medal of Honour: Airborne

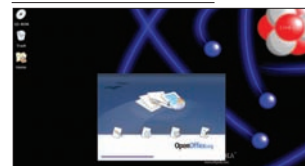
### CASUAL GAMES

- Creatrix
- Mario Forever Galaxy 1.8
- Mono 1.02
- N 1.4
- Stellar Frontier 1.1

## Linux

### DISTROS

#### Scientific Linux 5.2



Scientific Linux is a Linux release put together by Fermilab, CERN, and various other labs and universities around the world ready tuned for experimenters.

- Ubuntu 9.04 Alpha

### TOOLS

- Songbird 1.1.1
- Surffraw 2.2.4
- twitter 1.1.1
- USBView 1.1
- VueScan 8.5.07



# THE MOST INNOVATIVE FEATURE IN PCs YET.

Maximise Mobile Performance with Intel® Core™2 Duo processor.

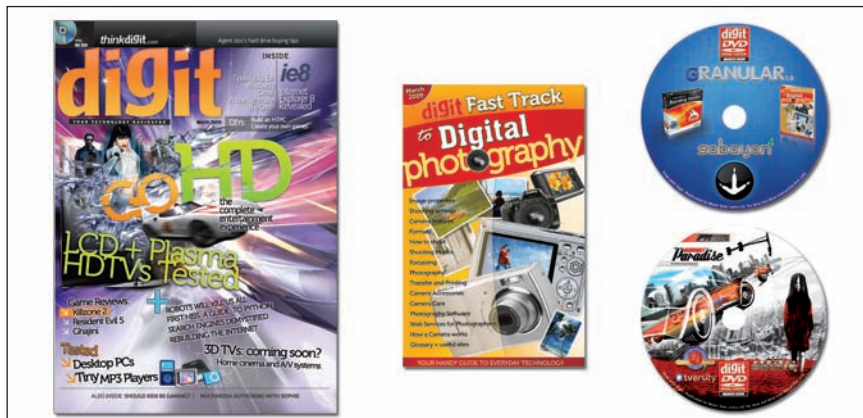
For more, turn to page 13.



Ideas from Lenovo®  
Notebooks and Desktops  
Workstations and Servers  
Software and Peripherals  
Service and Support

1800.425.0045 corp.sales@lenovo.com

lenovo  
NEW WORLD. NEW THINKING...



### Digit 3.0

"Wow!" That's what *Digit* made me say this time when I got the issue. Frankly, I'm not a regular reader of *Digit*. I only buy your special issues and have thus far settled for *PC World*, but *Digit* has impressed me this time — the layout is pleasing, and with two dual-layer DVDs and the *Fast Track*, it is great value for money at Rs. 150.

As Raaabo put it, I am eagerly waiting for *Digit* 3.0 and will be moving back to the *Digit World* from *PC World*, as I'm sure many others will. Keep up the good work!

**Rishav Mukherji**

Welcome back to our world. Stay, and we promise to make it much more informative, fun and addictive for you than ever before.

Editor

### Love you, but...

I am a regular reader of your magazine for the last three and half years, but this is my first mail to you. I would like to thank the *Digit* team for their great work!

*Digit* played a vital role during my academic and professional career, and is my technology newspaper when I have my morning tea — I can hardly imagine a day without it. I opened the March edition, and wow! I just couldn't stop jumping around. It was superb! A fascinating make over. All the sections are very good, but I enjoyed Sci-Tech the most.

Earlier I had some issues with delivery of my copy — I used to get it at the end of the month, and in fact am still to receive the February issue. What can be done?

**Ankita Agarwal**  
GE Energy, Bangalore

All readers should write to [help@thinkdigit.com](mailto:help@thinkdigit.com) for any problems with the magazine, *Fast Track* or DVDs. We'll send you the February issue ASAP.

Editor

### Beta Bugs

The March issue, your so called beta version, was really awesome! A really well thought out issue on all fronts, and just flattering for us readers who got more than we could've asked for! I loved the DVDs and the overall feel of the magazine.

However, just as with most betas, I found some bugs:

1. The copy I got had all its pages stuck together, and some pages were crumpled.
2. Something that has been missing in your PMP comparison is the "RMAA results" for a more precise calibration of audio hardware.
3. The new layout was excellent, but still it'll be better if ads don't pop up in between articles.
4. More unboxing videos of things you review please.

Lastly, thanks for listening to our needs — now if only Apple could be like that...

**Bhogpati Baboo**  
NIT Calicut

We'll try and improve the quality checks on the binding machine. Regarding RMAA, the software uses frequency algorithms for measuring acoustic performance and while it is exacting in terms of measurement, our experience has taught us that a device with a theoretically near perfect score may still not sound good to the ears. Musicality is important, and since sound is subjective, we prefer to depend on trained ears. With soundcards or audio devices, which are inherently closer in terms of performance, measuring tools such as RMAA are not always resorted to.

Asking for ads to not pop up during articles is like asking TV channels to show all the advertisements after the programs are finished. Sorry, some things we just cannot help, but we have increased the ratio of the number of article pages to ad pages, so you'll be distracted less.

To be honest, we're still in a teething phase for videos, but we're most definitely going to improve both the quality and quantity over the coming months.

Editor

### In store for the future

Firstly, I would like to congratulate and thank the entire *Digit* team for the March issue. It was a refreshing and welcome change. Of the few other magazines that I have read in the past, *Digit* is definitely more "value for money".

My first encounter with *Digit* was in my college library way back in mid-2006. What first attracted me to it was the reviews of DVD Writers, as it was around the time that I was looking to buy one, and *Digit* made my choice easy. I would like to make a few suggestions as there is always scope for improvement:

1. Firstly, I would like you to come up with an alternate subscription plan where a digitised version of the magazine is provided in the CD/DVD itself. I feel the need for such an option because my CA course leaves me with no time to read the magazine. I have stored the magazines for future reading (around 25 issues). However, now I'm running out of space.
2. The *Fast Track to Digital Photography* was commendable. Kindly come up with more such *Fast Tracks* on a regular basis that appeal to the masses and not just to programmers.
3. Provide more tutorial CDs such as the one on HTML.
4. Provide more reviews as well as the full versions of Simple 2D games.

**Shrinidhi Hegde**

We'll try and keep you happy on all counts. Look for some of your suggestions being implemented in the very near future.

Editor

### Nice look

Great issue I just love it. Looks tidy, smaller fonts, more articles, interesting sections, better article distribution, improved page quality, and the same excitement of a new *Digit* every month. Is the Esc section totally for game related articles? If yes, then its good. I am looking forward for some good gaming content. Developer's Corner was cool. I loved the How stuff works. Although I had heard about spiders, I didn't know how they worked. The only thing I miss in the new *Digit* is "Digit Diary". All of us would really like to know more about our technology navigators.

Here's a review of your magazine:

Features:	9
Performance:	9
Build quality:	9
Value for money:	9
Overall:	9

Get the *Digit* archive back please. Good luck for version 3.0

**VR Deepak**

The *Digit* archive will return soon, and *Digit Diary* is back. Thanks for the flattering review.

Editor



## Cover your tracks

Google now monitors your web behavior before targeting ads

# 14

## The best use Linux

CERN uses a variant of Scientific Linux to run the LHC, version 5.2 is on the DVD

## XP Piracy

Windows XP is the most used operating system in the world, at 64%. However, upto 35% of all machines that run XP are believed to be using a pirated version

### Tech Expert

I am from Darbhanga, Bihar. I live in a small village named Sara Mohan Pur, and I am a student of GNIIT. Can you believe, that at NIIT and in my village, my friends call me "the Tech Expert", and it's all because I've been reading *Digit* for over a year now. I am a really big fan of your magazine, and the software you provide in your DVDs. I really like Agent 001, Buzzword, Editorial, and Crossword, so please bring the crossword back. Instead of trailers and videos, you should provide more software for desktop enhancement, security, programming and operating systems such as Windows 7 (beta). Also, keep up the good work.

**Imbeshat Ahmad Khan**  
Darbhanga, Bihar.

The crossword is back. About the Trailers and videos, sorry, but we get so many requests for those that it would be an injustice to others to not put them in. (See the next letter)

Editor

### Best issue ever

This is the edition that I was eagerly awaiting! The *Digit* videos were good. I've looked forward to these for ages now. This issue was full of knowledge, entertainment and fun, and was very enjoyable. The new look of *Digit* is sexy.

I loved the HDTV, Desktop PC and MP3 player tests, as well as the Tips & Tricks to Windows 7. The new Consumer Protection section is great, and I'm glad you're informing us of our rights.

The Price Watch section was truly amazing, so please make sure it stays in *Digit 3.0* as well. Please provide minimum system requirements for all your game reviews. If you can, I'd also like some Windows 7 themes. Also, more *Digit* Videos please.

Absolutely the best issue of *Digit* ever. I can't wait for the next issue, and am eager to get my hands on it.

**Mayur Gaikwad**  
Satara, Maharashtra

Price Watch is a regular section, don't worry.

Editor

### Simple and superb

I bought *Digit* for the first time and I must say it was just superb. Everything was up to the mark. *Digit* introduced me to tech news. I loved the articles especially the mobile phone wish list, the review of IE8, search engines, home cinema and "When size matters" by Agent 001. I also liked the Tips & Tricks, and your Fast Track *ne*

*hila ke rakh diya!* The Drool maal was also amazing. This was the first time I have read any tech mag, and I am thankful that I bought it. To be honest, it was the attractive cover that made me buy it. But now I think that it was perhaps the best thing in that entire book store. The DVDs were also amazing.

I wanted to ask you about piracy. My PC has Windows XP installed, but I'm sure it's not original. In fact, I don't think I have any original software. What do I do? Open source is an option, but what about the OS. Please give us some tips on how we can avoid piracy.

Regarding HD trailers, I can't watch them because my PC is eight years old. I am planning to buy a new PC soon. You guys are marvelous to the power of infinity.

**Devashish Dixit**  
Jabalpur

I bought *Digit* magazine for the first time in February 2009, only for the DVDs. I didn't think there would be anything great in the magazine. After I was done with all the software, I would look at the cover, because it looked good, but didn't really read any articles. However, when I tried to get my hands on the March issue, and found that it was sold out, I sat down to read the February magazine. After I saw the contents inside it, I realised what I was missing. It's not you or me that's to blame for this misconception, but the other magazines in the market! I really salute you guys for giving us such a wonderful magazine... all in simple language! My God, I found that I was able to understand everything easily, because you write in a manner that anyone who can read English can understand. The Fast Track is even better in this respect. Although I don't know too much about computers, I feel that I have learnt a great deal after reading just a single issue. I've even successfully installed and tried my hands on Linux thanks to you. All thanks to you guys; keep up the good work.

**R.B.Vigneshwar**  
Sivagangai, Tamil Nadu

Devashish, you can stop using pirated software, and yes you don't even need to pirate the OS. You can just use Linux for free instead. Get your hands on our Fast Track to Linux, and you'll see how easy it is to install and use Linux – even on your old PC!

The cover designer thanks both of you for proving that he did an excellent job.

Editor

## Letter of the month

I've been reading *Digit* regularly for over two years. Over the past few months, I've noticed *Digit* undergoing some major changes. I thought you guys were already the No. 1 tech magazine in India. Why make so many changes? Aren't you trying a little too hard to beat the competition?

As a reader of *Digit* and the "tech-guru" amongst my family and friends, let me congratulate you on this month's magazine. In my humble opinion, you've achieved the goal of transforming the best magazine into the Ultra-Best. Everything from Buzz to the game reviews was awesome this month.

Price watch, Developers' Corner and DIY are some of the best additions to the magazine. Also, please do give the latest software on your DVD. The contents are good, but I was a bit disappointed not to get Vista-SP2 and Windows 7 beta this month.

Choosing a tech-product today is not very easy (thanks to you, it isn't that difficult either). But choosing a tech service such as an ISP, mobile service or Digital TV can be a nightmare. The companies fail to mention hidden costs. I got a postpaid wireless internet connection - Rs. 400 per month. Anyone would think that this was all they would have to pay, but when you get your bill you see a whole list of extra taxes. I'm not against taxes, but I think not mentioning them in a brochure is just not fair. I've even seen an ISP claim that for Rs. 499 they offer a 3.1 Mbps connection with unlimited downloads. Of course, you have to read the fine print which states that the term "unlimited," according to their "fair use policy" is equal to 10 GB data transfer, after which you have to pay Rs. 2 per extra MB!

In your Q&A section, Rajesh Das had asked about a problem regarding blurred images while using the internet. One possible reason for this is that he might have a software called Reliance Netbooster installed. This comes in the USB modem driver's disc that's given to Reliance NetConnect users. He should uninstall this software, because it tries to "Optimize" your speed by reducing the image quality in your browser. Keep up the good work.

**Rajan Kinkhede**  
Nagpur



# Microsoft on Internet Explorer 8

Digit speaks to Rishi Srivastava, Consumer & Online Marketing Officer, Microsoft India

Some of the features offered by IE8 include: extensibility, private browsing, and better CSS compatibility. One might say that IE8 is merely catching up to its competition. What are your thoughts on this point of view?

IE8 has been designed to provide consumers with a faster, easier, safer and more reliable web experience.

Overall, IE8 RC1 has many innovative features such as:

- **Accelerators:** Certain common tasks such as search, browsing maps online, sharing content on social networking sites, email and translation involved several steps. These have now been cut short to just one click with accelerators. You can learn more about accelerators from [www.ieaddons.com](http://www.ieaddons.com). Also, new accelerators are regularly being added to the Internet Explorer Gallery to further enhance browsing experiences.
- **Web slices:** As part of our daily browsing habits, we visit certain sites often. However, with web slices you can subscribe to portions of your favourite web sites, and with a single click in the Favorites bar, and view and interact with the latest updates you care about most. For example, you can see the latest headlines from a favourite news service, check the status or even bid on an auction, or view status updates from the social network — all without leaving the current page.
- **InPrivate Browsing:** By activating InPrivate Browsing, you can surf the web with greater confidence knowing that IE8 will not retain your browsing history, temporary internet files and cookies. This feature is useful when browsing at an internet café or using the kitchen PC to shop for gifts for friends that you don't want them to see. You can access InPrivate Browsing by either selecting a "new tab" or directly from the new Internet Explorer 8 Safety menu. IE8 was the first browser to introduce this capability. Additionally, Internet Explorer 8 includes a number of new features, such as:
- **Performance improvements:** Reduces the waiting time when starting the browser, or loading a page.
- **Enhanced "Find on this Page":** Enables you to find text on a web page more easily, in a way that does not obscure any of the page's content.
- **SmartScreen Filter:** Helps protect against phishing web sites, and sites known to distribute malware. It also helps detect and prevent "Clickjacking" which is a malicious technique of tricking web users into revealing confidential information or taking control of their computer.

- **Enhanced Address Bar:** Provides matches as the user types across History, Favorites, and RSS Feeds, searching against all parts of the URL string (and the page title) instead of just the beginning. Allows mistyped entries to be removed from the address bar.
- **Enhanced Instant Search Box:** Real-time search suggestions (including images) and inclusion of Web sites in the user's History make it easier to find content of interest.

**What is the Microsoft gameplan vis-a-vis the runaway success of Mozilla Firefox? How will IE8 staunch the desktop browser's market share loss?**

We respect the user's right to choose the browser that fits their needs. Internet Explorer 8 takes a big step forward in browser innovation focused on the way people use



Rishi Srivastava, Consumer & Online Marketing Officer, Microsoft India

the web today. Faster, easier, safer and more reliable than ever before, Internet Explorer 8 RC1 is the best version of Internet Explorer we've released to date. For example, through Accelerators and Web Slices we are optimizing the browser experience by removing repetitive, time consuming actions.

In fact, Internet Explorer continues to be the most used browser platform on the Internet and Internet Explorer 7 is the most popular browser on the Windows operating systems as measured by usage.

**With IE8, a Microsoft browser has passed the ACID 2 test. Why did it take this long for Microsoft to come to terms with standards, and more specifically to improve its CSS performance?**

Since Beta 2, we have submitted about 2,500 additional CSS 2.1 tests. The final release of IE8 will fully support CSS 2.1 standards. We expect very few changes

between RC1 and the final release, but will include necessary adjustments as identified by the developer community.

**What has been the most valuable lesson learned from IE7?**

This is true for any release, but the most important thing we can do is listen to and respond to our customers. Because so many Internet Explorer users opt into providing feedback about how they use the product, we have a strong sense of what real people all around the world do on Internet Explorer. IE8 builds on the strong foundation of IE7 and reflects a deep understanding of what real people do in their browser everyday and makes those things faster and easier.

**What improvements have you introduced in the developer toolset through IE8?**

In IE8, the tools formerly available via the Internet Explorer Developer Toolbar are built directly into Internet Explorer 8 with expanded functionality (simply push F12 when using Internet Explorer 8). These tools enable developers to quickly debug HTML, CSS and JavaScript in a visual environment. Developers can quickly identify and resolve issues because of the deep insight the tool provides into the DOM.

**Finally -- any chance of IE8 opening its source code? If not, why not?**

Microsoft is committed to industry standards and IE8 addresses the three-core pieces of this support — broad compatibility, open documentation and open access.

**Broad compatibility:** To enhance interoperability of its high-volume products, Microsoft will determine which standards to implement, based on customer feedback, and work with other major implementers of those standards toward achieving robust, consistent and interoperable implementations across a broad range of widely deployed products.

**Open documentation:** To increase transparency and promote inter-operability, Microsoft will document how it supports those standards, including documentation of any extensions relevant to inter-operability.

**Open access:** As with its protocols and APIs, Microsoft will publish all information about its support for standards on its web site, including the specifics of standards extensions, without requiring developers to obtain a license, or to pay a royalty or other fee to access it. Microsoft will also make available a list of any of its patents that cover any of these extensions, and will make available patent licenses on RAND terms. ■

[readersletters@thinkdigit.com](mailto:readersletters@thinkdigit.com)





**buzz**



## Robot fish for a green Earth

Scientists in the UK have deployed robotic fish in the seas of Spain, to detect pollution

## The "Netbook" spat

**N**etbooks — the new segment of tiny laptops may be all the rage lately; but it turns out that the term *netbook* is actually owned by Psion Teklogix. This little known company had trademarked the term when it created the Psion Netbook handheld computer in the late 1990s. Based in Canada, it is facing litigation from giants such as Dell and Intel seeking to negate the trademark. Intel who has filed the most recent complaint argues that Teknologix no longer makes Netbooks and that the general public has accepted this word into it's lexicon to describe the new breed of ultra-portable, inexpensive range of personal computers used to surf the net. Intel also claims that Psion lied in one of its statements to the Patents and Trademarks Office. On the Psion web site however, the Netbook Pro appears in the discontinued category.

The story doesn't end there though. Psion has also countersued Intel claiming that Intel's continued use of the word, dilutes the significance of Psion's own Netbook. It claims that the Netbook mark is recognised by the consuming public as something that relates to Psion. Highly doubtful. But let's see where this war of words ends up.

## Free Gary

**A** self-confessed UK hacker Gary McKinnon has been embroiled in a long standing battle with the US government for hacking into around 90 of its military systems. For six years since his arrest in the UK, the case has been proceeding towards his imminent extradition to the US to stand military trial. Now it looks like it's finally coming to a close, with Gary being packed off to the US where he could face up to 75 years in prison. What makes this case different is that Gary, 42, is suffering from Asperger's Syndrome and claims he was looking for evidence of UFOs, which are commonly believed to be kept secret by the US govt. Several eminent personalities in the UK have come forth in support of the hacker to be tried in the UK itself, including Lord Carlile of Berriew and human rights campaigner Terry Waite. According to Waite, Garry is only being irrationally obsessive (which is a common symp-



tom of the disorder) about his belief in little green men and posed no threat to national security. In fact, he has only highlighted the vulnerability of the US defence systems. Perhaps a bit of common sense is required.

## Nokia wants laptop pie

**I**t really doesn't take a genius to figure that the laptop and mobile markets are going to converge somewhere in the not-so-distant future. Nokia seems to know this quite well, and has recently announced that it is actively looking at such an opportunity. Of course, this is all just internet buzz, but several reports claim that an announcement to this effect was made by Nokia CEO Olli-Pekka Kallalavuo to Finnish broadcaster YLE. There are other indicators too. The mobile giant's decision to launch a USB HSDPA 3G laptop dongle is one example. Besides, there is talk of Symbian on laptops too. The advantages? Since the OS is optimised for low-power consumption, there's the

promise of better battery life. But will it be able to take on the hardware in terms of drivers? Laptop users want to be able to attach and install a multitude of hardware devices to their machines. And what about the shoddy user interface of Symbian? Surely Nokia will put some R&D into improving that aspect. Besides, Nokia might actually come up with some nice looking laptops, since its phones have scored high on design so far. Also, leveraging its massive manufacturing capabilities, it can also compete on price. Let's keep an eye out, shall we?

## Cover your tracks

**Y**our late night surfing in the nefarious corners of the web can give you a shock when you face ads the next morning at your workplace. Google is testing a radically different approach at making ads more relevant to surfers. According to the new model, Google peeks into your history to throw up relevant ads when you show up on its sister sites — YouTube for example. According to Google, this gives more value to the advertisers, and the user gets more relevant ads. This model essentially tracks the behaviour of people before throwing up relevant ads, and is facing a mild backlash for being invasive.

Users can choose to disallow Google from tracking their movements on the web, and additionally, specify what kind of ads they want to see. A new tool called ads preference manager can be used to change the way these ads are displayed.

This tool allows you to specify categories of ads that you'd like to see, and even an option to disable those ads, which is not the same as disallowing Google from tracking you. Google's past run-ins with user privacy include personal pictures in Google Street View, the infamous 60-year cookie, and AdSense itself.

## Debris to miss ISS

**S**pace may be the final frontier, but what lies in between is a whole lot of junk. That's right — old obsolete satellites and other discarded orbital junk spin around the planet and it's getting crowded up there. Recently, a piece of a Russian satellite came within half a mile of the international space station (ISS). Mission controllers at the Johnson Space Center in Houston were considering evasive action, but ultimately the problem was solved itself. Latest tracking information showed that the piece of debris will narrowly escape, passing on the outskirts of a specified control



zone around the space station. "It's a very low probability of hit — less than one in 100,000", an official has said. Though this is not the first close call the space station has had in the recent past. Earlier, a piece of debris five inches across and coming from a rocket booster, came within three miles of the station. Since it was hurtling at 20,000 mph it posed a serious risk and forced the astronauts on board to take cover inside their escape capsules. Maybe an orbital clean up crew should be sent up there. Space trucking, anyone?

## PC sales nosedive

**P**ersonal computer sales are expected to hit rock bottom during the year 2009. The global recession is causing dire market predictions from the top PC manufacturers. HP, Compaq and IBM have all predicted low sales. Sales dropped by 2 per cent over the last quarter of 2008, compared to the same time period a year ago. Dell was one of the few companies to show a rise in the number of units sold, but it too, has







A videogame called House of the Dead: Overkill has become the most profane ever — it drops the F-bomb 189 times, or about once per minute

# PIMP THIS BUM!

Siddharth Parwatay

Until recently Tim Edwards was just another one of those sign-board holding bums at a busy Houston underpass; ignored by most people. But now he has taken his bumming to a whole new level — Cyber Space. That's right; meet the world's first online bum!

How did this most unlikely enterprise begin and what does being an online bum mean, anyway? It began with a twist of fate and a father-son duo trying to come up with a marketing campaign that ended up in the form of [www.pimpthisbum.com](http://www.pimpthisbum.com). A website with an intentionally controversial name where Edwards gives regular webcasts to curious visitors who ask questions about Edwards' life and his decline of fortune from being a regular job holder with a home, to a hopeless roadside bum. It's also a front where visitors can donate money, goods and perhaps moral support to help Edwards get back on track. Sounds ridiculous right? But that's exactly what Kevin Dolan and his son Sean wanted to do — insult people's sensitivities so that they would go to the site and see Tim. Had the site been called [HelpTim.com](http://HelpTim.com) or something similar, people would have ignored the site, goes their theory. The Dolans initially wanted to just promote their budding internet marketing business until Sean hit upon this idea and decided to do some good, while they're at it.

Tim on the other hand is quite the charmer, and people seem to instantly fall in love with him. He's got an easy going attitude and doesn't blame the world for his plight. The web site features YouTube videos of Tim going about his daily Bumming duties and visitors can even follow his activities through a live day and night Web cast.

Visitors also get regular updates on his path to recovery. These include checking into an alcohol rehab program and plans to shave his beard and trim his hair. His detox program begins soon at the Seattle-based Sunray Treatment and Recovery, which is providing the \$13,800, for the 35-day program, free of charge. There are plans to air

"The web site features YouTube videos of Tim going about his daily Bumming duties and visitors can even follow his activities through a live day and night eb cast"

web casts as Edwards goes through the program. People have even donated their flier miles to cover his travel. What's funny is that he's actually got a nice thing going for himself, so why would he ever want to stop being a bum?

Some activists are claiming that this does little to address the hard truth of



## Pimp these Facts

Edwards had been homeless since Aug. 19, 2004 (he remembers the exact date)

Some rules he lives by: Keep to your own territory. Beg enough for the bare necessities — food, cigarettes, drink — then get off the corner. Learn whom to trust and whom to stay away from.

His descent into homelessness began after the deaths of his mother and grandmother. He says many of his fellow homeless friends have just died because they lost hope.

Edwards says he has tried programs aimed at getting the homeless off the streets, but none have worked for him. Tim used to own a car and house and was an office manager. Tim collects Pesos. He gets a lot of them. Speaking of other addictions he says he was addicted to the game EverQuest

being homeless. Tim doesn't care though. "There's always someone who's gonna take offence to anything" says the disenchanted Hobo adding "If you help an old lady across the street there's someone who's gonna take offence to that too!" He is quite hopeful that this online exercise will also help alleviate the condition of his fellow comrades on the streets. Anthony Love, president of the Coalition for the Homeless of Houston/Harris County has an interesting take on the matter. He says, "He is a person. His name is Tim. And to pimp anyone is not something I would endorse".

# Google's Shenanigans?

## Or just a company defending its rights?

**A**aron Greenspan is certainly gaining more and more infamy in web circles. His latest claim to fame involves suing Google for \$761 and actually winning. Yes, it's not a life-changing sum of money but perhaps a quixotic endeavour. Never heard of Greenspan? He was the guy who a while ago claimed that he invented Facebook, and not Mark Zuckerberg — the generally regarded founder of the social network. Greenspan's version of the story is that while at Harvard, his batch-mate Zuckerberg stole the idea from him. Greenspan had apparently first hit upon the idea while doing a project called HouseSystem — a set of online resources for Harvard students including a feature called "The Facebook". Greenspan even wrote a book about it titled *Authoritas: One Student's Harvard Admissions and the Founding of the Facebook Era*. Going by Zuckerberg's latest antics with Facebook's privacy policy, it wouldn't be wrong to assume that there's no smoke without fire. But coming back to Greenspan's recent tryst with the other online giant — Google — the story is far more interesting. Before delving into the details however, remember this is all simply one person's claim against another entity.

It all began when Greenspan decided to subscribe to the Google Adwords service in the hope of popularising the aforementioned book via Google Search ads. He wanted his ad to be thrown up anytime someone ran a search that included the word Facebook. Google wouldn't allow this because Facebook is a trademark registered to Facebook. So, Greenspan filed a petition with the US Patent and Trademark Office claiming prior use of the word and even going back to the old slug match of accusing Zukerberg of fraud. The plea is still pending, but Greenspan believes that Facebook lobbied Google to implement this ban.

The story doesn't end here. Greenspan in the meantime signed up for AdSense, to be able to post ads on his own website. When people click



on such ads Google works its series of arcane algorithms and deposits a sum into the AdSense holder's account. Greenspan was able to use this service for his website for a while until the company arbitrarily discontinued his account. He was given a standard automated response on his account page which said his membership in the program "posed a significant risk to our AdWords advertisers". Now this treatment is usually meted out to miscreants indulging in click fraud — which involves installing adSense on an empty site (a place holder domain) that gets a lot of traffic for some reason (probably owing to its name). The result is that the website gets a very high click-through rate from people with not much interest in the topics of the ads that they are clicking on. They are probably just clicking on them to exit the site.

Whether he was involved in click fraud is not clear but Google didn't offer Greenspan any explanation for axing his account and besides, all of his communication with the search company went unanswered. Note that the search giant has a clause in its terms of service, by which it reserves the right to cancel AdSense members accounts' for "any reason". When Greenspan was after all able to reach a real person in one of his attempts he was told "There's no one I'd be able to transfer you to", he writes on [Huffingtonpost.com](http://Huffingtonpost.com).

Finally frustrated, Greenspan filed a civil small claims case at the Santa Clara County courthouse for \$721 — the amount accrued to his AdSense account before it got canned. At the hearing Google apparently sent over a greenhorn paralegal, who refused to divulge the reason for the termination of his account and rested her entire defence on the fact that "Google's terms of service specified that the company could terminate accounts for any reason". According to Greenspan the judge was not impressed and even went so far as to ask the paralegal "But you couldn't terminate my

account because of the colour of my eyes, could you? I have brown eyes. You couldn't terminate my account because of that." The judge eventually threw the case out and according to Greenspan asked Google to pay his 721 plus another 40 dollars in court fees.

Whether the whole sordid affair happened exactly as per the version described by Greenspan is not very important. What is important is the underlying issues it throws up. Firstly, that Google's terms of service are arbitrary. Second, if Greenspan's website was thrown up automatically as a possible fraud by the application of an investigative algorithm, its detection system is flawed because moral intent cannot be understood through mathematical analysis. Third, as Greenspan argues — "terminating accounts for 'posing significant risk' just when they started to earn significant amounts of money seemed like a great way for Google to cut accounting liabilities in a difficult economic climate". And lastly none of this can be put under the scanner as AdWords and AdSense have limited reporting capabilities.

The gathering belief the world over is that Google and its affiliated companies are becoming some sort of an unapproachable shadowy cartel. But apart from that, this incident even has undertones of two biggies coming together to quash the little guy. ■

[siddharth.parwatay@thinkdigit.com](mailto:siddharth.parwatay@thinkdigit.com)



**Undo that thing you do**

Gmail has added an undo feature via Labs. The feature holds your email for 5 seconds before sending it off

# First look at Windows Mobile 6.5

Siddharth Parwatay

Somewhere in mid-February, against the back drop of the World Mobile Congress, Microsoft unveiled its latest Windows Mobile version – the eagerly awaited version 6.5. Initial reports spoke of an all-new home screen (R.I.P. Today screen) and several UI improvements. The new OS also introduced an increased emphasis on being finger-friendly. But since then, there have been many mixed reactions. Here's a lowdown on some of the new features.

## The honeycomb launcher

The start menu now comes in an attractive honeycomb format, which aims to minimise accidental tapping or fumbling around for what you want. This is also because this Honeycomb screen is completely customisable allowing you to have your favourite applications or links one tap away. The large icons also go a way to make the interface finger-friendly.

Each subsequent layer in the menu also follows the same format. Sure, a few existing users who are used to the older format will take a while to get used to it, but their number would be few, we imagine. This is definitely a step in the right direction. We feel that the UI designers should do something about the Close button though; reports say that one is still a pain to tap.

## Home screen and new user interface

Zune's influence on the new home screen is undeniable and it's perfectly in line with WinMo's new philosophy of "people-centric" systems. This interface is designed to feed important information up front and create for a better navigation experience. Thus, items such as new emails, texts, missed calls and calendar appointments are fed to you right on the home/lock screen. You can swipe up and down through the items and left or right for more of each item. There is also the

option of being able to add web widgets for things such as weather. These widgets will automatically update, improving the information feed to you.

## IE Mobile

With Windows Mobile 6.5 you'll get IE 6, which is based on the Internet Explorer 6 engine. The browser will support Flash and JavaScript. It also includes new tools for better page navigation, such as zoom in/out slider (see image) and a breadcrumb feature that shows you where you are on a web page. Through these changes, your browsing experience when viewing desktop-sized pages should definitely be better than with the older Pocket Internet Explorer.

If you are wondering why this OS still bundles a version 6 browser, when IE 8 is out, the answer is that the majority of websites were built to



## the IE 6 standard. Web applications

One of the biggest inclusions on Windows Mobile 6.5 is the widget engine. This will allow applications built from HTML and JavaScript to run on a device, but without the address bar and other browser menus. A widget is simply a compressed collection of HTML, JavaScript, and image files that work together to perform a function. Companies offering web-based services can use this feature to create simple applications for the mobile OS. For example – widgets for auctions on eBay or news updates can be added to bring you updates on your mobile phone. Reports indicate that the current build will come pre-loaded with MSN Money, MSN Weather and a Live Search widget. Sure, Apple and even Nokia have this feature, but better late than never, right Microsoft?

## My Phone

With its new My Phone application, Microsoft will offer a service to sync information with the cloud. My Phone is a backup and restore application that lives on the web and allows you to back up your phone's information online, while being password protected. With automatic

syncing and backup, you can store your contacts, appointments, text messages, and other information using the service and then easily restore the information to your device if you were to switch phones or worse, lose the one you have. It even allows you to upload videos and photos. The service is currently in beta and is invitation-only.

## Windows Marketplace

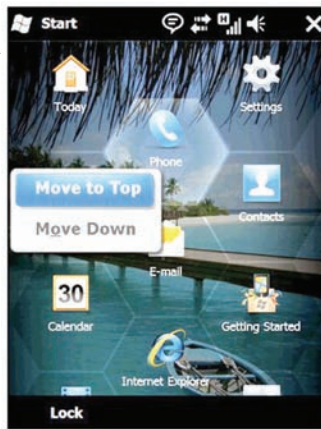
Think of it as the App Store for Windows Mobile. Through Marketplace, users will have access to downloadable applications for their Windows phones. The new Marketplace will be included with all Windows phones based on Windows Mobile 6.5, and will allow users to browse, search and download applications. Developers who have already created programs for Windows Mobile will be able to offer their products through the Marketplace after a security and compatibility check from Microsoft.

## Where are the phones?

Currently all phones which can support the new version of Windows Mobile are still being bundled with the older v.6.1, including the HTC Touch Pro2 and HTC Touch Diamond2. They will be upgraded to v.6.5 free of charge when the OS officially launches around September 2009. Incidentally, Microsoft has decided to call handsets based on their OS, "Windows Phones". The LG-GM7300 is one such example.

## Windows Mobile 7

If this stuff doesn't impress you much, and there is little earth shattering anyway, more like baby steps, there is always the next version to look forward to. In fact, even Microsoft CEO Steve Ballmer admitted that Windows Mobile 6.5 might not make the OS a preferred choice for prosumers. Therefore the general consensus in the mobile world is that v.6.5 is Microsoft's first step towards a possibly market disruptive Windows Mobile 7. In fact, Microsoft has taken several steps to accelerate the team working on the next version. Still it looks like we won't catch a glimpse of Windows Mobile 7 until sometime in 2010.





mobile watch

## Tencent to a billion

Chinese social network Tencent has exceeded \$1 billion in revenue in a single year.

# iPhone OS 3.0 Out!

iPhone users (and fanboys alike) now have new ammo to defend their beloved iPhone from its detractors. The ammo we're talking about comes in the form of the new iPhone OS3 which promises to cover up all the minor flaws that previously plagued the iPhone. This OS, which is Apple's third major release for the iPhone, boasts of more than a 100 features which include search, copy-paste, MMS, landscape keyboard and stereo Bluetooth. While the OS will be available to regular folks this "summer", Apple has already released a beta with a new SDK comprising over a thousand API function calls. So developers the world over can get their elbows dirty with the new OS starting immediately. The OS will be available for iPhones as a free update and at \$10 for the iPod Touch.

Here's a look at the features that comprise this version 3 OS. Note though — after going through the list you'll realise that many of these functions are really quite basic and in fact, essential. So whether you're an iPhone user or not, it'll make you wonder why Apple couldn't come up with them in the first place.

### Spotlight search

Users can now use a comprehensive search function to scour through all of the core applications on the iPhone — such as Mail, Messages, Calendar entries and the song library. Flicking the home screen to the left will bring up a search bar. Once the user begins to enter a term, the phone will search sequentially through Contacts and other applications, to bring up results. Selecting a search result will automatically launch it in the application that the result was picked up from. This Spotlight search can even be used as a filter to search for a particular application; useful for users who have several pages of application icons.

### Copy-Paste (It's about time!)

The much missed copy-paste function seems pretty nifty. To select a block of text just tap, and a selection box appears

around it. At the corners of the selection you get grab points to re-size the said box. The function has cross-application support, so you can go crazy with copying text from all over the place. Even a bunch of photos can be selected, copied and pasted into an email. The lack of simple copy-paste functionality has always been

### Loose Change

A few other useful features thrown in to OS 3

**Voice Memos:** now use the microphone to record memos. Edit the memo and share it via email or MMS.

**Landscape Keyboard:** Now available in all key applications, including Mail. Fat fingers rejoice.

**Shake to Shuffle:** Going the Sony Ericsson way? Shake the iPhone to shuffle songs; pretty useful for listeners on the move.

**Safari:** Anti-phishing technology and auto-fill.

**Better GPS support:** App developers can now build applications around Core Location, allowing apps to deliver turn-by turn direction updates.

**Parental Controls:** Probably means that applications will get ratings.

**CalDAV:** Sharing scheduling information supported by Yahoo! and Google.

quite the black eye for the iPhone. As to why it took so long, Scott Forstall, the head of iPhone software development said that it's not that easy and there are security issues. Wonder what that means...

### MMS

Multimedia Messaging Service, which is common in many basic phones, has now found its way to the iPhone. This means that you can send image-enhanced text messages through your iPhone without using native email, but rather a messaging service. Although it allows images, there's a lack of video support which is found in most other MMS capable phones. Something for the next update, eh Apple?



### Peripheral app support

The iPhone dock connector has been freed, that is to say the 3.0 update will allow developers access to third-party hardware peripherals. So we can expect FM dongles soon. And as shown off in the press conference at Apple's headquarters in Cupertino, an attachment that reads a patient's blood pressure that is controllable via the phone's interface instead of the attached device.

### In-app payments

This new system allows users to purchase additional content from within an application. For instance, an expansion pack for a game you have bought could now be sold as an add-on; just buy it from within the app and carry on playing. It was demoed at the press conference using Sims 3 which lets users buy items for in-game characters. This introduction of a micropayment model should be another feather in Apple's money-making cap, as Apple still gets to keep 30 per cent of whatever the developer charges.

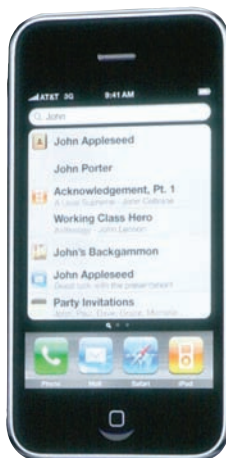
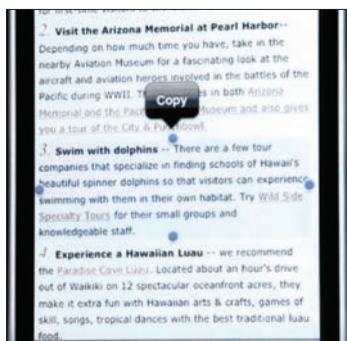
### Stereo Bluetooth and P2P connectivity

Bluetooth P2P is a feature exclusively developed for the iPhone 3G. With it, devices will be able to connect to each other via Apple's Bonjour technology. So, expect users to be able to play multiplayer games, and perhaps even share files without being connected to a Wi-Fi network. The transmission channel will be iPhone's built-in Bluetooth antenna.

### Push Notification

The Push Notification feature provides developers a way to alert users of new information, even when an application is not running, through a push server. Developers can make apps that will make use of text notifications, can trigger audible alerts, or add a numbered badge to the application's icon. Apple is admittedly late on this one, but better late than never, right? ■

siddharth.parwatay@thinkdigit.com







feature

## A global recession

According to the IMF, the world economy is set to decline by between 0.5% and 1.0% in 2009 — the first global recession in 60 years

# Unsocial Networking

**In the context of the on-going recession, it pays to be active in the realm of business networking: make contacts, seek jobs and build your social capital**

Siddharth Parwatay

**S**tories of layoffs are common the world over. Does this mean there are no jobs at all? Not really. It's only a matter of being spotted. Sure, you probably have your resume uploaded on job portals, but in this cut-throat, competitive time that's not nearly enough. You need to build contacts, get noticed — basically, you need to network. Professional networking increases your chances of finding a job. And if you're one of those fortunate enough to already have a job — and are probably *holding on* to it — the contacts you make via professional networking will go a long way.

So what are the web sites in the domain of business networking, and what do they have to offer? One of the most popular ones in India is LinkedIn. Apart from LinkedIn, many headhunters use resources such as Siliconindia, Ryze, Konnects, Xing.com and JobsINBOX to scout for talent. "One of the main advantages that web sites such as LinkedIn offer is a platform for you to showcase your credentials to the world while being subtle. It's less obvious than putting up a profile on job sites," says a partner at a well known search firm. (Considering the secrecy of process and the seriousness with which such firms look at privacy, no one we spoke to wished to be named). Having a professional profile with one of these networks is considered perfectly normal.

As for the multitude of web sites offering business and professional networking services, they all are pretty much the same. Some are more user friendly than

others, and hence attract more users. More users, in turn, increase their functionality. LinkedIn, for instance, has 35 million registered users worldwide. There are some networks intended specifically for certain industry verticals. Ryze.com gained a lot of momentum with entrepreneurs at one point in time because of the offline meets it used to conduct in local cities, thereby bridging the gap between online and actual networking.

With the coming of LinkedIn, Ryze quickly fell off the popularity charts because it was pretty unwieldy to operate. Verkko.in is another vertical-oriented networking web site. It is a group of closed community networks for premier Indian business schools. Being actively managed, it is directed at delivering tailored jobs to its members. Its co-founder Vikhyat Srivastava calls his brand of connecting people "value networking".

Another popular web site is **siliconindia.com** which caters to most verticals, not just the IT audience, as its name might suggest. The web site claims to now have over 2 million registered users. We did a random search and found several hundred people in the media industry listed. It is famous for its blogs and for the unique mentor-apprentice system it follows. Other worthy mentions are **ibсроcks.com** a portal for ICFAI business schools, and **CaclubIndia.com**, an exclu-

sive chartered accountants' network.

There are also service providers such as **CollectiveX.com** and **Ning.com**, which allow you to host your own little business or professional network. So you can actually call it a *network of networks*. It's a great networking tool for specific situations. For instance, if you happen to be hosting or attending a conference and want the members to break the ice and get familiar even before the actual seminar. Ideas can be tossed around, discussions conducted, bulletins and updates sent out before starting the actual event. It can even be used as a company intranet or a specialised alumni group. In fact, a pan-IIM alumni group is hosted on CollectiveX.

The operating philosophy of each of these web sites is also different. Some allow free communication and connectivity between their users, while some such as LinkedIn are more guarded. You cannot just add people randomly — you need to know them. This is established at the time of sending a request by verifying how you know the person you intend to connect with. In extreme cases, the users' email ID is requested. If several of your requests are rejected by people indicating they don't know you, you then have to compulsorily enter the recipient's email ID. Perhaps it's due to this emphasis on user privacy, that LinkedIn is popular.

How do such networks work and what do you need to know to get them to work for you? To get started, create a profile by giving relevant details of your educational and professional career path till date. How much information you give is entirely up to you, but remember to play by certain rules. Your online profile is like your resume — so be honest. A reasonable expectation among

CONNECTIONS



Shrikrishna Patkar



## feature

# 51 million

The number of jobs that could be lost in 2009 according to UN predictions.

professional networkers is that other members provide accurate information about themselves. As you would on your resume, present yourself well, be concise and decide what you want to reveal. Stick to relevant experience. Other people on the network want to know more about you apart from just the professional brass, so highlight some of your prominent interests. These may help you and others to find common ground to connect. However, don't overdo it.

Be sure to have as complete a profile as possible. If you try to network with people with an incomplete profile it looks like you're only interested in finding people but won't bother to include enough information about yourself to indicate how a connection with you might be mutually useful. Take a few moments to fill in the gaps. If you wish to include a photo on your profile, it goes without saying, that you keep it professional.

On LinkedIn, be sure to edit the public profile link. This will give you a unique url such as <http://www.linkedin.com/in/yourname>. It's easy to remember and is picked up by search engines. Speaking of searches, you should include relevant key words and phrases that define your interests and the purpose of networking. These catch words will make sure you are thrown up regularly in searches.

Next comes the actual networking. There are several ways to go about this. The first thing any networking web site will do is import contacts from your email service. However, these are people you know quite well, and so defeats the purpose of networking. You are supposed to network to meet new people.

From the point of view of active job seeking, there are two approaches you can take. There are third-party recruiters and in-house HR personnel of companies active on professional networks. It is important to connect with them. The other approach is to connect with people of the same grade within a company you aspire to join. Getting familiar with would-be colleagues means that you might get referred for an opening. You can also join one of the many industry specific groups on the web site such as a group on private equity, or public relations. People within a group are quite willing to network with each other. Suppose you develop J2ME apps on the side. You can find several groups and really hit upon something big in a collaborative project, perhaps. Your groups can also indicate to people what you are there for. If you come from a reputed school, join its alumni, maybe go ahead and create a group if you can't find one you're looking for.

While going about networking with people, remember it's not a contest to see how many contacts you can make. The quality of your network is as important as its size. Contacts from irrelevant indus-

tries or areas where you have no interest or knowledge, aren't of much value. So be picky about whom you connect with. LinkedIn will impede you from growing your network indiscriminately. Its policy is strictly against spamming and displaying connections as trophies. In fact, the exact number of connections for any user will not be shown beyond 500. One of the first things you should do is protect the people in your network by making your contacts list non-public.

There is also a system of introductions that LinkedIn follows. If there is someone in your network whom you wish to connect with, but this person is two degrees away from you, you can use the trusted contacts in between for an introduction. Another interesting outcome of LinkedIn's guarded outlook is the emergence of a band of people who call themselves LinkedIn LIONS, or LinkedIn's Open Networkers. These people are rather open to networking and will typically have keywords such as InvitesWelcome, LION and Open Networker in their profile. Search for these keywords and send an invite to connect to these people. Don't forget to add relevant details in the message you send to them, such as your interests.

### What about Facebook and Orkut?

According to recent reports, there has been a significant growth in the number of people above the age of 30 who use Facebook. In fact, [iStrategylabs.com](http://iStrategylabs.com) reports that over the last six months the 35-54 year old demographic segment not only continued to grow the fastest, but it accelerated to a 276.4 per cent growth rate. Naturally, these are people who have careers on their minds rather than college. So a fair bit of professional networking does happen on social networks such as Facebook or Orkut. As with professional networks, you can find a fair number of industry specific groups and communities there too. Recalling an incident, an active networker said, "I had ran out of LinkedIn invites and wanted to recruit some people for my venture. After screening some profiles and narrowing in on a candidate, I went to Orkut and tracked him down. I then spoke to some common contacts, arranged a meeting and nabbed some good talent". Taking a cue, we must realise that not only can social networks be used as alternative means to connect, but also to run background checks.

The line between strictly social networks and business networks is fast blurring. Some argue that using social networks for connecting to people professionally, has its own advantages. They say you get to know people as a whole. This brings up a whole new can of worms about privacy, and what you want your prospective employers, employees, and colleagues to see. Young professionals who are using Facebook for professional networking need to be aware of the

## The art of connecting

### Visit as many groups as possible that spark your interest

After all finding common ground is the key to expanding your network.

### Be clear about your purpose and goals of networking

You should be able to articulate what you are looking for and how others may help you. Too often people will genuinely ask you, "How may I help you?". In such situations, you shouldn't be left groping in the dark for a response.

### Forward referrals quickly

Remember you are a valuable link in the chain when it comes to being a part of a professional network. Be active with any reference requests you get and if you can't fulfil them, reply stating your reason.

### Create a meaningful profile

Your online profile is your virtual business card. Make sure it represents you well. Use apps and recommendations to enhance your profile.

### Be concise and make your intentions clear

People on LinkedIn or any other networking web site have very little patience for beating about the bush. If you are connecting with someone with a job opportunity in mind, say so. If you're looking at a network for no immediate purpose, make that clear as well. Same goes if you're seeking investments for your venture.

### Gratitude and courtesy go a long way

Much like in the real world, a heart-felt thank you, or an offer to reciprocate a favour will do you good.

### Avoid default text

Whenever approaching new people, remember to customise the template message. Nothing more annoying than reading "Hi, I wish to add you to my network - XXX".

amount and type of information they are sharing. Limit your photos and keep a close eye on which photo you're tagged in. You'll find yourself choosing friends wisely, making friend groups and controlling exactly what each group gets to see.

For those of you holding on to a job, surely there is more to social networking. Remember that there is a whole breed of networking web sites out there that helps millions of users conduct far more contextually important activities such as scout for business opportunities, connect with recruiters, and find the people and knowledge they need to achieve their goals. In fact, in the context of the on-going recession, there couldn't be a better time for you to be active in this realm and invest in building your network and social capital. You never know when someone might be looking for you and how someone you know can help you connect. ■

[siddharth.parwatay@thinkdigit.com](mailto:siddharth.parwatay@thinkdigit.com)





how to

## Twitter.com

With a 1,382% growth rate between Feb 2008 and Feb 2009, Twitter is the fastest growing community destination

# Your head in the clouds

## Synchronise your contacts and calendars with the cloud

Kumar Jhuremalani

The need to sync your contacts and calendar at all times is a must for all these days. Now with the cloud, this thought has become a reality. Gone are the days where you would face problems of missing a particular contact that is stored only on your work PC. Maintaining an identical set of information on multiple devices such as hand-helds and smart-phones is now easily done using the internet and cloud-based services. With the cloud now lurking above us all, you can keep everything online right from contacts and calendars to even documents and spreadsheets with services provided by various sites such as Google, Yahoo! and even Windows Live. These services allow you to keep everything in sync — right from your home PC, work laptop and even your hand-held device such as a smart phone, so that you don't miss out on anything important. Moreover, with several wireless connectivity options such as WAP, GPRS, Wi-Fi, and even 3G, now available, keeping contacts and calendars in sync is a seamless task. Here we are going to show you how to synchronise your contacts and your calendars using the most reliable services currently available.

### Synching contacts and calendars between Gmail and Thunderbird

#### Calendar

Thunderbird is an email client from Mozilla and a good alternative to Microsoft Outlook. Synching calendars on Thunderbird is not that hard. First you need Lightning — the calendar extension for Thunderbird. Download the XPI file from [www.mozilla.com](http://www.mozilla.com). Once you have done that, go to Tools > Add-ons from the menu bar. Next, click on Install and select the XPI file.

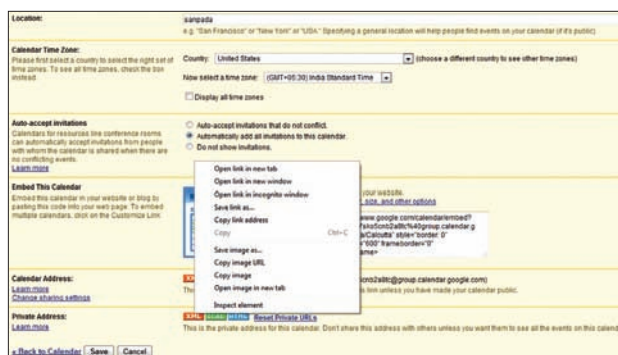
You will also need another extension called Provider. Provider is the extension that will sync your calendar in Thunderbird. You can download and install it the same way as for Lightning.

Now you need to login to Google Calendar and click on settings in the top-right corner and then open the Calendar Settings.

Click on the Calendar you want to sync and scroll all the way down. You will see two options — Calendar Address and Private Address. Next to that you will see three addresses XML, ICAL and HTML.

Right-click XML and select Copy Link Location. If you want to sync multiple calendars then you will have to start from this step and follow the rest of the instructions separately.

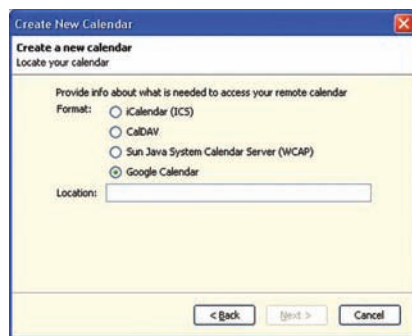
Now fire up Thunderbird and go to



Settings in GCal - Copy the link address of the Private Address XML

File > New > Calendar from the menu bar. The first thing that you will be asked is the location of your calendar — select "On the Network" and click Next.

You now have to specify the Format of the Calendar, select the "Google Calendar" radio button. If you don't see that radio option, make sure you have installed the Provider extension and restarted Thunderbird. In the location box, paste your GCal Private Address XML



Paste the copied Private Address XML in Location that you copied earlier and click Next.

The next window will ask you to give your calendar a name and a colour

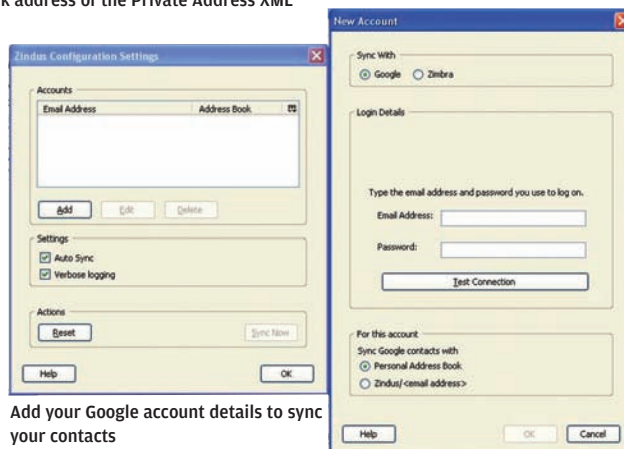
to display your reminders. The "Google Calendar Login" window will appear, where you have to enter your Google username and password. If you only have a single Google Calendar, Provider will have

extracted your username from the XML

feed you just specified. With that done, whatever updates you make to your calendar, either on GCal or on Thunderbird, will be in sync anytime, and anywhere.

#### Contacts

Synching your Gmail contacts with Thunderbird is the next step, now that your emails and calendars are in sync. The best



Add your Google account details to sync your contacts

thing about Mozilla is that it provides a great number of add-ons and extensions, so even if your software lacks something, there is likely to be an extension or add-on that will make up for it. The add-on we will be using to keep our contacts in sync is called Zindus.

Download the XPI file for Zindus from [www.mozilla.com](http://www.mozilla.com). Next go to Tools > Add-ons in Thunderbird from the menu bar. Click on Install and select the XPI file. Next you will be asked to restart Thunderbird.

After the restart, go to Tools > Zindus. Zindus creates a separate option in the Tools menu. On clicking Add, you will be asked to enter your email ID and password for either Google or Zimbra. Note that Zindus lets you sync your Zimbra contacts too. We selected Google and put in our Gmail username and

## YouTube LIVE!

Live video has finally come to YouTube via a CBS video. The irony? The video is powered by Microsoft's Silverlight

## The Cloud

Simply put, "The Cloud" is analogous to the internet, not to be confused with "cloud computing" or "grid computing"

## CONNECTIONS

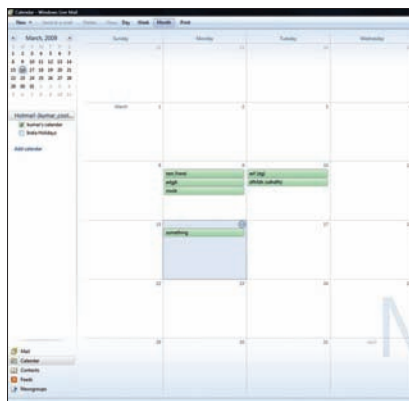
password. Next you can either add your contacts to the Personal Address book of Thunderbird or select the option for a separate Zindus address book so as to keep your contacts in a separate book.

Once that is done, click on OK and your contacts will be in synch from now on.

### Synching with Windows Live Mail

Synching your Calendar with a web service is of great importance. Windows Live Calendar is a service provided by Windows Live where you can keep track of all your appointments and events; especially useful to those who travel a lot and access their accounts through different means. Sure, there is the option of using Microsoft Outlook, but this does not give a proper synch between the Calendar and the Windows Live calendar. If you want an email client which is very similar to Outlook, then we suggest you use Windows Live Mail.

Windows Live Mail is an application created by Windows Live that lets you have your Live Calendar on your desk-



Windows Live Mail Calendar in synch

top along with your email accounts, all synched into a single program. You need to first download Windows Live Mail from <http://download.live.com/>. Once you have setup your account with Live Mail, you will notice the design similarities between this and Microsoft Outlook, but even so, it offers you a more sophisticated, but at the same time, a simple appeal.

Now you can make changes to your Windows Live Mail client through the Calendar feature, which will then be updated on Windows Live Calendar, and vice versa. Having your calendar in synch with a web service will keep you and your work in harmony.

### Synching with Plaxo

Plaxo is a great service to keep all your contacts and calendars in synch. Plaxo is a web-based application which stores your contacts and calendars on its servers so that all your data is secure in case your computer crashes. It syncs calendar data from multiple service providers such as

Google, Yahoo! and Microsoft Outlook.

To start off, first go to [www.plaxo.com](http://www.plaxo.com) and sign up with a free account. There is also a premium version of Plaxo that you can opt for. After you have registered and activated your account, you start off with the service. Now Plaxo is not only a syncing service but it doubles as a sort of social networking site where you can add friends, videos and photos. But you can ignore that part of the service and use it solely for your contacts and calendar.

Once you login, you have the following options: Plaxo, MyProfile, Connections and More. Under More you can select your address book. Here is where you can sync all your contacts. We synched Yahoo! and Gmail contacts. Now on selecting any contact you also have the option to send that contact an email, and you can also select which service you want to use — either Gmail or Yahoo! to send that particular mail.

In Outlook Express, you can synch your contacts from multiple accounts such as Yahoo!, Gmail and MSN, that you have setup on the Plaxo web site. These contacts can either be added to a common address book or can be added to separate address books as per the service. The Plaxo toolbar on Outlook Express gives you quick access to sync and also gives you options to check your online calendar on Plaxo.

To synch your calendar, you will find the Calendar option under More. Here you will have to create Sync Points where you can synch your Yahoo!, MSN and Google calendars together. A current drawback with Plaxo is that it only supports single direction calendar synch with Google. So any changes made on Plaxo will be shown on Google Calendar, but not vice-versa.

Plaxo also supports synching contacts with Windows Mobile, but this service comes only with Plaxo Premium. If you want to test drive the same, there is a 30-day trial available.

### Synching with MobileMe

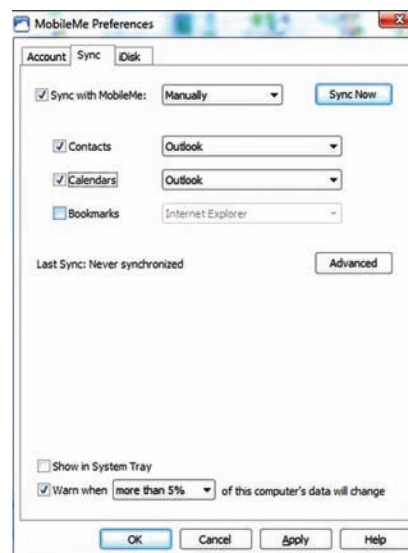
MobileMe is an online application that has been created by Apple and is used to synch contacts, calendars and bookmarks, and even emails, between the iPhone or iPod Touch and a PC or a Mac. MobileMe is a commercial application, but you can use the 30-day free trial to check it out first at [www.me.com](http://www.me.com).

Before synching your data with MobileMe, you will need to backup your existing contacts, calendars and bookmarks, as MobileMe overwrites the existing ones. To do so, first connect your device to the PC and start iTunes. Go to the Info Tab and select Outlook to synch your contacts, calendars and bookmarks to it. Click Apply and then Sync. After the synch is complete you might want to double-check to see if the data is now on the PC. To do this, just open the application you chose, Outlook in our case, and check the contents.

Once that's done, we will now need to

synch this data with MobileMe. For this, you will need to download the MobileMe Control Panel which is a small application that will keep your device in synch at all times. You can download this from: [http://support.apple.com/downloads/MobileMe\\_Control\\_Panel\\_for\\_Windows](http://support.apple.com/downloads/MobileMe_Control_Panel_for_Windows).

After downloading and installing, you can start the application which is called the Control Panel. Enter your MobileMe account details and then go to the Sync tab. Check the 'Sync with MobileMe' checkbox and then select the intervals at which you want to synch. You can choose for this process to be manual or automatic; and hourly, daily or weekly. Next select the checkboxes for contacts, calendars and bookmarks and select the application that was specified in iTunes. In our case it was Outlook. Click the Synch Now button. After doing that again, it would be wise to just check and see if your data has been moved to MobileMe. For that you can



Import your calendar and contacts

login at [www.me.com](http://www.me.com) and check just to be on the safe side.

Last, you will need to setup MobileMe on the iPhone or iPod Touch. For this just tap to Settings > Mail, Contacts, Calendars > Add Account on your Apple device. Here, select MobileMe and enter your account details and tap on Save. Next, choose the data that you want to be synched and tap on Save. Remember when you tap the Sync button, MobileMe will overwrite your existing data. To avoid this, follow the steps mentioned above.

If you have followed all the steps here, you are now living within the cloud, thanks to having your data online. With these steps you can now make changes to your calendar or add a new contact even when you are on the go and when you are back at your work laptop or on your home PC, the changes that you have made will all be in synch. ■

kumar.j@thinkdigit.com





### Hitachi Blu-ray Camcorder

Hitachi has rolled out its series 10 Blu-ray camcorder. The camcorders record video in 1920x1080 full HD. It can record in a choice of three mediums, a Blu-ray disk, an internal hard drive or a SD/SDHC card. There is a one touch dubbing feature that let's you dub over a video you have recorded. There is also an internal transcoding feature to share the videos on a DVD-disk, so those without Blu-Ray players can view the content. Available for \$1,099 (Rs. 56,801).



### HTC Touch Cruise

The HTC Touch Cruise is a touchscreen mobile device made for the traveller. The HTC Footprints feature lets you keep detailed logs of all your whereabouts, its 3.2-megapixel camera geotags all your photos, and the Navipanel navigator acts as a GPS device. The phone uses a Qualcomm MSM7200 400 MHz processor and the OS is Windows Mobile 6.0 professional. Yours for \$440 (Rs. 22,754).

### Voyager Q

The Voyager Q is a state of the art hard-drive dock. The device is a docking system for all your outdated hard drives, to be connected easily to any kind of computer. Any standard SATA I/II hard drive can be placed inside the device, which can be accessed through a flap. The Q stands for "Quad Interface" which allows data from the hard drive to be accessed using Firewire, USB, eSATA or SATA connections. This storage solution sells for \$100 (Rs. 5,167) only.





## Grado PS1000

Following up on the well-received GS-1000, is the PS-1000 from Grado. This is the new flagship model of headphones. The inner casing is made of wood, while the outer casing is made of metal, thus getting the best of both worlds. The buzz is that these are the best set of headphones that Grado has ever produced till date. Unfortunately, the headphones are only shipped in the US. If you can pull some strings, you can get your hands on these for \$1,700 (Rs. 87,951).

## TokyoFlash Keisan

You need to know your maths very well to be able to tell the time with this geeky watch. The numbers display in a column, and you calculate the time by adding up the numbers. The date is also shown in the same arrangement. The display is animated, and the casing is made from high quality lightweight aluminum. Have one of these for \$242 (Rs. 12,518).



## Bluetooth laser virtual keyboard

No, this is not another email forward or any kind of prank gadget. A laser projected keyboard is really here. The device projects a laser keyboard on any flat surface, and you can then use it like a normal keyboard. Every keystroke is even accompanied by the sound of a key-hit as in a traditional keyboard. Available from thinkgeek.com for \$150 (Rs. 7,752).







geek life

The Batarang is a version of the Japanese Shuriken, or the throwing star

# CINEMATECH

We have a closer look at the technology depicted in recent movies

## The Dark Knight

Aditya Madanapalle

### Cape

Batman's cape can be used to glide short distances. When used for short flights, the cape takes a hard-winged form. However, under normal circumstances, the cape hangs loosely from Batman's neck. Lucius Fox, CEO of Wayne Enterprises, describes the cape as being made of "memory cloth" that can take any form or structure around a specified skeleton. The fabric switches from a cape to crude wings on being exposed to a magnetic field. This concept is based on what adventure sports enthusiasts call a wingsuit. The wingsuit transforms the shape of an entire human body into a single aerofoil blade, or wing. This is accomplished by fabric stretching between the arms and the waist, and between the legs. Moreover, the wingsuit requires the use of a parachute for a safe landing. Batman doesn't use a parachute – an impossibility with available technologies. However, there are many materials such as the memory cloth used by Batman, available in the market. The mechanism mostly involves shape changing when exposed to heat. These materials can be deformed, and on heating return to their original shape.

Another category of materials take on one form under high temperatures, and another at low temperatures. One of the practical applications of such materials would be a car that can never get dented, because heat returns it to its original form. Materials that change shape based on magnetism also exist, but are not as robust as the heat-based memory materials.



### Tumbler

The tumbler was designed to be the hybrid between a sleek sports vehicle and an armoured vehicle. Since billionaire vigilantes are rare in the real world, a car such as the tumbler would possibly never exist. A man called Bob Dullam had built a fully working tumbler look-alike in his garage. However, that was just a shell without all the mechanisms inside. For one, the tumbler has a number of modes to frustrate, confuse or evade enemies. There are a whole range of weapons hidden under the hood. The front wheels have no axle, and are powered by independent engines. This means that the car can turn very sharp angles at very high speeds. Moreover, the batpod is modelled as a part of the tumbler. While there have been vehicles that could split into two and then rejoin, these have remained concept cars. What allows the tumbler such incredible speeds despite being heavily armoured is the aerodynamics. Similar to aeroplane wings that provide lift, the tumbler has smaller wings that provide drag. Air speed below the car is greater than above the car, causing a lowering of pressure which makes the tumbler stick to the ground. The same principle was used by the design teams of some F1 cars, but was later banned and has not been revived in the 2009 rules. The tumbler is powered by a jet engine. Some street cars with jet engines have been built, but the mileage made the idea very unpopular. Ignoring the urban legends, there have been some modders who have added an additional street-legal jet engine to their cars.



### Suit

Batman's suit is made up of numerous small parts. This makes sure that Batman can move around smoothly. Kevlar is used in the suits. In fact, the suit itself is made up of biweave Kevlar, while some parts on the chest, and the limbs have extra armour. These parts are "hardened Kevlar plates over titanium-dipped tri-weave fibres". Kevlar, a fabric by DuPont, is used by security agencies and armies around the world. It is a kind of synthetic fabric that has a number of useful properties and is used from tyres for racing cars to the cones of headphones. Kevlar is heat resistant, and has a high tensile strength. When a bullet hits Batman's suit, even at close range, the fabric expands and changes shape to accommodate the bullet. The more the number of "weaves" in a Kevlar piece, the better is its resistance to bullets. Even Batman's utility belt is also made of Kevlar, with several gadgets including a small motor to power a grappling mechanism that allows Batman to ascend on a kevlar wire. Though there is no existing technology to pack so much power into such a small motor, there are a few devices in existence that allow people to grapple over wires for search-and-rescue operations. The Atlas rope ascender devised by an MIT student has a similar mechanism.





Did you notice Batman's hesitation to use guns? That is because a gunman killed Wayne's parents.

# Movies in 2009

A roundup of the best movies to look out for this year

## Batpod

The batpod detaches from the tumbler, and has a minimal structure for a bike. There are two engines inside the hubs of the wheels. The concept of the engine enclosed within the wheel has been around for a long time, but involves a complicated mechanism in real life that has to be figured out. The engines inside both the wheels will have to have microprocessors, and some sort of wireless or wired communication to be synchronised. An alternative would be to enclose the engine just in the back wheel of the motorcycle. The batpod has no seat, and Batman leans forward, almost lying with his stomach on the tank, with the back wheel between his legs. The Dodge Tomahawk requires a similar sitting position for riding, but is as yet only a concept. Moreover, the engine is located below the tank and not within the wheels. Because of the size of the tyres, and the top speed of the batpod, the entire upper body is used to steer the bike instead of the arms. Additionally, the light frame of the vehicle allows Batman to stop suddenly, and even go vertical if the situation calls for it. There have been a few concept cars that travel vertically on two wheels in city traffic, and horizontally on freeways, but these have not hit the streets yet.



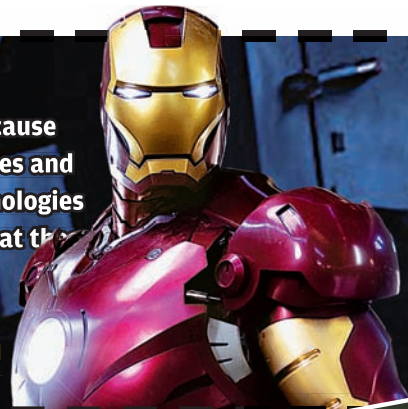
## Nokia 5800 XpressMusic (sans SONAR)

The most unscientific of all the tech depicted in *The Dark Knight*, was the conversion of mobile phones into SONAR devices. SONAR works by sending ultrasonic pulses that bounce off objects and return to the point of origin at different times and different incident angles. These returned pulses are run through an algorithm that maps out the surroundings spatially. The 369-MHz ARM 11 processor on a Nokia 5800 might be impressive, but it simply could not process the amount of ultrasonic data that would be required, or display the input from another device, even if the connectivity issues were resolved. The mobile phone microphone or speakers just don't have the fidelity required to accurately map ultrasonic pulses. Converting all the mobile phones in a city into SONAR is even more problematic. Existing computer processing technologies simply cannot handle the workload, even if all the phones were remotely hacked to keep sending back data in high compression to reduce the bandwidth. However, the device itself is on the streets, and you can check it out in our Bazaar section.



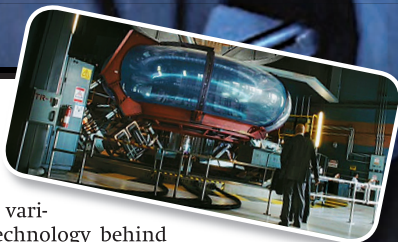
**Batman and Iron Man are two remarkable superheroes - mostly because they have no superpowers. Both are billionaires with large companies and a lot of money at their disposal - which is used for developing technologies to fight crime - a substitute for superpowers. We take a closer look at the fictional technologies, unearthing the real world parallels.**

## Iron Man



## Arc Reactor

The Arc Reactor is a device that powers the factory of Stark Industries, and the various Iron Man suits. The technology behind the device is not explicitly mentioned in the movie, but a specification of 3 gigajoules per second is given - which is 3 GW of power. The Arc Reactor used for the second Iron Man suit had a capacity four times the original, which is more than any existing nuclear fission reactor can produce. Excluding exotic explanations such as anti-matter and space drive, the technology behind the Arc Reactor is almost certainly some form of nuclear fusion, which is the same kind of energy that drives the stars. A hypothetical device very similar to the arc reactor is the Tokamak, a magnetised torus that holds together highly energised plasma in isolation for energy generation. The Joint European Torus (JET) in the UK is the world's largest fusion reactor, and conducts experiments that have more massive implications for mankind than the LHC. The JET has produced short but powerful bursts of nuclear fusion energy. The reactor has the same torus shape as the Tokamak and the Arc Reactor installed at Stark Industries.



## Iron Man Suit

The Iron Man suit is not just an armour with jets on the shoes. An underplayed aspect of the Iron Man suit is that it is an exoskeleton powered for augmenting tasks. Cyberdine, a Japanese company is already offering powered exoskeletons for hire. Called the Robot Suit HAL (Hybrid Assistive Limb), the suit gives the wearer superhuman strength. You can climb steep surfaces and lift heavy loads. Berkeley Bionics is developing ExoHiker, an attachment for legs that gathers and stores power from the movement of the legs. A company called Sarcos has developed what is arguably the best exoskeleton in existence. The XOS can lift extremely heavy weights, but looks a lot less bulkier than the competition. MIT's biomechanics group, and Honda are also believed to be developing powered exoskeletons. Apart from military use, powered exoskeletons can also be used to replace wheelchairs for the handicapped.







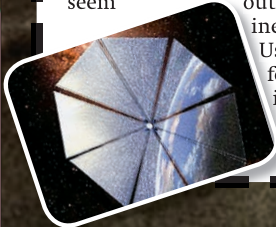
A missile like the Jericho missile would be too impractical for real-world military use.

## Personal Jets and Repulsor technology

Iron Man's boots have jets that enable him to fly. There is one glaring omission here – where does the fuel come from? Any kind of jet requires fuel, and Iron Man is not bundled with a fuel tank for transatlantic travel. There are jetpacks that exist (though none that are shoe-based), and some of them are even available to laymen. The problem here is that these jetpacks can carry only enough fuel for very short flights – usually less than a minute. Jetpacks are also used by astronauts in space, but the fuel requirements of zero gravity is far less than the fuel requirements in the atmosphere. Iron Man's palms use repulsor technology to allow Iron Man to balance on his jets and navigate while in flight. This is almost certainly some kind of particle generator with a high density of small particles. From the way it shines, it is almost certainly light-based. While this may seem



outrageous, it is actually more genuine scientific concept than the jets. Using a high concentration of light for movement is not unheard of, and is the technology behind solar sails, a proposed method of low-fuel long distance space travel.



## Jarvis

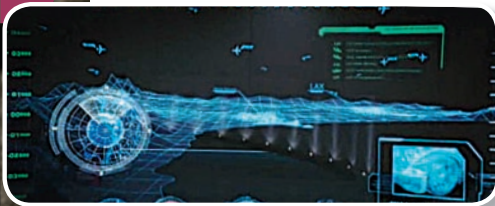
Jarvis is the AI in Tony Stark's house and controls all the robots, interfaces and handles a number of operations. The capabilities of Jarvis are vast. He can hack into commercial and government air bases, and calculate the trajectories of all the flying objects in the nearby skies (although, Jarvis does request some time to do this). Jarvis can also translate languages on the fly, interpret actions or gestures, process complex instructions, and practically read minds of the humans around it. There are a number of independent efforts in developing AI. In fact, a fair penetration of the implementations, from air bags in cars to temperature controllers in refrigerators. Most of the AI however, are very complex algorithms based on continuous or even real-time feedback. However, no one has come close to the complex AI depicted in Iron Man. The kind of processing power involved simply does not exist, nor any real framework for the programming. If you are interested, you can head over to [www.personalityforge.com](http://www.personalityforge.com) and create your own AI to understand the processes involved.



## Interfaces

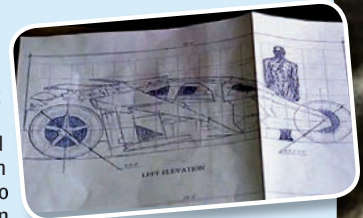
The 3D interface used by Tony Stark to design his Iron Man suit was a step up from the tactile interface shown in Minority Report. While hologram projection may not exist, a tactile 3D interface on a 2D touchscreen has been around for some time now. CityWall is one such multi-touch interface, with videos all over the internet. In a particular scene, Stark drags a window from one monitor onto another using gestures. This is similar to dragging windows between work spaces on some existing operating systems. Gesture-based computing is not new

at all, and the US military is at the forefront of research. The many semi-transparent touch displays may not be far away either – MERL and Microsoft Research are working on LucidTouch technology that allows navigation of a device through its back instead of the front, which makes holding the device easier. The HUD (heads up display) in Iron Man's helmet has been around for a long time, particularly used by fighter pilots who can keep their eyes on the skies instead of the instrument panel on the planes for vital information. There are a whole bunch of commercial motorcycle helmets with an HUD you can purchase, including the Vizalert, which shows any speedguns in the peripheral vision.



## Get Real

In real life, which of the two heroes are more likely to exist? Batman's tumbler is actually a very impractical vehicle, mostly because it would be flimsier than it is shown to be. Iron Man's armour, also simply cannot exist because “repulsor” is not even a word, and the fuel for the jets would be impractical. Batman's kevlar suit, while being able to stop bullets, cannot stop him from being injured after long falls, which happens at least twice in the movie. Iron Man's ammunition hidden away in his armour is also an impractical thing. Tiny little missiles blowing up tanks? No way. In fact, none of the technology depicted in the movie would have been practical in real life... so to find an answer, we have to explore the roots of the superheroes; stripping essentials. Batman is just a man in a cape, with a love for gadgets... smoke bombs, some rope, and a jet powered car. Iron Man however, had jets on his boots and an iron exoskeleton forever. Tony Stark is a borderline renegade genius, but Batman was a man on a mission, who trained his body for everything he does. This round clearly goes to Batman.





**25,000 metric tons**

The amount of greenhouse gases produced in a year by about 4,500 passenger vehicles

**DIGITAL LIFE**



# A critical look at Green-Tech

**Edward Henning**

One thing that is impossible to dispute is that the western anti-carbon dioxide (CO<sub>2</sub>) obsession, based on an assumption that a human driven (anthropogenic) increase in atmospheric CO<sub>2</sub> is dangerously affecting the climate, deflects attention away from many other environmental issues. There are many such important issues with which we need to deal, but just looking at pollution for now, there is nitrogen dioxide, sulphur dioxide, benzene (carcinogenic, apparently), lead, mercury, toxic substances released from the dumping of electronic waste, biochemical and pharmaceutical waste — those are just the first few that come to mind; the complete list must be huge.

One hears much less nowadays of people talking of rescuing the rain forests, saving the whales or other issues; in fact, proper care for the environment seems to have been swept away by the mantra: "Save the planet; reduce your carbon footprint". The view put forward by the likes of Al Gore and the IPCC (Intergovernmental Panel on Climate Change) is that anthropogenic carbon dioxide is causing the planet to warm up dangerously. If this view is wrong, then not only are populations being forced to spend ridiculous amounts of money on trying to reduce carbon emissions,

but great damage is actually being done to the environment by deflecting attention away from genuine environmental issues. (Who benefits from this, one might ask?)

Carbon dioxide is the very basis of the food chain of life on this planet. Plants love it. One scientist (Dr. Will Happer) recently reported to the US Congress that the Earth was in a "CO<sub>2</sub> famine now." Not a popular view among politicians that, but since atmospheric levels of CO<sub>2</sub> started to increase towards the beginning of the last century, plant growth has increased by around 30 per cent, on average. In particular, crops have benefited. Not bad on

this hungry planet. Also, laboratory tests show that increased levels of carbon dioxide allow plants to use less water, and so semi-arid areas have particularly benefited from this, and would continue to do so if levels increased further. In fact, laboratory tests suggest that for life, for the biosphere, the optimum concentration of CO<sub>2</sub> in our atmosphere would be about three times what it is at present. It has been up to 10 times present levels. And yet there are many green activists who want us to reduce CO<sub>2</sub> levels dramatically. They seem to have forgotten just from where the use of the word green came! So, why?

**Many hardware companies are touting "green" benefits for their products, and when questioned this seems usually to mean reduced energy needs and an assumed benefit regarding climate change. In this article we take a critical look at the science involved, and suggest possibly a better way of helping the environment.**

Real pollution: e-waste piling up in Guiyu, China.  
©2006 Basel Action Network (BAN)



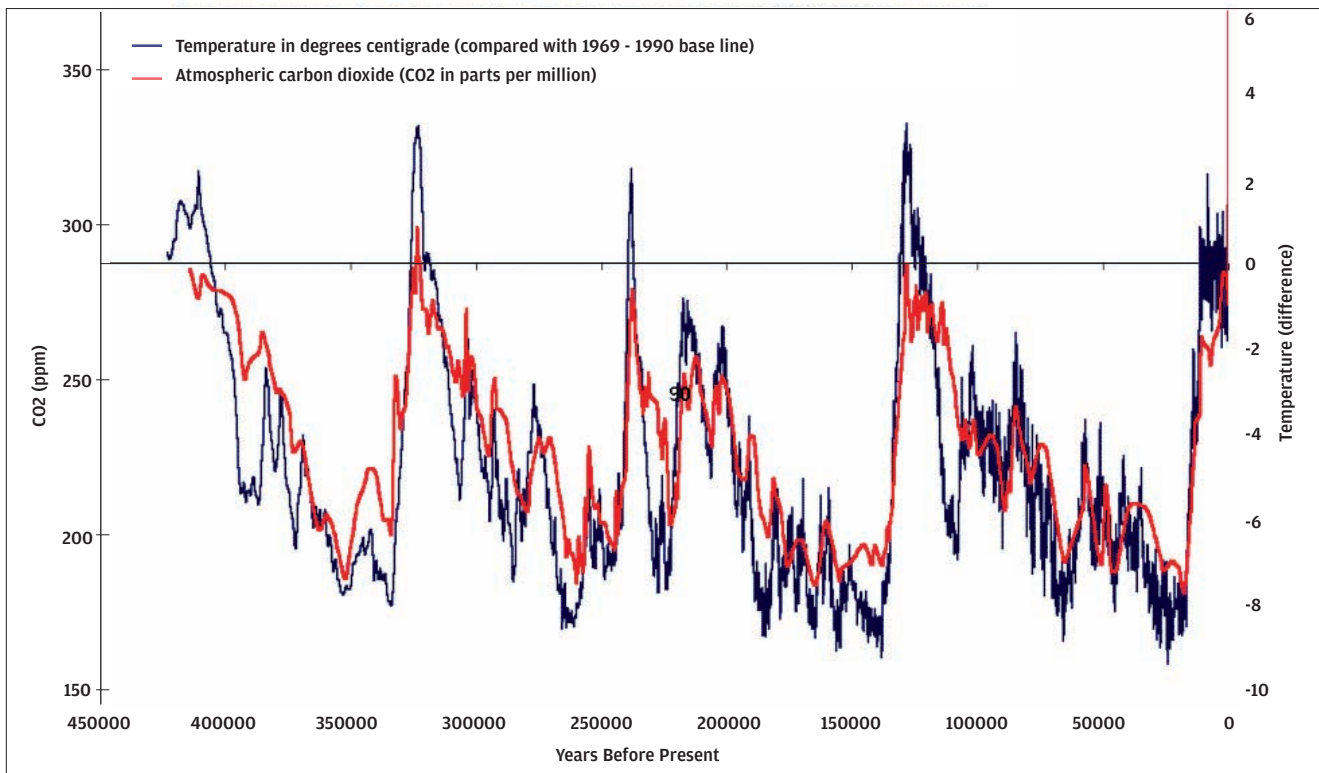




## feature

## 10% of rated

Roughly, the power consumption of your electronic devices on standby



Graph of the Antarctic ice-core data, used so dramatically and misleadingly in Al Gore's film, *An Inconvenient Truth*. If you could zoom in closely, you would see that CO<sub>2</sub> changes follow changes in temperature, not the other way around, as Gore makes out. Chart kindly made available by Dr. Tom Rees

Many green activists want to see a dramatic reduction in human populations; a few even want to see humans disappear altogether. These are not all minor and inconsequential extremists. The President of the World Wildlife Fund has stated: "If I were reincarnated, I would wish to be returned to Earth as a killer virus to lower human population levels." The more moderate ones want us to return to a subsistence style level, rather like the pre-industrial world. For example, Pentti Linkola, the Finnish "ecophilosopher": "Everything we have developed over the last 100 years should be destroyed." At least these ones are honest in their intentions. Others seem to have motives of political and financial control at heart.

Take Al Gore as an example. There is no real physical evidence that CO<sub>2</sub> levels are driving temperatures upwards, and yet that is the impression he gives in his film, *"An Inconvenient Truth"*. If real evidence actually existed, he would not have to make it up, as he does. For many, the most compelling piece of "evidence" that he gives — the only one, really — is the graph taken from Antarctic ice-core drillings that shows CO<sub>2</sub> and temperature closely in step. He states in the film: "When there is more carbon dioxide, the temperature gets warmer, because it traps more heat from the sun inside."

The graph shows data across several hundred thousand years, and so you cannot see much detail. What Gore misses out is that if you look more closely at this and many other ice-core data sets, you find that CO<sub>2</sub> starts to rise or fall several hundred years after the temperature starts to rise or fall. This simple fact alone destroys Gore's position, although many activists have tried to come up with logic why it does not. The mechanism is simple, and understandable by a high-school science student: as temperatures rise, the water in the oceans is able to hold less CO<sub>2</sub> in solution, and so the gas is emitted into the atmosphere. As temperatures fall, the reverse occurs. The numbers also match up reasonably well from calculations that have been done on the basis of the ice-core data.

It is rather difficult to read the scientific literature on this subject without being aware of the lag between temperature

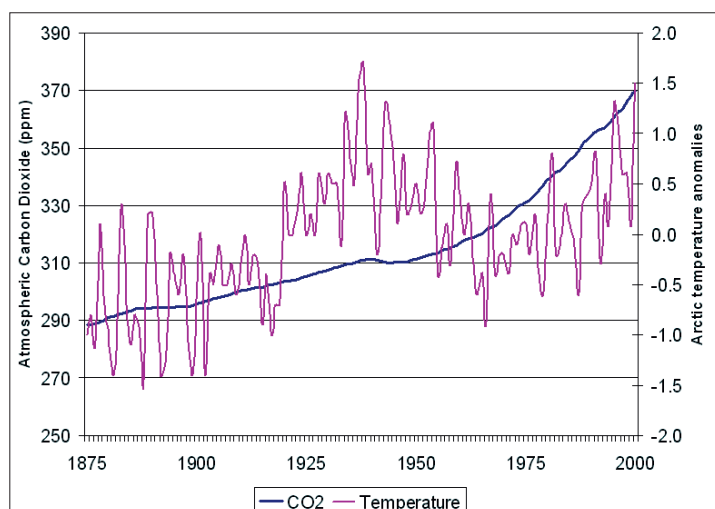
and CO<sub>2</sub>; it is very well known. It is therefore highly unlikely that Al Gore was unaware of this fact. It could be that he was very badly advised, but if not, the logic suggests that as it did not fit his agenda, he did not include it — perhaps this lag is the really inconvenient truth.

What agenda might that be? Gore is involved with carbon trading in a big way, with his company "Generation Investment Management". The more people he is able to scare with his propaganda film, the more they are likely to buy carbon offsets, and bring revenues to his and other similar companies. In recent months, it has been reported that the last few slides of presentations that he has given have promoted investment opportunities in this whole carbon-trading scam. Incidentally, there are many other "errors" in Gore's film — 35 according to Christopher Monckton — but let's leave him there.

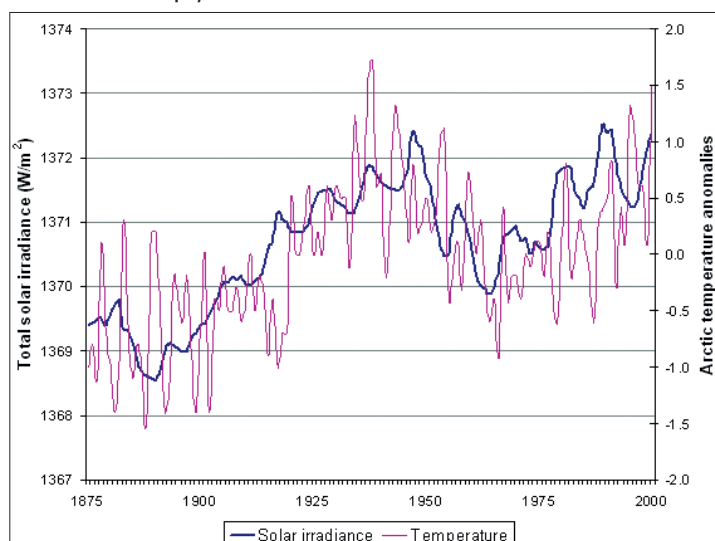
One often hears that there is a world-wide scientific consensus in favour of the CO<sub>2</sub> theory. Tellingly, the word consensus is a political term, usually unheard of in scientific circles. Anyway, this is simply not true — there are many climate and other scientists that oppose this view, apparently many even within the IPCC itself. So what do these other scientists say is causing the changes to our climate? Mostly, the Sun, the single source of the heat in our atmosphere (there is a tiny fraction from geological activity). The theory is complex, but in its briefest form, galactic cosmic rays entering the atmosphere seed the formation of clouds at lower levels in the atmosphere that then reflect sunlight and tend to cool the Earth. When the Sun is less active, it not only provides slightly less radiant heat to the Earth, but also its solar wind and magnetic field are weaker, allowing more cosmic rays through to our lower atmosphere. When the Sun is more active, the reverse is the case, and this complex mechanism involving the solar wind, magnetic field and cosmic rays effectively amplifies the changes in the radiant output of the Sun; it amplifies the effect on temperatures here. This solar theory also does a good job of explaining the ice-ages of the last half billion years, and even the earlier snowball-Earth episodes.

# Composting toilet

Turns human waste to compost via aerobic biodegradation



In the graph above, the weak correlation between carbon dioxide and temperature changes is clear. Compare with the graph below, in which there is a much closer correlation between solar irradiance and temperatures. Data provided by Dr Willie Soon, Harvard-Smithsonian Center for Astrophysics.



Not only does this theory explain much of our climate history — the climate is always changing, as many seem to forget — but it is also receiving some good experimental support. The main mechanism of cosmic rays causing ionisation and the formation of condensation nuclei suitable for cloud formation was demonstrated by Henrik Svensmark a few years ago; this is now receiving major attention in the CLOUD experiment that is under way at CERN — the famous European Centre for Nuclear Research — by a team of “leading scientists from 18 institutes in 9 countries”.

Interestingly, during the last century, the correlation between CO<sub>2</sub> and temperature has been low (about 0.2), whereas the correlation between solar activity and temperature has been high (about 0.8). One has to wonder why this CO<sub>2</sub> theory has survived at all! A huge propaganda machine is the main answer.

The IPCC is not immune to perverting the truth. In its report in 1996 the scientific conclusions, after they had been signed off by the scientists themselves, were changed to give the impression that there was clear evidence for anthropogenic CO<sub>2</sub> affecting climate, when the original wording by the scientists drew no such conclusion, and in some cases directly stated as such. These changes were made by one Ben Santer — he later admitted it

— apparently under the direction of the White House. No prizes for guessing who was Vice-President at the time. This deliberate distortion of the findings of the scientists was referred to by the Wall Street Journal in the headline: “Major Deception on Global Warming”.

Later, in its third assessment report in 2001, the IPCC displayed a graph showing for the last thousand years both temperatures and CO<sub>2</sub> levels basically flat, and then shooting up in the last century. Due to its shape this has been labelled the “hockey-stick” graph, and is said to have been the clinching factor that made many countries sign up to the Kyoto treaty. This graph flatly contradicted the existence of natural climate changes — specifically the Medieval Warm Period and the Little Ice Age — which are attested by hundreds of scientific papers around the world! It has been shown to have been based on very dodgy statistics, mathematics and weak data; it has been thoroughly taken apart by many experts, and one even showed that the methods would produce a hockey-stick shape even if fed random data! This is often referred to as one of the most discredited pieces of scientific “evidence”. Are we seriously to believe that the IPCC — a political organisation, don’t forget — did not know how deeply misleading this graph was, even directly contradicting data previously published by the IPCC itself? This is political perversion of science, so let’s get back to the scientific evidence.

Science is supposed to be based on testable propositions, and yet the main “evidence” cited by the IPCC is projections based on its computer models of the climate, models that do not, for example, properly model cloud behaviour and effects, nor solar irradiance, and that have CO<sub>2</sub> as a main climate driver built in to them in the first place. No surprise they predict future higher temperatures. If you look at the IPCC predictions for the last few years, these suggested a steady upward trend in global temperatures. Instead, for the last ten years temperatures have been essentially flat, and falling for the last two or three years (interestingly, as solar activity has slumped to very low levels). The predictions have simply not come true. Could it just be that the theory is wrong?

There are other predictions made by the CO<sub>2</sub> theory, such as that the lower atmosphere should have been warming more rapidly than the surface of the planet. It has not, and actually the reverse has been the case, as is predicted by the solar theory. Also, the CO<sub>2</sub> theory predicts that as the main body of the planet warms, so should Antarctica, and as the planet cools, so should Antarctica. However, again the reverse has been the case, and that as the rest of the planet has been warming during the last 30 years, so most of Antarctica has been cooling slightly (you may read much of warming in Antarctica, but this is in the Antarctic Peninsula, about 3 per cent of the total). This cooling is again predicted by the solar radiation theory. (The Antarctic ice is even more reflective than the cloud tops, and so extra cloud cover tends to warm the Antarctic instead of cooling it, as with the rest of the planet.) On these few pieces of directly observable physical evidence, the solar theory wins easily.

No wonder the IPCC does not try to stand on hard scientific evidence; instead it talks of having observed the “fingerprint” of human activity in climate change. Imagine if Newton had written of having discovered the fingerprint of gravity in the motion of the planets, rather than presenting sound theory and solid evidence!

On the other hand, many solar scientists have been predicting for several years that temperatures would start falling during the last couple of years, exactly as has happened. A prediction that has come true. And yet the mainstream media still bangs on about the terrors of global warming. The real terror lies with cold conditions, as history readily shows, and some solar scientists are predicting a major cold spell, perhaps for two or three decades. Some even think that we are beginning the slide into the next glacial period. Mankind would actually be much better off with global warming. Anybody interested in this should look at the history and the devastating effect on Europe and elsewhere of the Little Ice Age (LIA). For a start, hundreds of



## feature

## Mac mini

Is touted as the world's most energy-efficient desktop computer

thousands of people died from the terrible storms that hit northern Europe as the LIA started — and that was just the beginning. Life likes it warm; consider how much life there is in the tropics, and then look at the poles! So, let's leave this issue aside and now look at the real environmental impacts of modern technology such as PCs and mobile phones.

### The throw-away society

For thousands of years, nearly everything we used was made of plant or animal material, or from clay. After these were discarded, the biological materials would always decompose over time (they are bio-degradable), and pottery would crumble back to dust. It mattered not that these things were simply chucked away without a second thought. But we have gradually been developing different materials, and this has accelerated dramatically over the last few decades. However, we have continued to behave as though we could still simply chuck things away without thinking. Many products also now have shorter life-cycles than their equivalents a few decades ago, and so the rate at which many things are discarded has tended to increase. The result is growing mountains of rubbish, and a decreasing amount of it is biodegradable.

What to do with this? Apart from burning there seems to be only one option that humans are following, that of land-fill. If ever there was a case of "sweeping a problem under the carpet", this must be it. The problem is just left for others to solve at some distant point in the future. Land-fill is simply dumping, underground instead of over-ground. This would not be a problem if the waste was biodegradable, but increasingly there are toxic materials in the waste, particularly from computer systems, mobile phones, televisions, batteries and so forth — electronic waste, known as e-waste.

The correct alternative is to recycle the materials in these products, but it is not easy. Recycling collection points in the west mainly have collection cans for paper, clear glass and coloured glass, but not much else. The situation is improving, but the main focus is on these most benign of materials that we throw away. They are worth recycling, but a more important target should be the toxins in the e-waste, and this is the fastest growing portion of normal consumer waste materials world-wide.

Not only would the recycling of e-waste prevent toxic materials from entering the environment, many of the materials are relatively rare and so their re-use would necessitate less mining and other forms of original production.

Unfortunately, much of the dumping of e-waste comes from so-called recycling schemes. A report by the Basel Action Network (BAN) a few years ago highlighted a so-called recycling centre in the Guiyu region of China. Very little actual recycling went on, plumes of acrid smoke wafted into the air, grey-black sludge was dumped alongside the local river. Electronic waste simply piled up, and soil samples registered toxins at rates hundreds of times higher than would cause alerts in the west.

The author of the original report returned a few months ago and stated that "It has gotten far, far worse." This is just one of many sites where the soil, water and air are being contaminated by e-waste, that is supposedly being recycled, and yet is



Wires from computer systems being sorted during the day for later burning at night. Note the family homes right next to the site. ©2006 Basel Action Network (BAN)

effectively simply being dumped. Another case of a problem being swept under the carpet and left for others to sort out. Incidentally, all the photos of e-waste in this article are from the Guiyu site investigated by BAN. See BAN's website for further details of other e-waste sites.

The original report mentioned children playing "amid heaps of ash from burned electronic waste", also people exposed to a carbon black from computer printer cartridges (thought to cause cancer), release of toxic lead and barium from cathode

ray tubes, burning of plastics producing dioxins, heating of printed circuit boards to melt solder, producing inhaled toxic fumes. This lists just the most obvious toxins involved — there are in fact many, many more, and their effect on the environment is disastrous, with people having to carry drinking water in from many miles away, and the air is also poisonous. These toxins can cause brain damage, respiratory and skin problems, kidney disease, cancers, and mutations — and that is just to humans; they also damage plant and animal life.

This is not just happening in a few isolated and distant villages in China. BAN found that even in "New Delhi, children are routinely employed to burn circuit boards — again producing toxic fumes that they cannot help but inhale." And then what happens to the left-over waste, after the solder and perhaps a little gold has been salvaged?

The description in the last few paragraphs refers mainly to electronic waste that people — usually in the west — assume has been sent for proper recycling. What happens to the majority of electronic waste that is not sent for recycling at all? Much of this is simply dumped into landfills, gradually seeping its toxins into the local ground and water table.

Clearly, there are four things that are urgently needed: 1) for proper schemes to be set up world-wide to ensure that every single item of electronic equipment is recycled; 2) for there to be proper monitoring of the recycling to ensure that it is done correctly and is not just a cover for dumping; 3) more efforts need to be made in developing less harmful materials for the manufacture of electronic goods so that they pose less of a threat when no longer needed; and, 4) consumers need to be aware of the dangers of e-waste and take very much greater care when purchasing and disposing of electronic items. Unfortunately, not many companies seem to take this seriously, and when questioned pass the responsibility off by saying that it is the job of government, and so on. But they are not all like this. There is the interesting example set by Nokia.

### Nokia and recycling

Nokia started a campaign in India at the beginning of this year to encourage customers in four major cities to recycle their phones and chargers, even if they are from a different brand. Nokia provides collection centres for this purpose, and will roll this out across the whole of India in time. Nokia does not do any recycling itself, but "works with qualified recyclers around the world" — the intention being to ensure that the recycling is done properly and with all the correct benefits. The company also promises that it will work on "managing substances in



## Chevrolet volt

Unlike other hybrids, the actual propulsion of the Volt is accomplished by an electric motor

our products so that they do not pose any environmental risks at the end of their life".

Some facts and figures from Nokia's campaign: the company currently has around 5,000 recycle collection points worldwide (including 1,300 recycling bins in India) and works with 80 selected recycling plants throughout the world.

This campaign was run in four major metros, and in the first six weeks Nokia collected over 60,000 individual items, weighing just over three tons. These included around 10,000 mobile phones, 30,000 chargers and 12,000 batteries, together with other items such as headsets.

So, how does this all work in practice? We spoke to Pranshu Singhal, Nokia's Environmental Manager, based in Gurgaon. Surprisingly, he told us that Nokia does not release publicly the names of the recycling companies that it uses. However, he did give the name of the main one for India to us, and we will follow this up later and report on the company, and any others that are relevant. This company is not based in India yet, but in South-East Asia, and expects to open a plant in India in a couple of month's time. In the meantime, the e-waste is exported with the proper permits from both countries.

Nokia does its own auditing of plants such as this, and inspects them on average every six months to ensure proper practices are in place. The contracts with these companies are dependent on these inspections having positive results.

The number of materials that are recovered is large, but the main ones are plastics and metals. The plastics are converted into epoxy pellets for use in industrial processes. Most metals are recovered by electrolysis and are therefore recovered in a very pure state. They can then be reused either to make more mobile phones or any other products. Electrolysis might seem an energy-expensive process, but this actually saves energy when compared to mining and smelting.

At the other end of the whole process, Nokia told us of the substances that are being phased out of production processes for health and safety reasons. These include PVC, lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB), polybrominated diphenyl ethers (PBDE) and eight different phthalates. Nokia was not prepared to tell us how it was replacing these various substances.

For example phthalates are used to make plastics more flexible — less brittle and therefore less likely to break. If Nokia is no longer using these, then other substances are being

used instead. However, just which substances, is considered confidential, and we simply have to take Nokia's word for it that the replacements are safer or easier to recycle.

Clearly, this does not all come at no cost. The service is free to users, but obviously the cost is built into Nokia's accounting when it decides sale prices for its phones. It remains to be seen how long it can sustain the offer to recycle regardless of brand and if other mobile phone companies come round to offering a similar service.

### Conclusions

Nokia is not the only company that has started either to introduce recycling schemes or to reduce the toxic materials used in its production processes. Among those relevant to our industry are Sony Ericsson, LG Electronics, Samsung, Sony, HP and Dell. No doubt there are others as well, and we do not imply any criticism by failing to be aware of their practices and reporting on them here. However, the situation in the IT industry is a very, very long way from where it should be, and the whole industry needs to be challenged to step up to this problem and confront it properly.

We have focused here on Nokia because of the very recent nature of its recycling campaign and because the company certainly seems to have a comprehensive approach to the problem of e-waste — the most comprehensive that we have come across. But in fairness, it is much easier for a mobile phone company to do this than a PC, or PC component vendor. The mobile phone is a single discrete unit, together with its battery and charger, purchased from one vendor and therefore returnable to one vendor.

But what of a graphics card or hard drive? The manufacturer of such a product has no control over the machine in which it is sold — it could go into a standard PC such as a Dell, a machine built locally by some dealer, or inserted by a PC owner who builds his own. Whose responsibility is it to see that the hard drive or graphics card properly gets recycled at the end of its days? Add printers, scanners and mice into the mix of a standard desktop setup, and you would probably be tempted just to throw it all in the local tip. But this is not the way!

It is up to us as users and consumers of these devices to pressure the industry. Once it becomes clear that we take the issues of e-waste and recycling seriously, then the industry will be bound to follow. If a hardware vendor is offering green-tech or supposedly environmentally friendly devices, then let's hear a properly constructed strategy for recycling and the avoidance of yet more e-waste piling up. ■

edward.henning@thinkdigit.com

## DIGITAL LIFE



Your eyeball view.  
Our technology new.

## Sketch your imagination

RIGHT HERE.  
RIGHT NOW.



Design Tablet PF1209

High 2000 lpi resolution for pin point accuracy •

1024 Pressure levels •

Capture any screen with free hand notes using Annotate all •

Most major drawing, painting, CAD, Office XP & Office 2003 programs supported



### DIGITAL PEN TABLET

Write. Draw. Design.

Also available in :

4" x 3" | 5.5" x 4" | 8" x 6"

Over 10 million iBall products sold | [www.iBall.co.in](http://www.iBall.co.in)

Best IT World (India) Pvt. Ltd. - Email : [sales@iball.co.in](mailto:sales@iball.co.in)  
Mumbai - 022 - 6774 5100, Ahmedabad - 079-2743 6373,  
Bangalore - 080- 41249609, Bhubaneswar - 0674-3297372,  
Chandigarh - 0172-5009548, Cochin - 0484-2324 706,  
Chennai - 044-28591691, Dehradun - 0135-3244481,  
Guwahati - 0361-2454308 / 09435041133, Goa - 9764211099,  
Indore - 0731-404 2509, Jaipur - 0141-3295690, Kolkata -  
9830113980, New Delhi - 011-4161 8650, Lucknow -  
0522-3246428, Nagpur - 0712-3253811, Nashik -  
09822026887, Pune - 020- 66024687, Patna - 0612- 3260947,  
Raipur - 0771-3293674, Secunderabad - 040-2789 4847



# THE END OF THE WORLD AS WE KNOW IT?

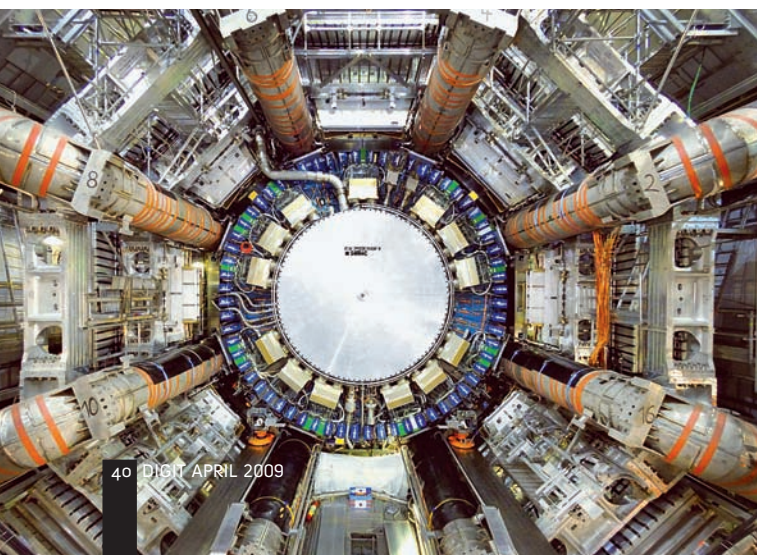
Edward Henning

In May 1990, Tim Berners-Lee invented the system we now call the World Wide Web, in order to manage huge amounts of data across a large organisation. In his, and the world's, first web page ([www.w3.org/History/1989/proposal-msw.html](http://www.w3.org/History/1989/proposal-msw.html)), he gave the motive for this project: "Many of the discussions of the future at CERN and the LHC era end with the question - 'Yes, but how will we ever keep track of such a large project?'" The LHC (Large Hadron Collider) era is now just about to start. After an unfortunate accidental damage last year, CERN is now expecting the LHC to produce its first beams at the end of September this year, and collisions late in the following month.

For any of you that have been on another planet for the last decade, the LHC is in Switzerland, and is the world's largest and most powerful particle accelerator. Of the particles concerned, hadrons, the best known are protons and neutrons, although the LHC will be able to accelerate much larger particles — lead nuclei are mentioned, for example. The purpose of the collider is to accelerate particles in two large near-circles, in opposite directions, very close to the speed of light, and collide them head on. These interactions produce other particles which are then detected and investigated.

The greater the energy of the collisions, the more varied and exotic are the types of particles that the accelerators produce, and the LHC is expected to reach the kind of energies that existed shortly after the Big Bang that is thought to have created the universe. You may have read that the LHC will create the conditions that existed shortly after the Big Bang. This is slightly misleading, because what is meant is that the energies and

The ATLAS detector at the LHC — a possible location for the creation of miniature black holes



Arguably one of the most exciting experiments in the history of science is about to resume, with the operation of the Large Hadron Collider in Switzerland. And yet some people are concerned that it could bring about the end of the world. We look at the main issues involved.

densities involved will be similar to those thought to have existed at that time. With the LHC, physicists are hoping to detect the existence of the illusive Higgs boson, thought to be responsible for the mass of all particles; magnetic monopoles are also a possibility; also, strangelets, and many others. This undeniably represents a very important set of experiments that could either support or refute our current theories of advanced physics. But among all this, the creation of one type of particle has particularly caught people's attention: a miniature black hole (BH).

There has been much discussion about both whether the LHC will produce miniature BHs at all, and the effects of these if it does. The worst scenario that has been described, goes like this. Because the particles that produce the BH are travelling in opposite directions, with very similar energies, when the BH is produced it has relatively low kinetic energy, and hence low velocity, and is caught by the Earth's gravitational field.

Very slowly at first — with this process perhaps taking years — the BH hits occasional particles and it absorbs them, each time gaining a little more mass and becoming a little larger. As this happens, it gradually circles around the centre of the Earth, getting nearer as it becomes more massive and slows down. Eventually the BH starts to absorb whole atoms, and its size increases more rapidly, until it is almost always in touch with molecules of the Earth's core, and absorbs them all.

A point is reached when the BH has absorbed so much matter, that it has created a small vacuum at the centre of the Earth, and matter continually falls into it. As this happens, the Earth's mantle contracts a little, causing the crust — the continents and ocean floor — to be compressed laterally, very slightly. This causes at first minor earthquakes; not only in places where earthquakes are common, but also in places where you would least expect them. This would almost certainly be the first sign that something had gone wrong.

After this point, the movement downwards of the core and mantle would produce enormous heat in the interior of the Earth, causing major volcanic eruptions, and ever more powerful earthquakes. This geologic activity would heat the oceans, eventually boiling them away, and the surface of the continents would be overrun with lava flows. The whole process would accelerate very quickly, with the whole Earth being sucked into the BH, perhaps within hours of the first major volcanic eruptions. All that would be left would be the Moon and all our artificial satellites orbiting a point in space where the centre of the Earth used to be. So, just how likely is this?

The first point is clear — that nobody knows whether the LHC would be able to produce any BHs at all. If certain aspects of superstring theory are correct, then it might well do so. Much more important is the question of any dangers posed by such holes.

Naturally, the scientists at CERN have been keen to explain how safe is the LHC, but they have done a very bad job in PR terms. CERN reported that a risk assessment had been performed and concluded that the LHC was safe. But can we read the details of the report online? No. And the report was conducted by the safety group of the LHC — not a third-party independent group. It reminds one of the bankers who a couple of years ago were



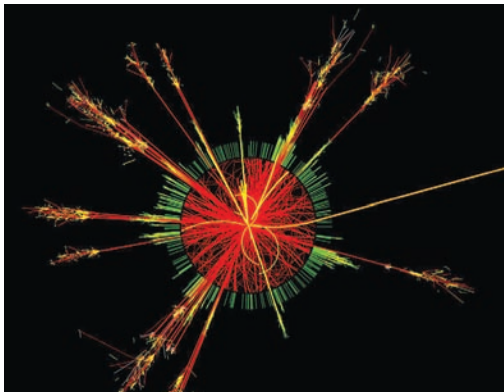
## Miracle engines

Cutting edge propulsion technology that will save the planet

# 48

## Supermassive blackholes

Could cause ripples in the fabric of space-time



The end of the world as we know it? Simulated production of a black hole in the ATLAS detector, from the CERN web site.

telling people how safe their policies on lending were.

The most worrying argument they have put forward to convince us that the LHC is safe is this: that if tiny BHs are produced in the collider, they would be very short-lived, as they would evaporate by means of Hawking radiation before they can come in contact with any other particles to absorb. This is all very well, but this theory from Stephen Hawking is completely untested, and is right at the edge of our understanding of the universe and how it works. It may very well, therefore, be wrong. The best way to test a theory such as this is not by gambling with the very existence of our planet.

The scientists at CERN certainly seem to expect miniature BHs to be produced in the LHC, and you can find on the CERN web site simulations of the detection of such events, such as the one shown on this page. This is entitled "Simulated production of a black hole in ATLAS". On another of CERN's web pages we find another simulation: "An image of an event in which a microscopic-black-hole was produced in the collision of two protons in a computer generated image of the ATLAS detector." The event is described as an "exciting possibility"! If you could experiment safely with black holes it would indeed be exciting, but if the planet ends up being gobbled up...

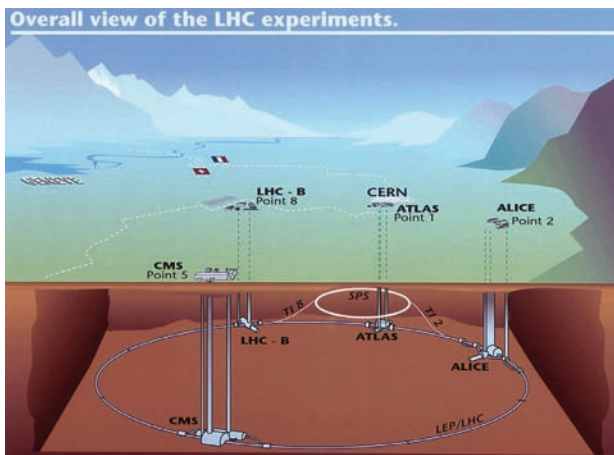
On the same page we are reassured with the comment "Such a small black hole would decay instantly to various particles..." Unfortunately, on this and other similar pages, they miss out the all important word "theoretically". It is simply

misleading to state as if it were a proven fact that any little BHs would decay instantly. Nobody knows whether this is true or not. Relying on a completely untested theory for the safety of the planet seems to many people to be completely unacceptable.



However, perhaps the best argument in favour of the safety of the LHC is this: ultra-high energy cosmic rays have been hitting our upper atmosphere since the planet was formed. Their collisions with atoms have energies far higher than will be achieved in the LHC. However, some have pointed out that, unlike in the LHC, these cosmic rays will be hitting stationary atoms, and any BHs produced will have high velocities and fly off away from the Earth. However, this will have been happening on the surfaces of every star, planet, neutron star, etc., out there, and we have detected no problems as a result of miniature BHs. For example, if a cosmic ray hit a neutron star and created a persistent black hole (not short lived as in Hawking's theory), this would very likely be captured by the very strong gravitational field of the neutron star and would rapidly consume the star. However, we are able to detect neutron stars, and we can therefore deduce that this is not happening.

We can probably draw one of three conclusions: 1) such collisions do not produce miniature BHs, and if they do, 2) either Stephen Hawking is correct, or if they last a long time, 3) they interact so slowly with normal matter that they remain microscopic and harmless for a period of time at least similar in magnitude to the age of universe, and that they are therefore everywhere — passing through you right now, perhaps. ■

edward.henning@thinkdigit.com



An overall schematic view of the LHC experiment at CERN. This shows the locations of the four main experiments (ALICE, ATLAS, CMS and LHCb). ©CERN


**TOP GUN TECHNOLOGIES**



Best of the Best  
The Best Network & Security Labs in India

**Others Promise.  
We Deliver !**

**Integrated Program for Fresh Graduates**

## CCIE - Security CCIE - R & S

**CCIEs placed at Datacraft, Cisco, Emircom, HCL, AT&T in India, Australia, USA & Middle East.**

Loans through  **HDFC BANK**

---

**CCIEs in 2009**

**Mr. Ravi Kant Gumber**  
CCIE # 23428

**Mr. Shahfaizal Mohamadsab Attar**  
CCIE # 23258

---

**Courses Offered:**  
CCIE, CCNP, CCNA, CCSP, CCIP, CWNA, CWNP, CWSP, CCSA, CCSE, CISSP

**Lead Instructors :**

**AJAY PANDEY**  
B.E, MS (USA), CCIE # 14792, (Security / R&S), CISSP # 43675, CCSE, MCSE, ASAP.

**P. RAMESH KUMAR**  
B.E, CCIE # 20107

---

**Lab Equipped with :**

85 Cisco Routers (3600, 2600, 2500, 1700, 700), 24 Cisco Catalyst Switches (5000, 3750, 3560, 3550, 3000, 2950, 2900), Frame - Relay / ISDN, 8 Firewalls : SonicWall, Watch guard, Cisco PIX 515 E (UR), ASA 5510, PIX 501, 3005 VPN concentrator, 4210 IPS sensor, Nokia IP 330, Check Point, CiscoWAP/NICs, Cisco Call Manager MCS 7825

---

**Local Accomodation Available**

**We have Graduated over 7000 CCNPs & 45 CCIEs.**

**BANGALORE**

Visit our Website :  
[www.topguntechnologies.com](http://www.topguntechnologies.com)  
[info@topguntechnologies.com](mailto:info@topguntechnologies.com)

**SMS 080- 65616600**

**☎ 080-23528500 / 41277710**

**If you find a better Institute to do any of these courses, Join it !**



feature

The first mammal in space, the dog Laika, never returned safely to earth



# A SPACE ODYSSEY

We take a look at current and future plans to conquer the final frontier

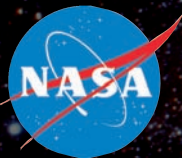
Aditya Madanapalle

If there was just one good thing that the world was managed to do, it would have to be the kick-start they gave to space activity. In 1942, at the peak of World War II, German scientists experimenting with extending missile ranges, sent the first rockets into space. These scientists were captured by both the Soviets and the United States after the war, and the same technologies used at war were later used for developing space capabilities. The Americans launched fruit flies into space in 1946, barely a year after the war, using captured

German rockets. This, however, was not seen as a threat by the Soviets at that time – and was not a part of the infamous space race. An integral part of the Cold War between the Soviets and the United States was the space race – similar to the arms race in many aspects.

The Russians heralded mankind's entry into space with the launch of the Sputnik I in 1957, which is significant for triggering the space race, and, as a result, the space age. The US didn't want to be too far behind and launched its own Explorer 1 in early 1958. America was under tremendous pressure to launch a space craft, as the Soviets stood to gain considerable tactical

## A roundup of major space agencies from around the world



The National Aeronautics and Space Administration (NASA) is the official space agency for the United States. It is one of two space agencies most actively involved in the ISS project, and the NASA space shuttles bear half the burden of resupplying and re-manning the ISS. NASA has sent its astronauts further than anyone else, being the only space agency to have sent men to the moon. The Apollo missions and the shuttle missions are among the most significant achievements of NASA.



Roskosmos is the national space agency of Russia. The Soviet Space Program was at the forefront of the space race until the Apollo missions, being the first space agency to have sent a man into space. Yuri Gagarin orbited the earth aboard the Vostok 1 on 12 April 1961. The Soyuz spacecraft regularly resupplies the ISS. The RKA has sent the most number of space tourists aboard the ISS, through the agency of its affiliate, Space Adventures, Ltd. It is at the forefront of space habitat engineering, with the primary ISS modules being designed and fabricated in Russia.



The European Space Agency is primarily known for its launches of satellites. Most of the European Union is either actively involved, or have plans for future co-operation in this agency. The ESA has facilities in the UK, France, Italy, Germany, Spain, Netherlands and New Guinea. The ESA co-operates actively with most other space agencies, including the Chinese, the Japanese and the Indian space agencies. Current plans include building a Soyuz-like spacecraft for space travel beyond low-earth orbit (dubbed LEO in space jargon).



The Japanese Aerospace Exploration Agency is at the forefront of astronomy. It is responsible for a good portion of the tech wizardry in the ISS, most notably the Kibo lab. It is also planning manned missions to Mars; more seriously than anyone else. Jaxa collaborates heavily with the ESE. The Japanese are at the forefront of exotic space propulsion technology, especially in the domain of building and using solar sails.



The Chinese National Space Agency started in 1992, making it one of the youngest on the playground. However, it has shown stunning achievements in a short span of time, most notably with the Shenzhou program, putting a Chinese in orbit in 2003 – barely ten years after the agency's inception. The CNSA is one of the most secretive space agencies around, and likes to thrill the global community by revealing spectacular achievements suddenly and without pre-warning.



The Indian Space Research Organisation is on a par with the ESA in terms of satellite launches. ISRO has one of the largest fleet of launch vehicles, used for different kinds of launches, from polar to geosynchronous. India tested a spacecraft called the Space Capsule Recovery Experiment, which successfully remained in orbit for 12 days before returning to the Bay of Bengal. This proved that India was capable of manned spaceflight, which was more of an achievement than the widely publicised Chandrayaan mission. If you want to be an Indian astronaut (called a Brahmanaut), you can sign up from 2012 at Bangalore.





## ISRO discovers non-Earth bacteria

Indian space scientists have discovered three new strains of bacteria, not found on Earth, in the upper stratosphere

ESA's Mars Express has found signs of erosion, allowing geologists to further study the history of the red planet. The Mars Express has also beamed back video footage of water on the surface of Mars.

## SCI-TECH

advantage if they were not answered. The US stayed close on the heels of every space achievement of the USSR. The US sent a man into space barely 23 days after Russia sent hers. However, the US could not match all the early Soviet achievements. This included sending the first woman into space, the first multi-man crew, the first probe to another astro-body (the moon) and the first photos from the far side of the moon. The US, was however well ahead in terms of communication satellite launches, and orbital technologies but these were technicalities that the population of the countries did not generally appreciate. For everyone, the Soviets were simply more sophisticated because they were the first to explore into territory where no one else had gone before.

In 1961, John F Kennedy, then President of the United States, famously declared that the US would attempt a mission of "landing a man on the moon and returning him safely to the earth". The Soviets removed themselves from this race early in the decade, and did not even try. This declaration, and the events that followed, marked a fundamental change in the nature of human activity in space. Instead of gaining a tactical military advantage over an enemy, the Apollo missions were about exploring the unknown, for the sake of scientific knowledge. The space race slowly died down, and was replaced by a more co-operative environment.

The next big thing after the US Apollo missions was the MIR space station of the Soviets. The name "MIR" means "peace" in Russian. The MIR space station was a forerunner to the International Space Station, using the same methods of modular fabrication in space. The US and the Russians finally collaborated on a famous 1995 shuttle mission, when the US space shuttle Atlantis docked with the Russian space station. Several more docking visits followed.

The adventure of space has finally brought a number of nations into cooperation — a fundamental requirement because of the economics involved. Co-operative efforts turn out to be more cost effective than independent efforts, and a shared pool of ideas and efforts lets everyone achieve more. The Americans, the Russians, the Chinese and the EU are working together on the ISS. The EU has also collaborated with the Chinese and Indians on launches.

Fundamentally, each space mission is made up of two components: The first component is the launch vehicle, which is the rocket that goes into space. The second component is the payload, which can be an artificial satellite, a probe, or a spacecraft. The primary Russian launch vehicles are the Soyuz and the Proton rockets. The Saturn V took the Apollo astronauts to the Moon. NASA currently uses a fleet of launch vehicles — the most famous being Taurus.

India, too, has a fleet of launch vehicles, most of which are intended for satellite launches. These are SLV, PSLV and GSLV, and simply stand for Satellite Launch Vehicle, Polar Satellite Launch Vehicle and Geosynchronous Satellite Launch Vehicle, respectively. The Chinese have sent spacecraft with humans into orbit with one of their Long March rockets, which is an umbrella term for their fleet. The Japanese and the EU too have launch vehicles, but these are for satellite payloads. NASA's Space Shuttles are the most well-known space craft in existence. Columbia and Challenger were both lost in accidents, while Atlantis, Endeavor and Discovery are still in service. The Russians currently use the Soyuz craft; the program is in its third generation of models. China used the Shenzhou craft, which successfully carried three people into space in 2003. The Indians can launch men into space using their PSLV rockets.

Particularly noticeable in the last decade is co-operation. Payloads from one

## The Soyuz spacecraft



The Soyuz spacecraft is the most successful space flight model in history. Both the launch vehicle and the spacecraft are named Soyuz, and there have been many modifications over the years. Although the shuttles came in and are being phased out, the Soyuz space craft has been around and still continues.

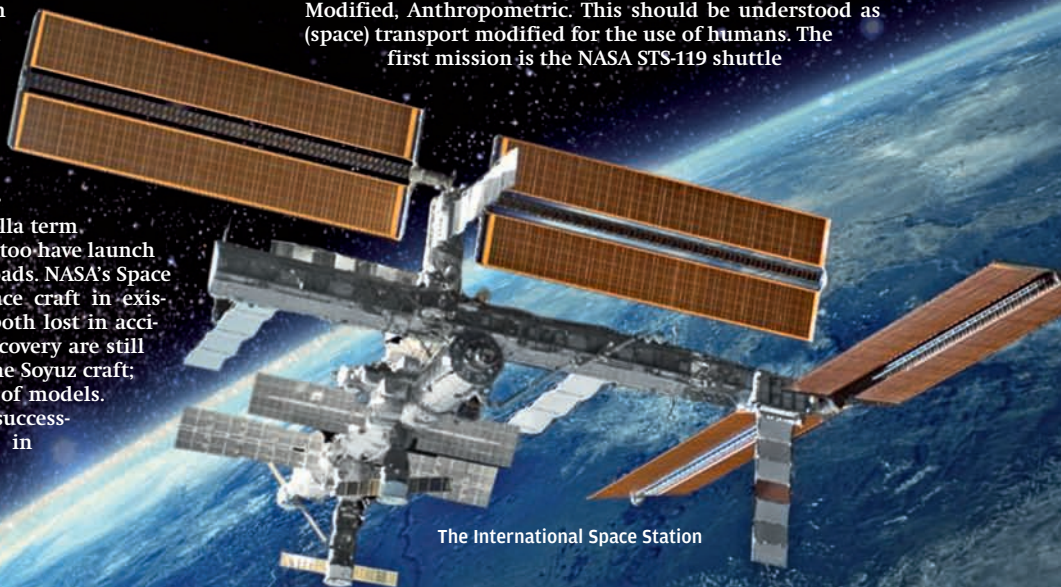
Each Soyuz craft consists of three parts. The first part is a spherical orbital module, which provides life support and accommodation for the crew during the mission. The descent module is bell-shaped, and returns the cosmonauts back to the Earth, by deploying three parachutes on re-entry. The instrumentation module has the engine and the solar panels for energy. Only the descent module is shielded for re-entry, the other two modules are destroyed in the stratosphere. The Shenzhou space craft of China and India's Orbital Vehicle are both based on the Russian Soyuz. In fact, Russia has shared design plans with those two countries.

country have gone into space using launch vehicles from another — Italian satellites have gone up using ISRO's launch vehicles, for example. Countries without any launch capabilities have sent astronauts to space on other space crafts. Even modules within a spacecraft of one country are designed by another — such as the Italian multi-purpose logistics modules on American space shuttles for cargo. The usually reserved Russians have given space technology to the Koreans. The private sector is expected to be involved soon, when the shuttles are phased out.

Although there is widespread co-operation, there are a few independent missions being undertaken by various countries, and most have a personal agenda. This agenda is not competitive, but an internal effort to gain technical know-how. There are exciting times ahead. The next decade will see many more players, culminating in a climax in 2020 where four agencies may meet on the moon.

### 2009

This year will see a number of human spaceflights. Current spaceflights from the US are denoted with the letters STS (for Space Transportation System) followed by a number. The Russian missions are referred to as TMA, which stands for Transport, Modified, Anthropometric. This should be understood as (space) transport modified for the use of humans. The first mission is the NASA STS-119 shuttle



The International Space Station





## feature

## JAXA launches Ibuki

Launched on 23 Jan 2009, Ibuki is the first satellite for collecting data on greenhouse gas emissions

mission to the ISS scheduled for 13 March 2009. By the time this issue rolls out, you should have seen plenty of coverage of the Discovery mission delivering components to the ISS. The primary purpose of the mission is to deliver solar panels to the space station. A number of experiments will also be carried out. The shuttle will carry a crew of nine. Later in the same month, on 26 March, RKA's Soyuz TMA-14 mission will take two cosmonauts and a space tourist to the ISS.

The space tourist in question is a Hungarian named Charles Simonyi. He previously went into space in 2007, as a space tourist to the ISS. Interestingly, Simonyi worked on our

dearly beloved MS Office and has managed to bag the privilege of being the last space tourist to go aboard the ISS for some time, because the shuttles will be phased out in the near future. This means that only private crafts and Soyuz will service the ISS, leaving very little room for space tourists. Later, on 23 May 2009, the Atlantis Space Shuttle will carry a crew of seven for a final servicing mission to the dying Hubble Space telescope — STS-125. The purpose of the mission will be to install some guidance systems and gyroscopes on the telescope, which will let it continue working for a while. This will be an interesting mission for all of us, as an IMAX camera will be taken into space for the second time, to film a documentary on the Hubble telescope. The STS-400 is a Shuttle mission to watch out for. Due to the age of the space shuttles, surface damage to the shuttle poses a considerable danger. In case any problems develop with the Atlantis mission, Endeavor will launch close on its heels and rescue the astronauts: a first of its kind shuttle-to-shuttle transfer.

Sometime in the same month, the RSA will launch the Soyuz TMA-15, a mission to transport crew to the ISS. Aboard this Russian craft, will be one member from each of Belgium and Canada. Apart from the contingency mission of STS-400, Endeavor will be on schedule for a May launch to the ISS, the STS-127. The most important component being delivered to the space station will be the Japanese Kibo laboratory. This mission requires extensive spacewalks by the people on board, and is bound to produce some interesting images. From this mission onwards, there will always be a six member crew on the ISS.

The Soyuz TMA-16 launch will take place some time in September this year. The three man crew will consist of an American, a Russian and a Kazakh cosmonaut. The Soyuz TMA-17 mission will reach the ISS in November. The crew will comprise a Japanese, an American and a Russian. The Atlantis STS-129 mission is scheduled sometime in November this year. This mission will carry an assortment of parts for the ISS. A large portion of these parts will be spares, only to be used when needed. The final human spaceflight planned this year is in mid-December. The STS-130 will use the space shuttle Endeavor. This will be an important mission for the station, as the robotics control centre will be launched in the payload. This module will control the robotic arm of the ISS, along with other deployed robotics and robotic attachments to follow the next year.

### 2010

The first flight planned for 2010 will be the STS-131 mission, due in for February. This will be the final mission for the short-lived, but incredibly useful MPLM (see box). This mission will deliver



Launch vehicles around the world. From left to right, the Soyuz (RSA), the Saturn V (NASA), the GSLV (ISRO), the H2A204 (JAXA), the LM2E (CNSA), the Ariane 5 (ESA)

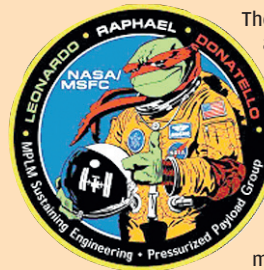
a spare ammonia tank to the ISS, along with a sleeping area to accommodate more crew. This shuttle mission will also attach a logistics module. The space shuttle Atlantis will be used for the final journey during this mission. The STS-132 is scheduled later in April. This will be the final flight of the Discovery shuttle. A mini-research Russian module will be sent to the ISS, along with Canadian and Japanese robotic arms. The Soyuz-TMA 18 launch will send three cosmonauts to the ISS in May. At the end of May, the Soyuz-TMA-01M launch will use the new class of Soyuz craft.

The STS-133 mission due in May 2010 will be historic for several reasons.

This shuttle mission will deliver components of the ISS, the EXPRESS Logistics Carrier. Although more components will be added later on, the ISS will be said to be completed on this mission. The space shuttle Endeavor will fly for the last time, after which the shuttles will retire, completing 33 years of service. Towards the end of September, the Soyuz-TMA-01M launch will use the new class of Soyuz craft. These spacecraft, known as the Soyuz TMA have a number of upgrades including a new parachuting system for re-entry, a glass cockpit, and upgraded electronics. There are some other changes that allow better docking with the ISS and better compatibility with the American counterparts.

However, the next Soyuz mission in November — the TMA-20, will use the old Soyuz spacecraft. NASA's Commercial Orbital Transportation Service (COTS) program will take over after the retirement of the shuttles. These are contracts given out to private organisations to supply and man the ISS. The Taurus II, a launch vehicle built by the Orbital Sciences Corporation will carry the unmanned Cygnus spacecraft into a test orbit, and possibly re-supply the ISS in the later part of 2010. Although

## Multi Purpose Logistics Module (MPLM)



The Multi Purpose Logistics Module is a hybrid between a cargo bay and a spacecraft. There are three modules in existence, constructed by the Italian Space Agency. The modules are named Donatello, Raffaello and Leonardo, after the famous Italian talents. Raffaello and Leonardo are being used repeatedly on a number of Shuttle flights. The modules are mounted on the shuttles during transportation. Once at the ISS, the modules can be detached from the shuttles and docked with the space station itself. At this juncture, the modules support humans because they are pressurised and have certain vital systems such as life support and fire alarms. The module normally stores additional equipment for the station, and returns back to Earth with the shuttles. When piggybacking on the shuttle, humans cannot enter or exit the module. The Donatello module is a more advanced version, and has not been used as yet, and is not likely to be used before the shuttles are retired.

The Soyuz TMA-14 vehicle will remain docked to the ISS as an emergency escape pod, in case storm troopers barge in and launch a hostile takeover

The amount of platinum in an average 10-kilometre wide asteroid is worth \$5,000 billion. This value is not considering other minerals

not planned yet, another Shuttle mission has been sanctioned, and a space shuttle might be used for leftover operations on the ISS. Furthermore, sometime in 2010, the Chinese also plan to launch a space station of their own called the Tiangong 1. This will be done by a base launch of a module of eight tons, which will be joined by two or three *Shenzhou* spacecrafts over the span of a year to collectively form a small space station or research lab.

#### 2011-2015

There are no firm plans yet. However, the Chinese are expected to accelerate their space activity in this period. The Tiangong 1 will be complemented with two more space stations, named the Tiangong 2 and Tiangong 3. This is important for the Chinese as a successful mission will give them a realistic idea of approaching manned missions to the moon. The approach for the Tiangong missions will be the same, which will involve a number of *Shenzhou* spacecraft launching to dock with the space stations. The Chinese will also launch an unmanned mission to Mars in 2014, as a pre-cursor to possible manned missions by 2040.

The Japanese Hayabusa 2 mission will be launched sometime in this period. This launch is significant as the spacecraft will test the possibility of human spaceflight to an asteroid, and back again. JAXA will also focus on its *Selene 2* project, which will orbit the moon and act as a precursor for manned missions to the moon around 2020. The Japanese manned flight program is lagging behind the Chinese and the Indians, but they are expected to be the fifth country to send humans into space.

ISRO is on schedule for being the fourth space agency, after RSA, NASA and CNSA, to send humans into space. The PSLV or GSLV rockets can be used as launch vehicles — the latter is a more likely choice. India has already demonstrated the capability of indigenous heat shields in a space capsule recovery experiment using PSLV rockets. A facility for launching the GSLV MK-II launch vehicle is expected to be constructed at the outskirts of Bengaluru around the year 2012. At the same time, training for human spaceflight will commence in India at Bengaluru. This facility is expected to involve large tanks of water for zero-gravity training. There will also be a centrifuge setup for training. The Indian version of the astronaut may be called a *gaganaut*, a *vishvanaut* or a *brahmanaut*.

The first of these will be on board a Russian Soyuz mission in 2013. The Russians will collaborate with the Indians on a number of issues, including selecting and training the crew, and technical help with life support systems. By 2015, the first two-man crew from India, on board an Indian spacecraft, using an Indian launch vehicle is expected to reach a low-earth orbit. This launch is expected to take off from the ISRO base at Sriharikota. The Orbital Vehicle used is going to be similar in design and function to the Soyuz. After spending about ten days in orbit, the space craft will return to the Bay of Bengal.

The RSA will start constructing a new spaceport called the Vostochny Cosmodrome. The construction will take place over the first half of the next decade. Major advances will be made in Russian space crafts. Depending on whether or not the commercial space crafts can replace supply to the ISS, the Soyuz will finally be phased out. This will be replaced by the Kliper space craft. This re-usable spacecraft will be smaller than the shuttles, but will have a crew capacity of six. The modular approach of the Soyuz will be retained on the Kliper, but the Kliper re-entry module will have wings that will allow for a smoother re-entry than the Soyuz. The Kliper project is expected to be the



The ISRO SCRE capsule post its success

primary access to the ISS in the first half of the next decade.

NASA's budget has been severely curtailed by the heavy expenditure on war by the US. The slowing economy isn't helping too much either. While initial plans post the Apollo missions were on establishing a space habitat or a moon colony by 2000, almost a decade later we are looking at what is essentially a setback with the retirement of the shuttles. The next step by NASA will be to revisit its roots and go back to the drawing board for a new spacecraft. The Crew Exploration Vehicle (CEV) will be manufactured by Lockheed-Martin, and will be based on the earlier Apollo lunar modules, instead of the space shuttle. This craft, widely dubbed as "Orion" will be tested in the first half of the next decade. The crew capacity for the craft will be six, which seems to be a standard maintained by space agencies around the world. Orion will be made up of a crew module, a service module, a docking module and launch abort system. Both the Kliper and the Orion will have a failsafe crew safety in case of a problem during launch. The first real mission of the Orion spacecraft is expected to be in 2014, to serve the ISS.

#### 2015-2030

In these crucial years, the research and development teams from all around the world will focus on permanent and independent human existence in space. This would mean a long-term presence in space, with each unit being self-sustaining. Astronauts, cosmonauts and their variants around the world will be training for longer missions. The CNSA space stations should be in good order by then. Space tourism is also expected to make a comeback after a five-year hiatus, especially if the Russian Kliper missions stay on track.

The ESA is expected to use a modified version of its Automated Transfer Vehicle (ATV) to launch humans beyond low Earth orbit using the Ariane 5 as the launch vehicle. The ATVs are currently being used to re-supply the ISS. A modified version would include life support systems, and at least one module shielded for re-entry. The first launch of this vehicle is expected to take place some time in 2018. Around this time, Korea, Iran and Malaysia are three other countries that will be thinking of sending humans into low-earth orbit. Korea will be depending heavily on China for the necessary technology.

NASA in 2019 will send its Altair spacecraft to the moon for a sortie mission. This will research the essentials for a future lunar base. The Altair spacecraft is a modified version of the Apollo lander, with the biggest difference being in the kind of fuel used. The Altair spacecraft will use cryogenic fuel, which is fuel that requires extremely cold temperatures to be stored in a liquid form.

Some time between 2018 and 2020, the ESA, ISRO and the CNSA all plan to place humans on the moon. The ESA has very clear plans of starting construction on a permanent moon base in 2023, with permanent habitation from 2025. NASA's







## feature



### Astronauts unfurl ISS solar panels

On March 20, astronauts at the ISS unfurled the last set of panels, completing all the power generation modules on the space station

lunar outpost program will also take place over the same time period, with a permanent moon base established by 2025. The site for the NASA base has been identified as the Shackleton crater near the lunar south pole. The outpost is to be called the Neil Armstrong Lunar Outpost, and will function with a crew that has shifts more or less like the ISS. The RSA plans to send people to the moon by 2025, to establish a base that will begin construction well after the other nations. However, it will also be among the first to reach for Mars, along with JAXA and CNSA, by 2035.

The major factor delaying these plans is not a lack of technology, but a lack of funding. Because of the immense costs involved, independent approaches will not work out too well. The co-operation between ESA and RSA is pretty close, to the extent of sharing a launch pad. The RSA freely shares technology with the CNSA and ISRO. JAXA and ESA have a close association too. It makes economic sense for all these organisations to co-operate their efforts for the proposed base on the moon. Whether or not this is realized is yet to be seen. The alternative is another space race to establish the first base on the moon, which would be a costly and therefore slow affair for everyone involved. However, if the international co-operation on the ISS is any indication, the lunar base (or bases) will witness the same kind of international support.

#### 2030-2500

By this time, space agencies around the world will be thinking of serious colonisation of Mars. Once the Moon base has been established, the same technologies will developed further for use on Mars. Due to the availability of water on the surface, a base close to the polar regions is very likely. Therefore, a colony on Mars is actually in one sense easier to set up, or at least maintain, than one on the Moon. A fleet of vehicles, possibly from different space agencies, will be used for the colonisation. Apart from research, mining is bound to be one of the primary operations on the Mars base. For this reason, some kind of capability of returning goods to Earth will have to be set up on Mars. This might include a space elevator, which involves having a cord running from the surface of the planet to a launch point in geosynchronous orbit.

Initially, enclosed habitats will be the only option. The bases on the moon and Mars are bound to grow in size over the next few decades. In effect, by the year 2080, at least one independent and permanent base will be established on Mars. The moons of Mars, Jupiter and Saturn are also candidates for temporary or permanent colonies in outer space. One of the most intriguing heavenly bodies in the solar system is Europa. This moon of

### Private spaceflight



In 1996, the X Prize foundation announced a US \$10,000,000 prize for the first private spaceship to reach space twice, in the span of a week – essentially for a re-usable craft. Later on, the prize was renamed Ansari X Prize. A company called Scaled Composites sponsored the Space Flight One project, which involved building a re-usable spacecraft like the Shuttle, but with many differences in the design. In June 2004, Astronaut Mike Melvill made the first sub-orbital space flight aboard the Space Ship One. He repeated the feat within the week to claim the Ansari X prize, and heralding the entry of the private sector into the arena of manned space flights.

The Virgin Group, collaborated with Scaled Composites and announced Virgin Galactic, the first commercial private space tourism enterprise. Previously, Space Tourists were taken aboard the ISS through the agency of Space Adventures, a subsidiary of the RSA. Virgin Galactic will build Space Ship Two, with more passenger capacity than Space Ship One. The Space Ship Two will be the first spacecraft built specifically for the purpose of tourism, and will take paid passengers to sub-orbital flights. Passengers will experience zero gravity for a very short time. The first flights are scheduled to be post 2010. The ticket rates initially are expected to be \$200,000, but will be reduced to \$20,000 after the first few flights. Eventually, Virgin Galactic is also planning to send spacecraft into orbital flights.

Projects under development are varied and many. The Romanian ARCAspace project has designs of a manned spacecraft by the name of STABILIO. The Blue Origin company, based in the US, has also tested a spacecraft called Goddard, their purpose being to launch sustainable sub-orbital spaceflights. XCOR, also a US based company, has various plans and designs for spacecraft.

Over the long term, many more private players are expected to get into the field, once a steady income base is established. Some private foundations are researching long term goals, such as a space ark to rescue humanity in case of a global calamity. The Lifeboat foundation has elaborate plans for this space colony, and can be viewed at <http://lifeboat.com>.

Jupiter is covered with ice, and many experts believe that under-water life may exist on this planet. If any method of generating fuel from water is developed, Europa is going to be the pit stop for access into the rest of the solar system and beyond. A colony on Europa will most certainly follow any successful activity on Mars. If mining takes off on a large scale on Mars, the asteroid belt will be a viable option for those companies or agencies that want to extract ores from space.

Meanwhile, a large-scale permanent space habitat in Earth orbit will be an option that will be explored by many private corporations. Apart from the establishment of space tourism with hotels in orbit, at least a part of solar energy harvesting and farming will take place in space. In a confined space, without seasonal changes, and 24x7 access to sunlight, crops could grow much better on farms in space. Solar panels in Earth orbit that beam back energy to the Earth in the form of microwaves might also be an energy efficient operation. The technologies for these, and the ideas, have been around since the 1980s.

Another interesting possibility will be independent and permanent human habitats at the various Lagrange points near the planet. A Lagrange point is a position between two heavenly bodies that can be occupied by a smaller body such as a space station. The point is such that it allows the smaller body to remain stable between the two heavenly bodies. Such points between the Sun and the Earth, and between the Moon and the Earth are candidates for permanent space habitats.

There are a number of proposed mechanisms for these permanent habitats. The ones being aggressively researched involve large torus structures that rotate at high speeds. A

Bernal Sphere or a Stanford Torus are large rotating structures that simulate gravity along the internal surfaces. Other design plans include beads, or spheres that are assembled in larger rings, or other configurations in outer space. This would allow easy fabrication from multiple locations around the world. Apart from gravity, these habitats would have to solve a number of problems, including recycling, atmospheric control and garbage disposal.

Cities in space, with anywhere between 10,000 to 1,00,000 people will be built at this point in time. This is an inevitable step according to experts, as such technology alone will ensure mankind's continuing existence beyond our home planet. The construction of these cities will be achieved by assembling parts in orbit. By this time, a space elevator from the surface of the Earth would considerably speed up this process. An interesting idea for a space elevator on the Earth involves a mobile sea tether



Indian mythology mentions *Vimanas*, a spacecraft belonging to Ravana and Salva

**Propulsion engines**  
That breathe air and will save the world

48

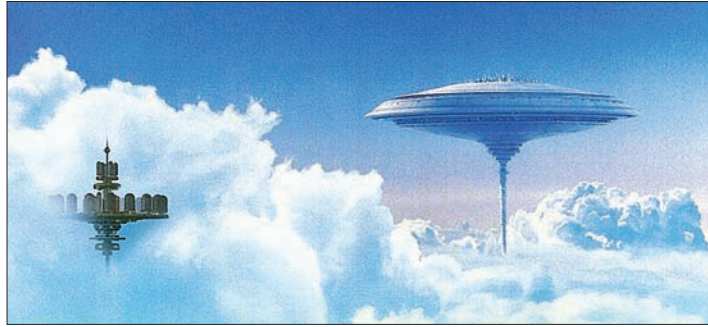
for a cable stretching from the Earth to a counterweight at a geosynchronous orbit.

### Beyond 2500

The Kardashev scale is a measure of the energy consumption of a civilisation. A type I civilisation can harness the entire energy from a planet. Similarly, a type II civilisation can harness the energy output of a star, while a type III civilisation, the energy output of an entire galaxy. At present, humans are at 0.7, as in we have not yet been able to harness the entire energy output of the planet. Conversely, the Kardashev scale can also show the technical prowess of a civilisation. With a lot of energy being consumed, humans can manage drastic changes to the environment.

Jupiter, will be an important planet that mankind will be looking at. A 2003 study by NASA about the future of colonisation, suggested Callisto as a candidate. Callisto is an ideal location to serve as a fuel stop for exploration into the deeper parts of the Solar System, beyond Jupiter. Jupiter itself is rich in carbon compounds and also helium. Cities in the sky, using large gas balloons are also being considered. This approach would also work for permanent bases on Venus. Floating cities are the most likely approaches for planets with a lot of gases in the atmosphere, including Saturn and Venus.

Terraforming is one of the most likely ideas of a post-type I civilisation. This involves changing the entire surface of a planet to make it habitable. Terraforming the Moon or Mars would remove the necessity of an enclosed base, and allow for a vast, Earth-like environment on another planet. This operation is most likely to be exercised on Mars, as the planet has a gravitational field



A proposed model for a sky city

that could retain oxygen, nitrogen and other vital gasses. Venus is another proposed candidate, with cities being established only in the outer atmosphere to begin with, and the terraforming operation eventually clearing up the poisonous skies for human habitation. These processes would take at least five decades to execute, so these activities will be long term projects.

At this juncture, humans will also start seriously looking at interstellar travel. There are a number of approaches at this point of time, the most likely to succeed will be a space ark that takes a breeding population, and several generations to reach the stars. In all probability, a fleet of such arks will be used instead of just one large ship. Other possibilities include cryogenic freezing, where humans are re-animated after a long journey in space.

While the timescales for these events may be off, the eventuality of such measures by mankind are inevitable. The reason for this is simply an instinct that has kept us from going extinct — self-preservation. There are a number of calamities that could befall this planet. The climate might change drastically, or a number of natural disasters, from a major asteroid impact to massive solar flares, could endanger life on Earth. At least a few of us would survive any eventuality, including a full-scale nuclear war, and life will go on. However, there is a clock ticking for the planet and the Sun. The Sun has a life cycle too, albeit a very long one. Eventually, the Sun will expand as it runs out of fuel, and when this event occurs, the Earth will be obliterated. This is why we reach for the stars. ■

aditya.madanapalle@thinkdigit.com







from the labs

## Going faster

Theoretically, a scramjet engine can reach speeds up to Mach 24, eight times faster than a conventional aircraft

# The Little Engines That May

The engines have always been there, but now, scientists are looking at ways to make them save us in the 21st century



Nimish Chandiramani

For so many years, it was easy to make advances in transportation. To go faster, you need to either (a) burn more fuel, (b) burn it hotter, (c) burn it faster, or (d) all of the above. That's how one-cylinder engines became V12s, how V12s became jet engines, and how jet engines became rockets.

But the old ways won't work any more. 'Tis a new world, that demands new things — we must move faster, but we must also do so without burning up fossil fuels. Some of us will settle for just moving, as long as we know we aren't polluting the atmosphere. Then there's air travel — we need to spend less time in the air, but still travel great distances. We must ride on the edge of space, but without the big, expensive multi-stage rockets. For every one of our desires, there's something holding us back.

It may seem like that scientists would have a lot of back-to-the-drawing-board-ing to do, but the good news is that the engines that will take us into the future have already existed for ages.

### ...And they breathe air

Thus far, the most popular way to get to the edge of the atmosphere is to use a rocket. But, of course, it isn't that simple. For even the smallest thing, we need massive rocket engines, which (apart from taking up a lot of space) aren't the most desirable way to get from point A to point B. It isn't enough to stuff these rockets with fuel — we also need to stuff them with an oxidiser that supplies the oxygen to burn the fuel.

So if we are to fly high, we must first expend with these massive rockets, and bring back engines that go back as far as 1913. They're called air-breathing engines, because instead of using a separate oxidiser, they use oxygen from the air to burn the fuel.

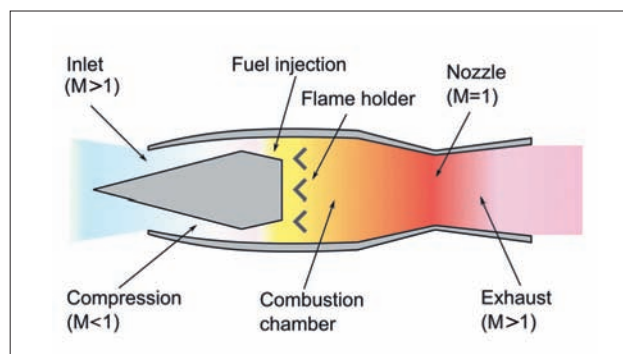
Like all engines, the basic principle of the air-breathing engine is the same — compress air, throw in some fuel, let it burn, enjoy, repeat. It's how the air gets there that makes the difference.

### The ramjet

This engine works on a simple principle — air enters a chamber at high speed, is compressed, and then is squished out of a tiny hole at the other end, which causes it to be expelled with even more pressure, propelling the engine forward.

Now, if you stuck some fuel at the point where the air was most compressed and set it on fire, you get an explosion of hot air. When that explosion goes out the other end, you get propulsion that demands the name "jet". Which is probably why the creator called it a ramjet. Not only is it a powerhouse, the ramjet is pretty efficient at supersonic speeds.

For all its goodness, though, the ramjet still won't be the engine that takes us into the future. We need aircraft that can



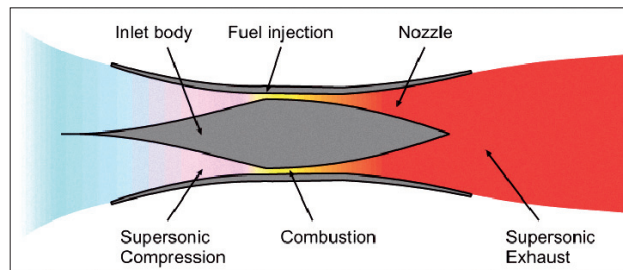
How ramjets work. The pointy bit at the front creates its own shockwave of air, and sends it into the combustion chamber behind it, where it's mixed with fuel, set on fire, and sent out the other end.

travel at ridiculous speeds — Mach 10 or so — but the ramjet stops being useful at around Mach 5. When the air compresses inside the jet, its temperature rises, and above Mach 5, the air gets too hot to burn. So someone tweaked the design.

### The scramjet

Where the ramjet stops, the scramjet begins. It's short for Supersonic Combustion Ramjet, and like the name suggests, it's designed to operate at several times the speed of sound. The improvement on the ramjet is simple enough: don't compress the air so much that it overheats, and toss the fuel into the mix a bit earlier. The result is a sleeker, shorter version of the ramjet.

At relatively lower speeds (Mach 3 or so), the scramjet will work like any regular ramjet, making it the engine of choice for future aircraft. In 2004, NASA's X-43A took its first successful stab at hypersonic flight, and reached Mach 9.6. In February, a UK firm called Reaction Engines received a million Euros (about six crores) to develop the Skylon, an unmanned scramjet that



The scramjet does away with the relatively large combustion chamber: the fuel is mixed with the air almost as soon as it gets in, and the hot air blows out the back.

The first ramjet engine, the GIRD-04, was designed by I.A. Merkulov and tested in April 1933

## Green tech 35

A look at the issues of global warming and e-waste

will carry 12 tonnes of cargo into low-earth orbit. Finally, later this year, the US Air Force expects to leave everyone in the dust with Boeing's new X-51 scramjet. All three projects use slightly different techniques to get the most out of their engines, and all three of them must overcome the same hurdle.

### The problems

By now, you might have guessed why aircraft manufacturers haven't shown the ramjet or scramjet much regard. For the engines to work, they need to move. Which means that something needs to get them up to supersonic speed before they start operating. More importantly, scramjets aren't likely to take their aircraft to Mach 12 – which is the speed that they need to enter the Earth's orbit – so something also needs to give them that extra push into space.

Here's where the researchers differ the most. The X-43A was dropped into the skies by a B52 bomber, and then used booster rockets to get up to about Mach 4, after which the scramjets kicked into action. All very well for a research aircraft, but we need a plane that can go from runway to stratosphere in a single stage. After the X-43's successful run, NASA's engineers made it clear that they didn't believe that was possible. Their plan is to build an aircraft that'll get to orbit in two stages – most likely a booster rocket for the initial thrust, with the scramjets taking over later. The X-51, too, will fit into this plan.

Reaction Engines, however, has bigger plans for the Skylon. To make the scramjet function at lower speeds, it will use a heat exchanger to cool the incoming air to as low as -100° C. When the fuel (hydrogen, in this case) burns in this cold air, it'll expand rapidly, giving the engines enough thrust to get up in the air and start getting to Mach 5. Finally, at a height of 26 km, it'll switch to good old rocket power for a final push into space.

### What Now?

Right now, the future of the scramjet is anyone's guess – it all depends on how researchers plan on tackling the get-it-to-Mach-5 problem. If the Skylon succeeds, it'll score a big point for those

who support the scramjet. If not, however, we come back to the jet-versus-rocket battle that's being fought right now. Meanwhile, we can take a step down to earth.

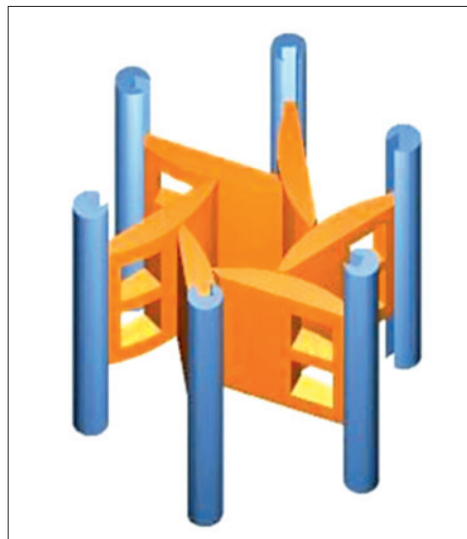
### Driving around

For all their fuel-efficiency, the cars we drive are still based on the internal combustion engine (ICE). This is likely to go on for a while, because despite the push for more electric cars, petrol will take you farther, and takes only a few minutes to refill. And, of course, international oil politics will prevent the world from switching to electric cars overnight.

For now, researchers must work on engines that are modifications of the original ICE, or like Tendix, come up with a brand new design for combustion engines.

### The IRIS

The biggest problem with the traditional ICE is that it's inefficient – only 25 per cent of the energy that goes into it drives the wheels. The rest goes into overcoming the friction between all the moving parts – the pistons and cylinders, most notably – and gets wasted as heat. This made inventor Timber Dick a sad panda, so last year, he set about designing a more efficient engine, and called it the IRIS – the Internally Radiating Impulse Structure. Conveniently enough, the engine even works like a camera's iris – instead of pistons that go up and down, it features six chordons – door-like structures – arranged in a hexagon. As they rotate, they transfer power to the engine's gears.



A 3D model of the IRIS engine. The inventor's family hopes to create a working prototype soon

If the company manages to get the IRIS off the ground, it'll likely have an efficiency of 70 per cent, which means that you'll be able to get twice as far – if not farther – as you do right now.

### The long wait

Don't expect to be flying in a Skylon or X-51 any time soon. NASA's plan for the two-stage-to-orbit aircraft is a 20-year plan, so you're going to be considerably aged on your first flight. The Skylon is still a concept, so we still need to see whether it materialises at all.

As for driving around in a car with an IRIS engine, it all depends on whether the IRIS can make it to the market before... well... something else does. In any case, the IRIS can't be a long-term solution, because eventually, something needs to replace petrol engines.

Meanwhile, get used to the whine of jet engines, and enjoy a hybrid or two while you're on the roads. ■

readersletters@thinkdigit.com

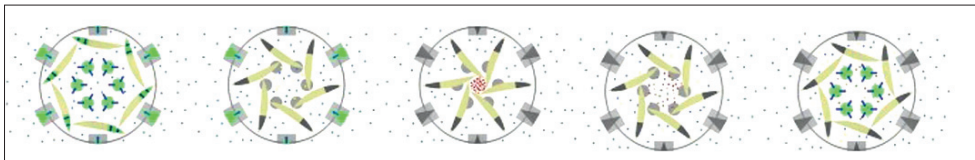
### The Case For The Rocket

While everyone's pitching scramjets as the engines of the future, there are several who argue that we shouldn't waste our time on them. The engines of the future have been here all along – rockets. For every one of the scramjet's advantages, the rocket has an answer.

The scramjet promises to reduce the weight that the aircraft carries into orbit – no more booster rockets. However, all the fuel in the booster rockets burns up on the way up, and the boosters themselves are tossed off. In fact, after the boosters go, the aircraft that remains can even be lighter than its scramjet equivalent – NASA found that out when they were studying designs for a single-stage rocket.

In fact, the rocket doesn't seem to have anything against it. Not during a flight, anyway.

The only disadvantage of rockets seems to be the whole production behind each launch – building and filling the boosters, attaching them to the aircraft, and so on. If someone figures out a way to get all that done quicker and cheaper, the scramjet will go back to the history books soon after.



From left to right: In the first phase of the cycle, all the chordons are wide open, and air enters the engine. In the second, the inlets close, and the chordons close inward, compressing the air in the middle. Fuel is then injected into this space, and burned. The hot air now expands, pushing the chordons outward – this is the cycle that does the work. Finally, the exhaust valves open, and let the exhaust out





tried & tested  
speaker test

For Your

EARS  
Only

Your computer wants to tell you something. Turn up the volume...

**Michael Browne**

The last time we tested PC speakers was a year ago. Unlike most product categories where there is always something new (read *hot*) to report about, speaker gossip is out-of-stock at the moment. In fact, if our observations are true — computer speakers are slowly going the way of the Dodo. The reason — attrition of sorts is at work here. The falling prices of home-theatre setups, the availability of large-screen displays and cheap DVD players and even the preference for headphones, in general, over speakers, have all exacted their pound of flesh from the speakers' market. From what most distributors tell us, speaker sales are slowly dwindling and while it's too early to comment, we kind of agree with the facts.

The slowdown in the adoption of PC speakers has also affected manufacturers. This is clearly evident as we have fewer new models in the market today and the ones that are new are largely for the value-conscious segment. Gone are the days of the large eight-inch subwoofer drivers and the powerful four-inch mid-range drivers. Manufacturers are outfitting so-called subwoofers with puny four-inch drivers which we feel are not even capable of delivering 50 hertz, let alone anything lower than that. It seems like the spark has gone out of the market in the past couple of years. Gone are the nifty innovations that we used to see like optical connects, wireless speakers and the speakers themselves in general are not as powerful as PC speakers used to be. That's not to say this year's bunch of speakers were lack-lustre in any way. It's more like the market emphasis is shifting from performance to value-for-money — a fitting pre-recessionary trend; but one that we hope will change nonetheless — it's so much more fun that way.

## Hard drives 58

We test the latest storage solutions to hit the streets

## Bazaar 64

A roundup of latest products in the market

THX is not a recording technology nor a standard format. An acronym for Tomlinson Holman's eXperiment is a hi-fi sound reproduction standard developed by Lucasfilm in 1983

When shopping for speakers, it's important to consider your needs before you go around meeting them. Some people like the idea of a 5.1 speaker system because they feel that if there are actually five speakers, the setup surely must sound better than just two speakers. A few of the more knowledgeable folk may actually figure out that they need a 5.1 speaker system, simply because they watch a lot of movies. For those of our readers who do not know: a 5.1 speaker system does not just have five speakers, but offers up to six channels of sound. These six channels are not used for music alone (which just uses two channels and hence the name stereo), but for movies that have positional surround sound built into them. Suppose you're listening to music on a 5.1 speaker system. Only the two front channels will actually be in use along with the woofer unit — the other three speakers will simply not be used, since music is a two-channel source. Movies are a different story. If there is a scene where the sound source is behind the listener, only the rear speakers play this sound. Similarly, for any sound emanating from the sides, only the corresponding speaker(s) play that sound. This gives the impression of being present in the movie and this sort of positional sound is used by all the movies these days. In fact, if movies is all you're interested in then a 5.1 speaker set is the only way to go. However, cable clutter is always a problem with multi-channel speakers — the more the speakers, the greater the clutter since the number of wires also goes up proportionately. For music, a 5.1-channel setup is largely a waste since most of the time only two speakers will ever be used. For those looking at a solution predominantly for music, a stereo system is what you should look at.

A stereo system can either be a 2.0 system consisting of two satellite speakers

without a woofer for low frequencies, or it could be a 2.1 setup consisting of a woofer unit and two satellite speakers. Other sound setups such as 4.1, 6.1 and 7.1 units do exist, but these are rare to come by these days.

### 2.0 SPEAKERS Who needs bass?

2.0 speakers are somewhat of a rarity in our markets and the reason for this is the strong emphasis towards bass. 90 per cent of people buying a set of computer speakers look at the bass effect and if all the woofer unit does is belt out loose, boomy and unfocussed bass they like it. A 2.0 speaker basically consists of a speaker system with a left and right channel speaker and no dedicated unit for the lower frequencies. Do not mistake all 2.0 speakers for having weak bass though. This is because some satellite speakers have powerful low frequency units built into them. Although not as powerful as a dedicated woofer or subwoofer, these do pack quite a mean wallop that will satisfy most. However, the regular 2.0 desktop speaker is largely a wimp when it comes to producing tight, powerful bass. This is because they mostly consist of a three to four inch mid-range driver and a smaller unit for

the higher frequencies, but lack a larger driver for the lower frequencies. As most audio enthusiasts will agree — trying to get proper bass on anything less than a 6.5-inch driver is largely a wasted cause irrespective of how finely the driver is tweaked.

### Features:

We tested four 2.0-speakers, one each from Altec Lansing, Audio Engine, Artis and Zebronic. The Zebronic ZEB-T9000 was the best looking of the 2.0 speakers and was in fact one of the most appealing speakers from among all the categories in test. It's got a wooden finish and the grain of the wood is nice to look at. Although we would have

**BEST BUY**  
**diGit**  
APRIL 2009



Zebronic ZEB-T 9000

## How We Tested

We used a Pentium D 940 (3.0 GHz) CPU, ECS 945P motherboard, MSI GeForce 7300 GS graphics card, 2 GB of Corsair memory and a 250-GB Seagate hard drive. Our soundcard of choice was the ASUS Xonar HDAV 1.3 Deluxe.

We divided the speakers into three rather obvious categories — 2.0, 2.1 and 5.1 speaker systems. First we checked for connectivity — the presence of digital connects i.e. optical or coaxial connectivity. We also logged the presence of volume, bass, treble and other controls. The presence of an external decoder, remote control unit and FM Radio Tuner was also logged. Additionally, we rated the build quality of the knobs, dials and buttons and the stands provided with the satellites. The overall build quality of the product was also graded on a scale of one to ten.

For our performance tests we rated these speakers on a scale of one to ten under both movies and music. For movies, we used select HD clips of *The Transformers* and *Star Wars Episode 3 - Revenge of the Sith*. Both these movies have a lot of action scenes that test the bass and surround capabilities of the speakers to their utmost. The *Revenge Of The Sith* also has a very intense lightsaber duel, which comes with a lot of bass effects — the sound of lightsabers slashing through thin air is very distinctive. *The Transformers* also has a number of very complex audio passages that test the ability to produce a cinematic effect to the sound. The music used is listed in the accompanying table.

<i>Everybody Hurts</i> (The Corrs)	A great track to test the reproduction of female vocals. Andrea Corr works her vocal magic here and we checked for clarity, tonal accuracy and instrument detail
<i>Tears In Heaven</i> (Eric Clapton)	A very good test of guitar and male vocals for slower music, perhaps one of the best. We look for clarity, accuracy, and texture of the vocals and mid-range. Also the tonal accuracy and weight and impact of each guitar pluck
<i>November Rain</i> (Guns N' Roses)	A rock classic. This song has some complex guitar and instrument passages as well as some great vocals from Axel Rose whose growl-cum-scream sounds like nothing else
<i>Money</i> (Pink Floyd)	Pink Floyd remains one of the best tests for sound-staging and instrument separation as well as testing minute details. <i>Money</i> tests sound separation, panning and overall soundstaging
<i>Selkies The Endless Obsession</i> (Between The Buried And Me)	A complex guitar and drums instrumental track featuring lots of instruments at once. Here, separation and accurate rendition of the sound produced by each instrument along with its respective sound bias becomes important





## speaker test



Audio Engine A2

preferred the darker, timeless mahogany look that some very expensive audiophile gear boasts off, these have a slightly lighter colour that nonetheless looks classy. The enclosures are unnecessarily large, a fact which was reinforced when we heard them. On a tackier note (and a gross violation of design appeal), the frequency response graph plotted out in white text on a black background on the front of the left speaker unit just looks cheap. As do the volume, bass and treble controls — they're buttons! These speakers are heavy and large enough for most users to place them on the floor making the tiny control buttons on the bottom part of the front bezel an ergonomic goof up. As attractive as these speakers look, we'd really like if the enclosures were smaller in size. That being said, the drivers look well done with a brushed metal and chrome finish. Build quality is very good.

The Artis S7+ was the next speaker we looked at. These were tiny compared to the ZEB-T9000 and largely for someone looking at a very entry-level speaker for very low volume listening. Their build quality wasn't bad, but it's nothing worth writing home about. The Altec Lansing FX 2020 unit has a transparent dark fibre body that most people will find funky. The speakers themselves are cylindrical and the front has a large bezel-like square portion with which these can rest on any surface without rolling around. Build quality is good as is the quality of materials used and the connectors. The Audio Engine 2 was the next candidate under our magnifying glass. This is a piano-white finished unit that is small, but manages to look impressive nonetheless. The speakers themselves have Kevlar used for the cones and everything looks built very well. These speakers have the option to connect them to an additional woofer unit, which is a plus for anyone looking for more bass. The quality of connecting wires is absolutely top class.

### Performance:

when we saw the poor little things atop our test desk, we had expected much worse. The Altec Lansing FX 2020 was the next disappointment and frankly we were expecting a lot more from these speakers and the Altec Lansing brand. Sound quality is good *per se* and the FX 2020 gives reasonable bass for its size. The mid-range output is good; good guitaring and vocals come across well, especially Guns N' Roses where Axel Rose's screaming high notes are reproduced well. However, once the volume is turned up more than half way the ordeal begins, and everything is horribly distorted. In fact, at 80 per cent or above volumes all but aurally impaired will want to run out of the room and never look back. The Zebronic ZEB T-9000 impressed us at first, but not as much as we'd expected given their classy looks. They lack bass which we expected for a four-inch driver unit, but we had expected a little more than the loose and ineffectual bass they reproduced. The mid-range is rich and the vocals come across really well. There is depth to both male and female vocals that is pleasing to the ears and guitar passages are really enjoyable. At times, the T-9000 gets rather bright and this was noticeable during the

Although one does not expect a great movie experience sans a woofer unit, we were surprised to see the oodles of sound quality and quantity on offer. The Artis S7+ is the minnow of the lot and it shows as its performance can best be described as poor. There was no bass to speak of and the mid-range and highs were both rather crippled. However, it wasn't as bad as we'd expected

A speaker is also called an "electroacoustical transducer" that converts an electrical signal to sound

track *Everybody Hurts* by The Corrs — the vocals and cymbals come across as being a little too crisp to be termed as natural. The Audio Engine A2 was the last speaker we looked at. Although we were hoping to receive the A5 as well, which is a higher-end model that is more powerful than the A2, we were initially blown away by the power of the A2s. For such a small speaker system they are quite powerful, although sadly they distort at volume levels beyond 70 per cent of their maximum. The mid-range is clear and precise and the vocals have a very rich tone to them that feels satisfying. A lot of the guitar plucking during Eric Clapton's *Tears In Heaven* sounded almost like the guitar was being strung in front of us. Although the A5 will perform even better since it has a larger mid-range driver, we feel what the A2 really needs is a companion to help through the lower frequencies — which is its one weakness. You can see the tiny drivers trying their best to produce bass and the bass is noticeable, but not as focused and punchy as we would like. With its sterling performance throughout the mid-range the A2 captured our hearts; in fact, the only area it was best was the movie tests where the Zebronic ZEB T-9000 produced more bass, although not essentially better bass.

### Winners:

Our best buy was the Zebronic ZEB T-9000 for its superb price-to-performance ratio. Sure the Audio Engine A2 was a better performer at one-fourth the size of the



Zebronic Duality 6000

Loudspeakers are of two types – dynamic and electrostatic the latter use a high-voltage electric field rather than a magnetic field to drive a membrane rather than a voice coil

Headphones are miniature speakers and can be either electrostatic or dynamic

TRIED & TESTED

## Audio Engine A2 + S8 = Aural Nirvana?



The Audio Engine A2 is rather impressive though obviously it lacks bass. Meet its significant other – the S8 – a mean looking woofer unit with an eight-inch driver. The footpegs are two inches long and this ensures adequate distance between the driver and the floor. There are adjustments for bass level, phase and crossover threshold. The latter is adjustable from 30 Hz all the way to 150 Hz. Although the A2 has its own amplifier built into it when connected to the S8, this amplifier is fed by the amplifier of the S8 and the output from the soundcard is now connected to the woofer unit instead of the satellites. Priced at Rs 10,400 for the A2 and a whopping Rs 24,400 for the S8, this combo is very expensive for even a music lover.

The A5 in conjunction with the S8 would be pricier still. Once we set up the A2s with the S8 woofer unit we were surprised at the amount of bass this unit produces. It's not really boomy unless the volume level is really pushed, though to be honest, it's not as good as some of the other top-end woofers we've come across. The bass is clean, goes low and has a very pleasing impact. Explosions sound frightfully real. The woofer is powerful enough to do a slow dance if the volume is turned up – this is a pity. The A2, now free of its burden with producing great lows with its puny drivers can now focus on the highs and the mid-range which for some is where all the emotion in the music lies. Together this setup demolishes most other speaker setups easily. If anything, the woofer is overpowering and we figure the A5 speakers would be slightly more suited to such a powerful low frequency unit. The price still worries us. For Rs 50,000 or thereabouts you could pick up a great amplifier and floorstander combo which would demolish the A2 and the S8.

T-9000; but at Rs 10,400, the A2 is much costlier than the T-9000 which, at Rs 3,300 shocked us. It's great-looking barring a few oddities, sounds really good and at its price will likely find a lot of takers. If you're looking for a set of 2.0 speakers and have a gigantic table you can close your eyes and reach for your wallet. In case you want something really compact and yet no compromise on quality, you need to shell out big time for the Audio Engine A2. Casual music listeners who want something small and funky looking will be satisfied with the Altec Lansing FX 2020 – although really once you consider the ZEB T-9000 – nothing in the 2.0 speaker category is good value for money.

### 2.1 SPEAKERS

#### Look ma, I got a woofer too

Music lovers will want to take a look at this category closely. This is because with the presence of a larger enclosure with a larger driver unit dedicated to reproducing the

lower frequency range (25 Hz to 150 Hz) properly, a 2.1 system gives you the best music experience possible. Obviously, no two 2.1 speaker systems are equal and just having a 2.1 system does not guarantee music quality. We were tempted to test the combination of the Audio Engine A2 and S8 woofer in this category, but refrained since both these units can be purchased separately. One of things that is very important is the control over the bass of the woofer unit via a control knob and we looked for this feature.

#### Features:

We had a huge range of 2.1 speakers this time round and there were some 15 speakers in this category. From the outset, these were a diverse bunch and this was no more apparent than in the looks department. First, the tank-like, alien spaceship looking oval Razer Mako that seemed like it would survive a toss out the window (but probably won't, so refrain!). Both the Zebronic speakers looked good – the Duality 5000 and Duality 6000 will both turn heads and get more than cursory glances, although the latter is probably the better looking of the two. Both these speakers have some sort of design embossed into the front surface and the Duality 6000 has a very retro looking set of three matte finished dials – one each for volume, treble and bass. The woofer unit on both these speakers sets has two drivers hence the moniker, Duality. The build quality is good and kudos to Zebronic to come up with such a neat design. The Artis S-Dual uses the same enclosures as the Duality 5000 and aside from the brand name and graphics used, these speakers look identical. The Altec Lansing VS2421 is also attractive with a black-and-maroon colour combo that looks stylish and expensive. The remote unit is also well designed. The speaker grilles are a good quality cloth and the satin finish looks outstanding. The Intex IT2600 was boldly different and the entire set had a silver finish, while other vendors stuck to evergreen black. The Umax UPB 3200 was another neat looking unit. The woofer unit is small but looks neat

EDITOR'S PICK  
**digit**  
APRIL 2009



Zebronic Duality 5000





## speaker test



Umax Powerbeats UPB 3200

**BEST BUY**  
**digit**  
APRIL 2009

A subwoofer is so called because it can reproduce frequencies even lower than what a woofer can produce

and the satellite speakers have the front portion curving backwards at the top of the unit that looks novel.

The next speaker that caught our attention was the Creative T3100. The satellites are nicely shaped with a bulge around the middle where the driver unit is located. The brushed metal volume on the right side of the left channel speaker looks very tasteful. Some may not like the bright-blue LED power indicator that gets intrusive at night when the speaker is kept at (or a few inches above or below) eye level. Logitech's X 240 also looks neat and these speakers are built well. The fine cloth mesh allows one to see the driver underneath, which itself is a two-way affair consisting of a small mid-range driver and a tiny high frequency driver protruding out of the centre, and typically where the speaker's dust cap is found. Another looker is the Logitech Z4. These have a nice woofer unit that is not too large and the satellites have three small drivers for the mid-range and highs. The satellite drivers have a hard silver covered material that covers the driver and dust

TRIED & TESTED



### Speakers

**BEST BUY**  
**digit**  
APRIL 2009

**BEST BUY**  
**digit**  
APRIL 2009

	2.0 Speakers						
Brand	Artis	Zebronics	Altec Lansing	Audio Engine	Umax	Artis	Intex
Model	S7+	ZEB-T9000	FX 2020	A2	UPB 3200	S99	IT2600
Plus (+)	Very compact	Neat looking	Novel looks	Big sound	Great sound, Good looks	Solidly built	Novel looks
Minus (-)	Too Basic	Large, Mediocre performance	Mediocre Sound	Weak Bass	None in Particular	Low Quality Sound	Mediocre Sound
Price (Rs.)	Rs. 450	Rs. 3,300	Rs. 4,990	Rs. 10,400	Rs. 1,400	Rs. 1,450	Rs. 1,550
Grand Total (Out of 100)	18.92	50.00	39.96	56.07	56.07	39.46	52.19
Features (Out of 35)	3.29	17.50	10.78	11.48	13.30	10.50	16.80
Performance (Out of 65)	15.63	32.50	29.18	44.59	42.77	28.96	35.39
<b>Features</b>							
<b>Controls On Speaker / Remote</b>							
Bass / Treble / Volume (Y/N)	× / × / ×	✓ / ✓ / ✓	× / × / ✓	× / × / ✓	✓ / × / ✓	✓ / ✓ / ×	✓ / ✓ / ✓
Surround Effects (Y/N)	×	×	×	×	×	×	×
Others (List)	×	×	×	×	×	×	×
Bundled Accessories	×	×	×	auxillary cables	×	×	×
External Decoder (Y/N)	×	×	×	×	×	×	×
Remote (Wired / Wireless / N)	×	×	×	×	×	×	×
Built-in FM Tuner (Y/N)	×	×	×	×	×	×	×
Build Quality, buttons / Stands / Overall	4 / 3 / 4.75	6.25 / 5 / 7.5	6.5 / 6.5 / 6.75	7.5 / 6.25 / 8.5	5.75 / 5 / 5.5	3.5 / 4.5 / 4.5	5.75 / 4 / 6.5
<b>Performance (Scale Of 10)</b>							
<b>HD Movie Audio Test</b>							
Transformers	2	3.5	2.25	6.75	6.25	3.5	3.25
Star Wars Episode III	2	4.25	2.5	7	6.25	4	3.5
<b>Music Quality</b>							
Everybody Hurts	2.88	5.50	6.25	7.00	7.13	5.00	7.00
Tears in Heaven	2.88	5.88	5.50	6.63	6.75	4.88	7.00
November Rain	2.63	6.13	6.00	6.88	6.75	4.75	6.25
Money	3.00	5.25	6.50	6.88	6.63	5.13	6.75
Selkies The Endless Obsession	2.00	6.00	5.25	6.88	6.75	4.88	7.13

99 per cent of desktop speakers have very low-end amplifier units and low quality parts therefore their sound quality remains mediocre

Ernst W. Siemens was technically the first person to describe and build the first dynamic or moving coil transducer in 1874

TRIED & TESTED

## Contact Sheet

### Speaker Comparison Test

Contact	Phone	E-mail	Web site
Creative	+91-22-6451 0751	india.getcreative@ctl.creative.com	www.in.creative.com
Altec Lansing	+91-22-6709 0828	response@rptechindia.com	www.rptechindia.com
Zebronic	+91-44-4393 6000	enquiry@zebronic.info	www.zebronic.net
Razer	+91-250-451910	enquiry@netplacetechologies.com	www.razerzone.com
Intex	1-800-116 789	info@intextechnologies.com	www.intextechnologies.com
Logitech	+91-22-2657 1160	kavita_nath@logitech.com	www.logitech.com
Artis	+91-22-6634 5758	sales1@kunhar.com	www.kunhar.com
Audio Engine	+91-22-6635 9109	audioenginesales@gmail.com	www.audioengineusa.com
Umax	+91-22-4085 9600	sales@neoteric.co.in	www.umaxindia.in

cap. The satellite speakers have really solid and cool looking stands made of metal.

### Performance:

The most impressive performer from amongst the 2.1 sets was the Umax UPB 3200. Nicknamed "Power Beats", these speakers aren't the most powerful around but they boast of an impressive sound experience. The mid-range is well done — clear and crisp, and most of the finer nuances are well presented and very noticeable.

Guitar and vocal reproduction is good and each string pluck during Eric

Clapton's *Tears In Heaven* is clearly heard and one feels as if the performance is going on in front of him. Female vocals also sound very sharp and precise. The top-end is rolled off, although this is a case with nearly every speaker in this test and this is discernable to the naked ear. The bass is not as strong as we'd ideally like, but it supports the mid-range and highs well and there is an impact to the lows that sounds meaty.

The next speaker that impressed us was the Zebronic Duality 5000. It surpasses its costlier and slightly higher-end sibling in terms of overall detail in the highs. While the Duality 6000 sounded rounded

off, the Duality 5000 was less inclined in this direction. The mid-range also seemed clearer with more detailing. In fact, this set was rather close to another competitor — the identical looking Artis S-Dual. In fact, these speakers were alike in terms of sound signature and both offered great detail. We felt the need for a slightly tighter and more focussed effect to the bass. The Altec Lansing VS2421 was pretty good too — decent bass, a good mid-range and a top-end that felt quite airy and detailed. The speaker that really shocked us with its abysmal performance was the Creative T3100. With its look, we expected so much more, but the bass felt flabby and lifeless and the mid-range was coloured and detail was absent. The highs were also rolled off and post-review we feel you should avoid these speakers at all costs. The Creative M2600 was fairly poor too, as were both the offerings from Logitech and it surprised us to see the bigger brands take such a pounding.

### Winners:

Our Best Buy award is meant to reward those products that perform well within



### 2.1 Speakers

	Zebronic	Artis	Artis	Zebronic	Logitech	Creative	Altec Lansing	Logitech	Creative
	Duality 5000	S222	S-Dual	Duality 6000	X 210	Inspire M2600	VS 2421	X 240	T3100
	Very good sound, Great Looking	Neat looks	Good sound	Looks really neat	Built well	Built well	Neat looking, Good sound	Looks neat, Built well	Good looking
	A little more power required	Poor sound	Slightly expensive	Mediocre Sound	Poor sound	Poor sound	Slightly expensive	Very mediocre sound	Poor sound
	Rs. 1,600	Rs. 1,700	Rs. 2,000	Rs. 2,400	Rs. 2,695	Rs. 2,699	Rs. 3,450	Rs. 3,495	Rs. 3,699
	54.63	36.84	54.18	49.59	36.47	41.52	58.81	40.23	33.82
	13.16	13.44	13.16	17.22	10.50	15.26	20.23	10.43	13.51
	41.47	23.40	41.02	32.37	25.97	26.26	38.58	29.80	20.31
	✓/x/✓	✓/x/✓	✓/x/✓	✓/✓/✓	x/x/✓	✓/x/✓	✓/✓/✓	x/x/✓	✓/x/✓
	x	x	x	x	x	x	x	x	x
	x	x	x	x	x	x	x	x	x
	x	x	x	x	x	x	x	x	x
	x	x	x	x	x	Wired	Wired	Wired	x
	x	x	x	x	x	x	x	x	x
	5.5 / 4 / 6.25	5.75 / 4.5 / 6.5	5.5 / 4 / 6.25	6.5 / 5 / 6.25	5.5 / 6.5 / 6.75	5.5 / 5.25 / 6.25	7.5 / 7 / 7.75	5.5 / 6.25 / 6.75	5.5 / 5.25 / 6.25
	6.75	3.5	6.5	4	3	3.75	6	3.5	3.5
	6.25	4	6	4.25	4	4	6.5	3.75	3.5
	6.25	3.88	6.25	5.25	3.75	3.50	5.75	5.00	2.75
	6.25	3.63	6.25	5.88	2.75	2.75	5.88	5.13	2.75
	6.00	3.00	6.00	5.75	5.50	5.25	5.38	5.63	3.13
	6.63	3.88	6.75	5.13	4.88	4.75	6.13	4.63	2.75
	6.38	3.13	6.50	5.75	4.75	4.50	5.50	5.75	3.00





## speaker test

strict parameters of price. In this category, our award goes to the Umax UPB 3200. This attractive yet unassuming speaker system did what it was meant to do and then some. It produced very good sound, especially for its price — a meagre Rs 1,400 — it offers unbeatable value for money. A sliver away from this amazing deal is the Zebronics Duality 5000. This speaker system is priced at Rs 1,600 and is a great mix of excellent performance, great value and superb looks and is our Editor's choice. Regardless of what sort of 2.1 speaker system you are shopping for, we're certain either of these affordable marvels will more than satisfy. The Artis S-Dual also merits mention though not in the same breath as the previous two. Priced at Rs 2,000, this speaker system sounds good

and looks attractive as well. Perhaps the biggest disappointment here were the big guns — Logitech and Creative both bombed badly in this test proving once and for all that bigger brand names do not necessarily equate to better sounding speakers. Another dud was the Razer Mako. Sure it's a superbly built product and sounds pretty good, but priced at Rs 22,355, we reckon this one is an unworthy indulgence.

### 5.1 SPEAKERS Sound, all around

Surround speakers are the real deal for those looking at buying a speaker system solely for

movies and gaming. This does not mean that a stereo system cannot do well with movies and games, quite the contrary — a really good set of 2.1 speakers will trounce a mediocre 5.1 or even a 6.1 speaker setup. What you miss out on is the accurate positional audio when using a stereo setup. Therefore, if you spend more time gaming and watching movies and need the accurate multi-channel sound staging that a surround sound speaker set provides, then by all means pick up a 5.1 system over a stereo setup. Although 6.1 and even 7.1 sets are available, there are not many video formats around that make use of this standard. Another point to consider is the mess of cables that one needs to deal

Speakers				5.1 Surround Speakers			
Brand	Altec Lansing	Logitech	Razer	Altec Lansing	Creative	Logitech	Logitech
Model	VS4121	Z4	Mako	VS 3251	Inspire T6100	X 540	Z5500
Plus (+)	Well built and good looking	Looks neat	Built well, Looks good	Very good sound quality	Very good sound	Well built, Great Sound	Amazing for movies, Great Sound
Minus (-)	Slightly expensive	Flabby bass	Flabby bass, super Expensive	Mediocre looks	No digital connects	Slightly expensive	Very expensive
Price (Rs)	Rs. 4,200	Rs. 5,995	Rs. 22,355	Rs. 5,200	Rs. 5,799	Rs. 7,145	Rs. 27,995
Grand Totals (Out of 100)	41.35	50.12	52.21	60.64	55.13	54.17	76.39
Features (Out of 35)	16.03	16.94	16.66	21.35	14.28	12.25	27.90
Performance (Out of 65)	25.32	33.18	35.55	39.29	40.85	41.92	48.49
<b>Features</b>							
Controls on Speaker / Remote							
Bass / Treble / Volume (Y/N)	✓ / ✓ / ✓	✓ / ✗ / ✓	✓ / ✗ / ✓	✓ / ✓ / ✓	✓ / ✗ / ✓	✓ / ✗ / ✓	✓ / ✓ / ✓
Surround Effects (Y/N)	✗	✗	✗	✓	✓	✗	✗
Others (List)	✗	✗	✗	✗	✗	✗	Source select, Effects
Bundled Accessories	✗	✗	✗	✗	✗	✗	✗
External Decoder (Y/N)	✗	✗	✗	✗	✗	✗	✓
Remote (Wired / Wireless / N)	✗	Wired	Wired	Wireless	✗	✗	Wireless
Built-in FM Tuner (Y/N)	✗	✗	✗	✗	✗	✗	✗
Build Quality, buttons / Stands / Overall	4.5 / 3.5 / 5.5	7.5 / 8.25 / 7.25	6.5 / 6.5 / 9	6 / 3 / 7.25	4.5 / 4.5 / 7	5 / 1.5 / 6	8 / 8.5 / 7.5
<b>Performance (Scale Of 10)</b>							
<b>HD Movie Audio Test</b>							
Transformers	3.25	4.25	6	6.5	7.25	7.75	8.5
Star Wars Episode 3	3.25	4.25	5	6.25	7	7.25	7.5
<b>Music Quality</b>							
Everybody Hurts	4.38	5.25	5.13	5.50	5.86	6.75	7.50
Tears In Heaven	4.38	5.88	5.13	5.75	5.75	6.00	6.75
November Rain	4.13	5.63	5.25	6.13	5.50	5.13	7.50
Money	4.75	5.75	5.38	5.75	5.88	5.00	7.50
Selkies The Endless Obsession	4.00	5.88	6.38	6.00	5.63	5.88	6.25

Headphones are more cost effective than speakers and a speaker with similar quality to a headphone will be around 10x the price

Power (in RMS) is actually a measure of the electrical power that is transferred from an amplifier to a loudspeaker

TRIED & TESTED



Logitech Z5500

with. In fact, the length of cables bundled with a surround speaker system is important if you plan to place the satellite speakers a fair distance apart.

5.1 speakers systems are now much cheaper than they were couple of years ago. Due to the attrition we spoke about earlier, desktop surround speakers have lost a lot of ground to home-theatre systems and their ilk. Therefore, options are somewhat limited. We were only able to get our hands on four sets.

### Features:

The Logitech Z5500 warrants mention first. At first glance, it's obvious that this speaker is a high-end set. It's got a huge woofer unit with a massive 10-inch driver. In fact, this woofer unit looks really mean and is really heavy. The satellites are solidly built and feature two-way drivers. There is also an external decoder unit complete with LCD display and even digital connectivity. In fact, this was the only speaker in test to feature digital connects and that too, both coaxial and optical were provided. The decoder allows a maximum sampling rate of 96 KHz at 24-bits; 192 KHz at 16-bit quality is also supported.

Dolby DTS is supported, which is good for movie buffs. The decoder unit serves as a wired remote and a wireless remote control has also been provided to keep couch potatoes happy. The Creative Inspire T6100 was the next unit we

unpacked. This one has a much smaller woofer unit than the colossal Z5500's unit. The satellites look neat with a slim, tall appearance and a slight characteristic (for Creative) bulge in the middle. The Altec Lansing VS3251 was the third speaker system that we unboxed and once we unpacked it everyone was surprised at how simple it looks. In fact, the satellites look ultra-simple and there is nothing special about them at all. Even the choice of materials used in the construction is drab, even though overall build quality is good. The fourth speaker set in this category was another Logitech offering — the X 540. The satellite units look cool with a net-like material used for the construction of the speaker grilles. The woofer is a smallish unit and the entire speaker set looks built for compactness. The satellites have stands that swivel so that the speakers can be wall hung and while this is a great feature we found that every stand had some play which probably occurred while repeatedly twisting the speaker stands. The Z5500 also has this feature (swivel stands) but the construction is much more robust — no such issues with unnecessary play developing there.

### Performance:

When it comes to music, everyone demands quick bass response sans the boom: a liquid and smooth flowing mid-range that is musical, while retaining detail, and a high-end that is revealing without being overly harsh

BEST PERFORMER  
**digit**  
APRIL 2009

and sibilant. When it comes to testing speakers for movies, the rules change somewhat. We actually welcome more bass, more thuds and thumps for it bring the most dramatic movie sequences to life. Imagine an Anakin Skywalker lightsaber battle with tinny sounding lightsabers, cannot can you? Or imagine artillery fire in the *Transformers* without the accompanying rattle of windows. In this regard, the Logitech Z5500 really shines. It's a superb set of speakers for any sort of movie or gaming situation and produces some of the most powerful bass you'll ever hear from a PC speaker system. In fact, low frequency sound comes to life with this speaker system. The satellites are also powerful enough to chime in when required although the bass needs to be adjusted to a lower setting for fear of it drowning out the satellites totally. The mid-range is slightly recessed and this is not the best speaker for music, but other than that, the vocals and guitar sounds quite nice. The highs are also rolled off without the assistance of a dedicated driver for their reproduction. In the music test, we noticed some cabinets ringing with Eric Clapton's *Tears In Heaven* and the recessed mid-range didn't help the textural richness of the guitar strums. *Everybody Hurts* sounds pretty sublime and Andrea Corr's voice is done very well. There was also some slight issues with sound staging in Pink Floyd's *Money* where the highs seemed to be lacking some of the crispness that were expected. It's still the best sounding 5.1-speaker system in this test. The Altec Lansing VS 3251 was the most mediocre of these four speakers in terms of performance; however, it's still not a bad option for those looking either at music or movies, and to be quite honest, none of the 5.1 speakers could be termed as poor or even mediocre — they were all good! The Creative Inspire T6100 and Logitech X 540 are very close to each other in terms of performance, with the slight edge going to the Logitech unit for movies and the Creative offering when it came to accurate sound staging with music.

### Winners:

When it comes to choosing a best value winner, the Altec Lansing VS 3251 rears its head as the cheapest 5.1-speaker in test. It also performs well and courtesy of its all-round capabilities, it gets our much coveted Digit Best Buy award. If you're looking for a little more oomph and are willing to shell out Rs 2,000 or so more, look at the Logitech X 540. When it came to our Best Performer, we were at a slight impasse. On one hand, the Logitech Z5500 was the single most impressive all rounder in this test. It did music fairly well while performing, giving us a sterling show when it came to the movie tests. It's built well and also happens to have the most features on board. However, this is not the best speaker for music. In the end though we gave up our nitpicking, especially since the test results all pointed to one entity — the Z5500 now sports the Best Performer trophy on its mantle. ■


michael.browne@thinkdigit.com

BEST BUY  
**digit**  
APRIL 2009



Altec Lansing VS3251





# DATA GLUT

**Way back in 1981, Bill Gates apparently said that 640 kB was more than enough for anybody. Today, you can fill up that space in less than the time it takes to blink...**

**Rossi Fernandes**

There is an interesting theory that the human race is akin to a gas — in that it expands to take up all available space. One only needs to look around to identify at least a kernel of truth in that proposition. Much like us, data is pervasive and tends to be omnipresent. In many ways, our data is a reflection of ourselves — it's plentiful, varied, and present like a shadow sticking to our connected race. Today, a cross-section of the world wide web, that prime example of our society's data glut, is as likely to carry data from a star dead a million years ago, as it might carry your first-born's first giggle. As data explodes into our senses, data storage lags our needs, as perhaps all technology does. Why don't we have holographic storage devices yet, or better yet, those cool crystals that Superman employs to store his race's collective blog? Why are we still juggling data around across various media, partitions, and systems? Wouldn't it be great if we could just pluck data from the sky; heedless of where it might be, or how much of it, or of what kind? Small progress has been made though; as economy of scale and production would allow — solid-state drives (SSD) are maturing quickly and have gone from novel marketing ammunition to products that us real consumers might pick up and use in our daily lives. They are a threat to the traditional hard drives for sure, and form a product category to be taken seriously in the very near future. The only area SSDs lack today is storage capacity. Hard drive manufacturers are pushing storage capacities to the limits. Disk densities have gone up significantly. Today, a 2 TB drive is more or less common. One terabyte is affordable, with 500- and 640 GB drives becoming a bare minimum for any PC, even if you think you don't need it. And you do.

Portable storage is another area of progress, however small. Large amounts of data have to be moved easily and safely, and portable drives and external desktop storage drives fill that space and requirement. These have advanced and in many ways become generic in their performance and features, so much so that manufacturers aren't just focussing on connectivity and features anymore. Data security and backup is now the key focus. For modern networked homes with multiple computing devices and home-theatre systems, network-capable drives are a requirement as well. We've rounded up a bunch of these devices and put them to the test.

Photographed by: Manas Parekh

## 1.6 TB

The size of the largest SSD made by BitMICRO

## 100 GB

The data you can download in a day on a 10 Mbit line.

TRIED & TESTED

### Internal desktop hard drives

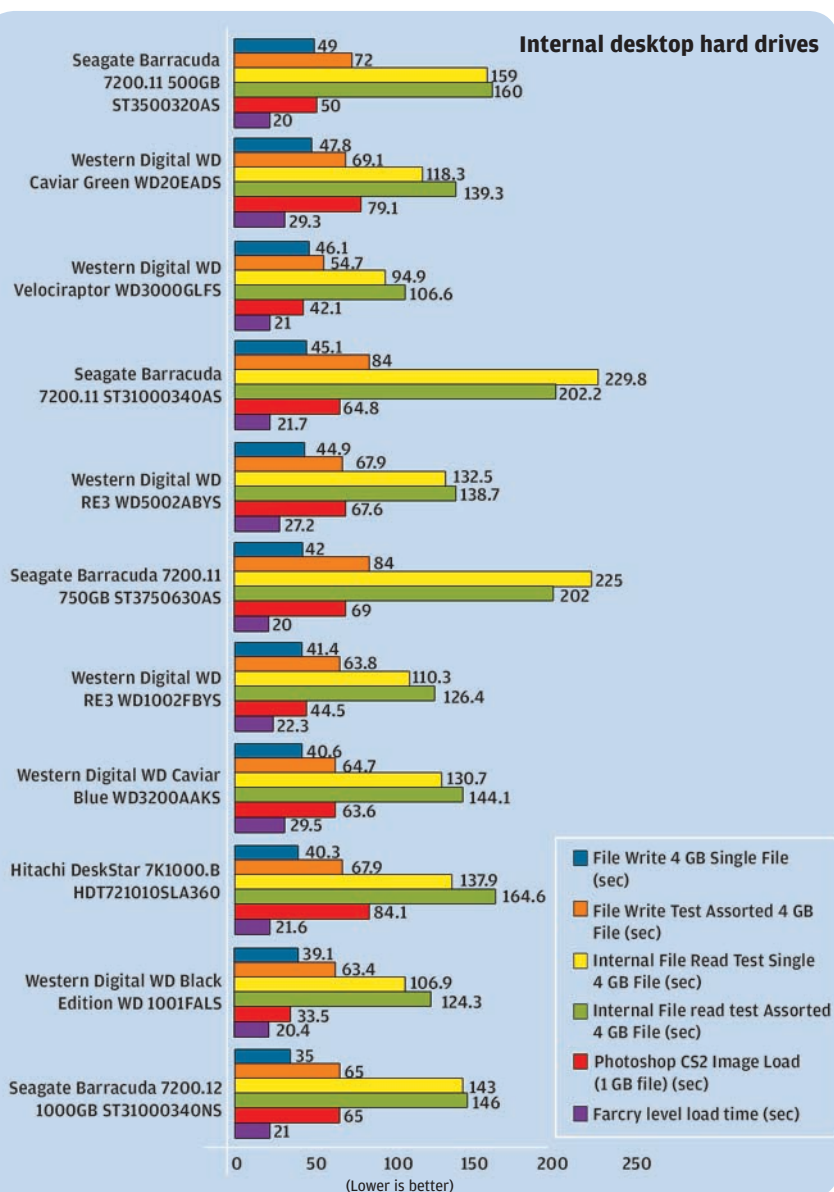
Internal hard drives are the driving force for the storage market. Hard drives are one of the cheapest ways of storing large amounts of data. With capacities soaring and prices plummeting, the cost of data storage keeps falling. This year, we received some 15 internal drives in this category with the largest being the WD Caviar Green 2 TB drive. The next largest capacity was that of the Seagate 7200.11 1.5 TB drive.

The expected winner in performance was the WD Velociraptor with a ridiculous overall score of 81.77. It's amazing to know that all this performance comes from a drive the size of a notebook hard drive with a heat-sink bolted atop for cooling, and that you can fix it in your computer case. Although not the fastest in sequential file writing speeds, the drive achieved most of its score through the assorted file write tests and the internal file transfer tests.



The other drives could only hope to compete with the Velociraptor in tests such as the *Far Cry* level loading run. The drive to load it the fastest was surprisingly the ones from the Seagate's 7200.11 series. The all new 7200.12 1 TB drive also matched Velociraptor's score at this test. It's also the same drive that scored a really high burst read speed of 482.6 Mbps.

Generally looking at the scores we got from the tests, it appears as if the Seagate



### How we tested

All the products were tested on a high-end configuration. A Gigabyte P45-based solution was used for the motherboard and the processor used was an Intel Core 2 Extreme QX9650. Four gigabytes of OCZ DDR2 Dominator memory was used. The operating system used was Windows XP and it ran on an Intel 80 GB Solid State Drive. A Western Digital Velociraptor was used alongside to dump data to, while read tests were performed on the test drive.

The first run of tests was the synthetic tests. These tests consisted of HDtch with 8 MB and 32 MB zones. SiSoft Sandra's disk performance benchmarks were also used. Write and read tests along with the access response time tests were run to get statistics for the drives. The weights in the overall scorings for these benchmarks used were lowered.

It's seen in the past with many tests and it's no different for hard drives: Good synthetic test results don't always translate to great performance in every application. Higher importance was given to the real-world tests instead. These tests consisted of simple file copy operations. A set of four gigabyte file and a folder with four gigabytes of data consisting of smaller files were used.

Two equally sized NTFS partitions were created on the test drive and files were copied to the partition. The internal file copy test included copying the same set of files from one partition to another. Photoshop was setup to use the test hard drive's partition as a scratch disk to dump temporary files. A 1 GB file from the same partition was opened and times recorded. For internal drives, *Far Cry* was installed on the test disk and the first level's load times were recorded.

For external drives, a read test was used where files from the external disk were copied to the WD Velociraptor. For the sake of fairness, all the external drives were rated with scores recorded over the USB interface. All the drives were put through the real-world tests using all other connectivity options available, which included Firewire and eSATA. The scores are displayed in the table at the end of the test for your reference.

Network storage drives were tested by copying the same set of data files used for the other disk drives over an isolated network to the network drive.





## storage test

Did you know that some notebook drives consume under 3 W of power?

### Network storage solutions

Network Access Storage devices come in various storage capacities and look similar to external desktop hard drives. The network connectivity isn't the only added component. Many of them come with features for streaming media and downloading files directly from the Internet. We got two such products – the WD My Book World Edition and the Iomega StorCenter ix2.

The Iomega network drive is compact and built like a tank. On the other hand, WD's My Book World Edition has gone with the classy look. The StorCenter ix2 has two external USB ports for expansion. The WD MyBook only comes with one.

Setting up these drives was not that much of a problem but might require some tweaking on your part to get it working with your network. Software was provided with both to simplify the process.

Both the network drives had remote access through a web inter-

	Western Digital MyBook World Ed	Iomega StorCenter ix2
4 GB File Write (sec)	496	689
4 GB File Read (sec)	478	450
4 GB Assorted Write (sec)	539	682
4 GB Assorted Read (sec)	518	509

face. The WD interface had a better looking interface than the Iomega. When it comes to features, the Iomega has slightly more to offer. Both the drives included user accounts, backup & recovery tools, remote access and media servers. The Iomega offers additional features such as printer setup, video surveillance as well as a BitTorrent downloader, where you can directly download your BitTorrent files into the drive. This is a big plus for the Iomega drive. It's absolutely amazing for those who want to download but don't want to keep a power-hogging PC running all day and night.

We tested the performance of this drive by transferring 4 GB of sequential as well as assorted data and noted down the read and write times. The WD drive was faster than the Iomega and gave us read as well as write times not exceeding nine minutes. Write times for the Iomega drive went up to 12 minutes.

Overall, the WD performed slightly better than the Iomega, the feature-set of the Iomega ix2 was more attractive. The Iomega ix2 is far more expensive at Rs. 23,000 than the WD MyBook World Edition which was priced at around Rs. 13,000.



TRIED & TESTED

drives favoured the application loading tests whereas most of the Western Digital drives excelled at large capacity file transfers. Hitachi did well at the write tests, but was left behind when it came to the Photoshop file loading test.

If you're looking for a drive that you can use to run your operating system on, and cheap, then the slightly older WD Caviar Blue 3200AAKS is a good option. It doesn't match up to the scorching pace of the new drives; but priced at Rs. 4,000, it makes for a very good option. If you need a little more space, then the 500 GB Seagate 7200.11 should suit you better. It's almost the same as the WD 3200AAKS.

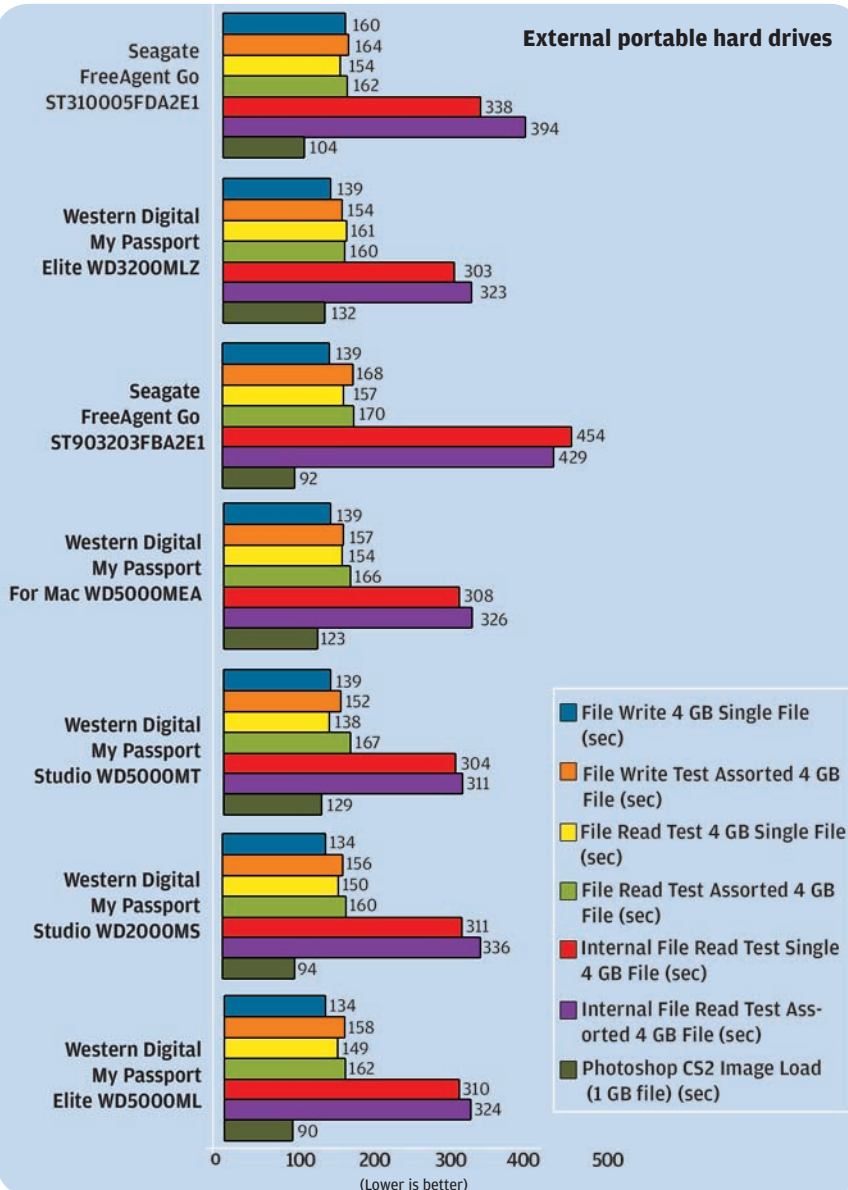
While the Velociraptor takes the throne for the fastest drive in the test, the one ranked after it is *better value-for-money*. The WD Black Edition 1-TB drive gives excellent performance and space unlike the 300 GB Velociraptor, for far less.

### External portable hard drives

Of the seven portable drives we received, two were from Seagate. Unlike the desktop drives, where power-saving and reliability made up the different series offered, portable drives had no such classifications. All the portable drives performed similar to each other. It was only the Seagate FreeAgent Go that scored poorly in the internal file copy tests.

If design and appearance matters, then Seagate's drives look appealing. WD drives generally look alike, but they come in sober colours.

Western Digital's Studio line of drives came with a Firewire connectivity option. This didn't greatly enhance performance for most of the tests as expected, but there were a few improvements seen in the Photoshop file loading test. The WD's My Passport series enjoyed a tiny edge over the Seagate's FreeAgent Go lineup, but the price difference between the WD drives isn't justified if you're looking for performance. The WD My Passport Studio 250 GB makes the most



TATA unveils plans to provide 100Mbps Internet connections

Seagate's first hard drive was the 5 MB ST-506 released in 1980

sense if you're looking at performance and don't have to move large amount of data around. Although it's not a very large capacity drive, it performs almost as good as any other new WD drive in this test, but at a fraction of the cost. If you are still chasing performance, then the top performer in this section is the WD My Passport Elite 500 GB, but just by a marginal difference.

### External desktop hard drives

For those who need to periodically backup huge amounts of data, a portable solution just won't do. The capacities are too small and the performance simply isn't there. An external storage solution through its abundance of configurations and sizes is sure to serve such a user.

The Western Digital My Book Mirror Edition comes with two 1 TB hard drives in a RAID configuration. Data is replicated on drives, so if a drive fails you always have a backup. The only downside is that you get to use only 1 TB. With an MRP of Rs. 31,500, it's also very expensive. The other problem with two big drives in a single chassis is the weight. We didn't really like the quality of the large-sized Western Digital drives: their outer shell was a little thin and did not inspire the confidence to be carried around.

Just like we did with the portable drives, we ran benchmarks using Firewire and USB. eSATA was the other connectivity option available in this category. While a Firewire port made a difference in most of the benchmarks, eSATA really opened the floodgates.

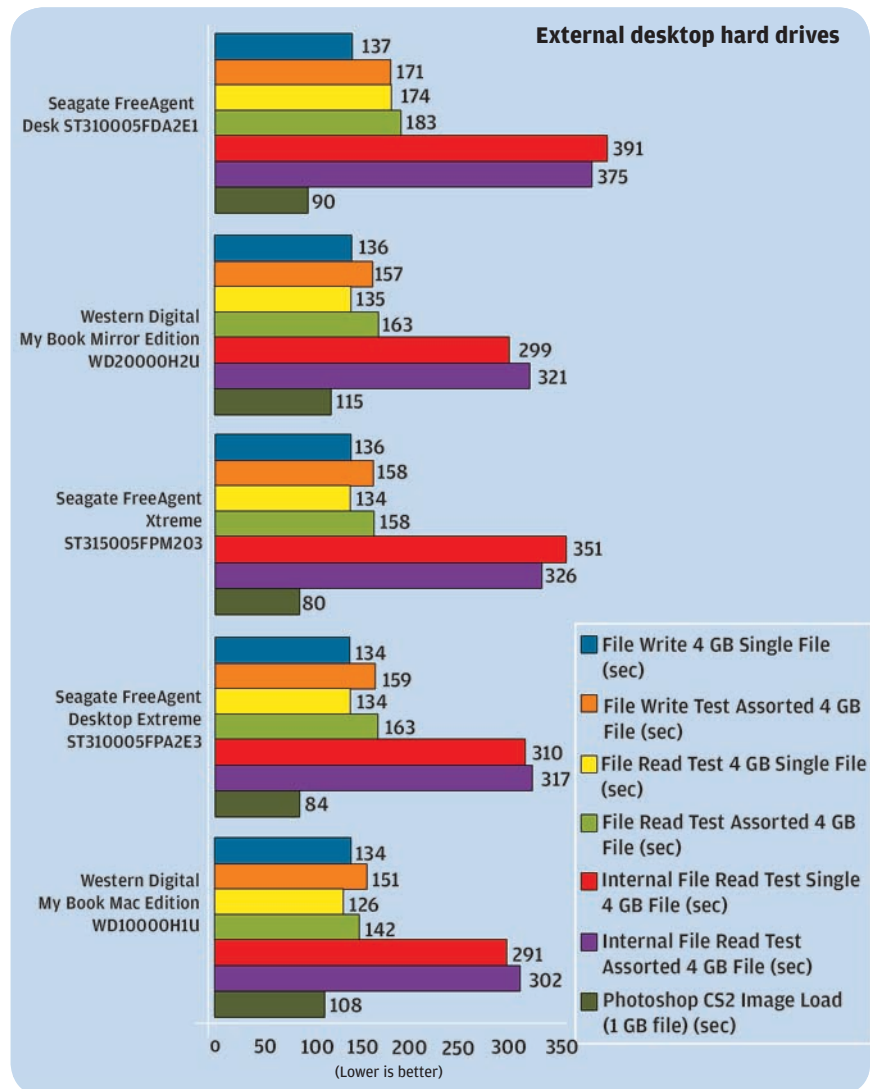
All the drives performed exceptionally well, but the Western Digital My Book Studio Edition II 2 TB drive flew through the majority of the tests.

The Xtreme series from Seagate came with eSATA and Firewire features, but if capacity is your prime concern, the 1TB FreeAgent Desk is the one you need. Its price also makes excellent value for money.

We found that the fastest USB drive was the 1-TB Western Digital My Book Mac Edition. Again, the limitation was the bandwidth provided by USB and most of the USB drives ranked close to each other.

We can conclude through this test that with rising capacities, there's an equal improvement in performance. Today, not everybody buys a drive for its performance and even if they do, one is mainly to store movies and games. For that kind of user, a power-efficient smart drive is required. Internet connection speeds have shot up and there can never be enough space. To give you an idea of how far drives have progressed, if this was the late 90s, an entire disk would be easily exhausted in a day. ■

rossi.fernandes@thinkdigit.com



### Decision maker

#### Internal drives

Best 1 Terabyte drive	Seagate Barracuda 7200.12 1 TB
Best 2 Terabyte drive	WD Caviar Green 2 TB
Best 750 GB drive	Seagate Barracuda 7200.11 750GB
Best performer under Rs. 4,000	Western Digital Caviar WD3200AAKS or Seagate Barracuda 7200.11 500 GB

#### Portable Drives

Best 500 GB performer	Western Digital My Passport Elite 500 GB
Best Value for money	Western Digital My Passport Studio 250 GB

#### External Desktop Drives

Fastest drive (eSATA)	Western Digital My Book Studio Edition II 2 TB
Fastest drive (USB)	Western Digital My Book Studio Edition II 2 TB
Secure data storage	Western Digital My Book Mirror Edition

### Contact Sheet

#### Hard Drive Comparison Test

Brand	Contact	Phone	E-mail address	Web-site
Hitachi	Cyberstar Infocom Pvt Ltd	+91-99725 80114	lalit.sudrik@cyberstarindia.com	www.hitachigst.com
Iomega	Iomega Corporation	+91-98410 22940	baskaran@iomega.com	www.iomega.com
Seagate	Fortune Marketing	+91-11-2641 4468	sales@fortune-it.com	www.seagate.com
Western Digital	Amarjeet Singh	+91-93210 29204	amarjeet.singh@wdc.com	www.wdc.com





## storage test

OCZ demonstrates a 1 Terabyte SSD called the Z-Drive that slots into a PCI-Express slot



### Desktop Hard Drives

Brand	Hitachi	Seagate	Seagate	Seagate	Seagate	Seagate
Model Name	DeskStar 7K1000.B	Barracuda 7200.11	Barracuda 7200.11	Barracuda 7200.11	Barracuda 7200.11	Barracuda 7200.12
Model Number	HDT721010SLA360	ST31000340AS	ST31500341AS	ST3500320AS	ST3750630AS	ST31000340NS
Price (Rs)	Rs. 14,000	Rs. 5,800	Rs. 8,000	Rs. 3,500	Rs. 5,250	Rs. 6,100
Performance (Out of 100)	64.02	56.31	64.08	63.27	57.84	68.67
<b>Features</b>						
HDD capacity (GB)	931.51	931.51	1397.26	465.76	698.63	931.51
Capacity Per Platter (GB)	334	250	375	250	250	500
Number of Platters	3	4	4	2	3	2
Speed (RPM) / Buffer Size (MB)	7200 / 16	7200 / 32	7200 / 32	7200 / 32	7200 / 32	7200 / 32
<b>Performance</b>						
<b>HDTach 8 MB / 32 MB Zone</b>						
Average Read (MBps)	95 / 94.9	82.8 / NA	108.4 / 107.8	92.6 / 91.8	87.3 / 86.7	106.5 / 106.4
Average Write (MBps)	79.4 / 90.3	62.4 / NA	71.3 / 95.2	NA / NA	NA / NA	NA / NA
CPU Utilisation (%)	2 / 2	2 / NA	2 / 2	2 / 2	2 / 1	2 / 2
Random Access Time (ms)	12.9 / 13.1	12.9 / NA	15.3 / 15.6	14.8 / 14.8	12.6 / 12.6	13.9 / 14
Read Burst Speed (MBps)	262.9 / 262.6	249.9 / NA	247.8 / 251.2	247.2 / 245.8	135 / 134.8	481.2 / 482.6
<b>SiSoft Sandra 2008</b>						
Drive Index, Read (MBps) / Access time (ms)	90.24 / 14	80.12 / 13	102.34 / 15	87.32 / 14	83.21 / 13	100.69 / 14
Drive Index, Write (MBps) / Access time (ms)	68.04 / 6	64.67 / 7	86.59 / 7	NA / NA	NA / NA	NA / NA
<b>Real World Tests (sec)</b>						
4 GB File Write (Sequential / Assorted)	40.3 / 67.9	45.1 / 84	46.6 / 69.9	49 / 72	42 / 84	35 / 65
4 GB File Copy (Seq / Assorted)	137.9 / 164.6	229.8 / 202.2	150.9 / 153.3	159 / 160	225 / 202	143 / 146
Photoshop Image Load (sec)	84.1	64.8	69.7	50	69	65
Farcry level load time (sec)	21.6	21.7	20.4	20	20	21



### External Portable Drives

**BEST BUY**  
**digit**  
APRIL 2009

Brand	Seagate	Seagate	Western Digital	Western Digital	Western Digital	Western Digital	Western Digital
Model Name	FreeAgent Go	FreeAgent Go	My Passport Elite	My Passport Elite	My Passport For Mac	My Passport Studio	My Passport Studio
Model Number	ST903203FBA2E1	ST905003FAA2E1	WD3200MLZ	WD5000ML	WD5000MEA	WD2000MS	WD5000MT
							
Price (Rs)	Rs. 4,550	Rs. 7,900	Rs. 10,350	Rs. 12,150	Rs. 9,000	Rs. 5,000	Rs. 12,500
Performance (Out of 100)	75.00	77.78	83.43	85.86	83.63	83.73	84.08
<b>Features</b>							
HDD capacity (GB)	298.09	465.76	298.09	465.76	465.76	232.88	465.76
Interface	USB	USB	USB	USB	USB	USB / FW	USB / FW
<b>Performance</b>							
<b>HDTach 8MB / 32MB Zone</b>							
Average Read (MBps)	32 / 31.9	29.9 / 30.2	34.6 / 34.9	34.8 / 35	33.9 / 36.1	34.3 / 34.7	34.8 / 35.8
Average Write (MBps)	26.4 / 30.4	25.6 / 27.1	28.9 / 31.4	28 / 30.8	27.7 / 30.9	27.7 / 30.8	28 / 30.9
CPU Utilisation (%)	5 / 4	1 / 2	5 / 1	4 / 4	1 / 3	5 / 4	4 / 5
Random Access Time (ms)	22.6 / 22.5	21.9 / 21	16.8 / 16.8	17 / 16.8	17.1 / 16.5	17.1 / 17.1	16.8 / 16.5
Read Burst Speed (MBps)	32.9 / 33	32 / 31.9	37.9 / 38	38 / 37.9	36.4 / 37.8	35.2 / 35.5	36.8 / 37.6
<b>SiSoft Sandra 2008</b>							
Drive Index (Read) / Access Time (ms)	30.53 / 20	28.68 / 21	32.51 / 14	32.35 / 13	33.67 / 14	32.29 / 18	31.85 / 13
Drive Index (Write) / Access Time (ms)	30.54 / 12	27.72 / 4	29.44 / 1	29.05 / 1	28.88 / 1	28.77 / 5	29.05 / 1
<b>Real World Tests (sec)</b>							
4GB File Write (Sequential / Assorted)	139 / 168	160 / 164	139.9 / 154.2	134 / 158	139 / 157	134 / 156	139 / 152
4GB File Read (Sequential / Assorted)	157 / 170	154 / 162	161 / 160.9	149 / 162	154 / 166	150 / 160	138 / 167
Internal File Copy (Sequential / Assorted)	454 / 429	338 / 394	303.5 / 323.5	310 / 324	308 / 326	311 / 336	304 / 311
Photoshop Image Load(sec)	92	104	132.2	90	123	94	129

Hitachi recently acquired Fabrik  
– an external storage solutions  
provider

## IcePack

The name given to the metal housing  
for the WD Velociraptor

TRIED & TESTED



Western Digital	Western Digital	Western Digital	Western Digital	Western Digital	Western Digital	Western Digital	Western Digital	Western Digital
WD Black Edition	WD Caviar Blue	WD Caviar Green	WD Caviar RE2	WD RE2 GP	WD RE3	WD RE3	WD RE3	WD Velociraptor
WD 1001FALS	WD3200AAKS	WD20EADS	WD5000YS	WD1000FYPS	WD1002FBYS	WD5002ABYS	WD3000GLFS	
Rs. 11,700	Rs. 4,000	Rs. 14,950	Rs. 6,000	Rs. 17,000	Rs. 12,450	Rs. 6,000	Rs. 16,500	
77.34	63.55	60.78	46.64	46.80	70.94	64.35	81.77	
931.51	298.09	1863.02	465.76	931.51	931.51	465.76	274.46	
334	320	500	125	250	334	NA	150	
3	1	4	4	4	2	NA	2	
7200 / 32	7200 / 16	7200 / 32	7200 / 16	7200 / 16	7200 / 32	7200 / 16	10000 / 16	
91.9 / 91.9	92.6 / 92.7	81.5 / 80.8	61.2 / 62.1	63.2 / 64.2	93.9 / 94.3	87.9 / 87.8	106.5 / 105.8	
63.9 / 82	64.7 / 84.2	54.5 / 71.1	50.7 / 57.7	32.1 / 59.2	NA / NA	63.4 / 80.6	79.3 / 97.6	
2 / 2	2 / 2	2 / 1	1 / 2	2 / 1	2 / 2	1 / 1	2 / 1	
12.7 / 12.4	16.4 / 16.4	17.2 / 17.1	13.3 / 13.4	15.4 / 14.7	12.3 / 12.3	11.8 / 11.8	7.2 / 7.2	
231.1 / 233	236.2 / 240.6	241.9 / 237.8	193 / 191.5	222.2 / 217.9	230.1 / 233.8	234.3 / 234.1	256.5 / 257	
86.3 / 13	86.81 / 16	75.77 / 17	58.22 / 14	60.72 / 15	88.41 / 13	83.35 / 12	99.46 / 7	
77.9 / 5	73.64 / 4	69.21 / 6	55.62 / 5	56.64 / 6	NA / NA	73.07 / 3	97.84 / 1	
39.1 / 63.4	40.6 / 64.7	47.8 / 69.1	65.4 / 94.7	75 / 106	41.4 / 63.8	44.9 / 67.9	46.1 / 54.7	
106.9 / 124.3	130.7 / 144.1	118.3 / 139.3	214 / 204.6	156 / 252	110.3 / 126.4	132.5 / 138.7	94.9 / 106.6	
33.5	63.6	79.1	97	82.6	44.5	67.6	42.1	
20.4	29.5	29.3	31.4	29.2	22.3	27.2	21	



### External Desktop Drives

Seagate	Seagate	Seagate	Western Digital	Western Digital	Western Digital	Western Digital
FreeAgent Xtreme	FreeAgent Desk	FreeAgent Desktop Extreme	My Book Mac Edition	My Book Mirror Edition	My Book Studio Edition	My Book Studio Edition II
ST315005FPM203	ST310005FDA2E1	ST310005FPA2E3	WD10000H1U	WD20000H2U	WD10000H1Q	WD20000H2Q
Rs. 14,500	Rs. 7,500	Rs. 10,500	Rs. 16,000	Rs. 31,500	Rs. 16,500	Rs. 23,550
82.47	73.80	80.58	84.59	79.96	83.03	83.28
1397.26	931.51	931.51	931.51	931.51	931.51	1863.01
USB / FW / eSATA	USB	USB / FW / eSATA	USB	USB	USB / FW / eSATA	USB / FW / eSATA
34.5 / 34.6	32.5 / 30.9	34.5 / 34.7	35.5 / 35.6	34.8 / 34.1	34.4 / 34.7	34.3 / 34.7
28.4 / 31.3	27.7 / 32.5	28.4 / 31.3	28.5 / 31.1	25 / 29.3	26.6 / 30.9	25.9 / 30.2
1 / 1	4 / 2	2 / 2	2 / 4	2 / 2	3 / 4	3 / 4
16 / 15.8	12.8 / 12.7	13 / 13	14.6 / 14.7	16.2 / 16.3	15.2 / 15.2	20.1 / 19.5
36.1 / 35.2	35.3 / 34.1	35.5 / 36.1	37.8 / 37.5	37.6 / 37.7	35.3 / 35.4	35.6 / 35.3
33.1 / 17	30.21 / 12	33.82 / 13	34.12 / 9	32.11 / 14	32.9 / 16	32.16 / 22
30.81 / 7	30.55 / 4	30.97 / 4	29.89 / 1	29.15 / 1	29.6 / 1	28.43 / 1
136 / 158	137 / 171	134 / 159	134 / 151	136 / 157	134 / 154	135 / 150
134 / 158	174 / 183	134 / 163	126 / 142	135 / 163	151 / 156	131 / 158
351 / 326	391 / 375	358 / 348	291 / 302	299 / 321	291 / 304	310 / 317
80	90	84	108	115	80	76





bazaar

## Burn faster

Sony has launched the world's fastest 24x DVD burner in India

## Sony Vaio P VGN-P15G

### Portability at a price

The Sony Vaio P could be considered a netbook as it is the smallest and lightest 8-inch display laptop available. It is definitely smaller than any other netbook and you could actually believe those advertisements that you see with it fitting a rear pocket. We received the black colour Vaio P and the top and bottom of it are in a glossy black colour. On the left side of the laptop is a charging port, a USB port and a 3.5-mm headphone jack. On the right side, is another USB port and an extension port. By connecting this extender to the port you can now get two additional ports – a VGA-out port and an Ethernet port. The front of the device has two card reader slots, one for SD and the other for MS Pro Duo memory cards and a Wi-Fi ON/OFF switch. The front is also where the power slider is found, and unlike a simple button, Sony has used a slider similar to that on its PSP.

When you open the lid of the Vaio P you are greeted with a glossy display and a full QWERTY keyboard in silver. This notebook does not have a trackpad as it would have increased the size. Instead, Sony has gone the trackpoint way and has done a pretty good job with the trackpoint that is provided. You can also use the trackpoint with mouse click functions. The keyboard is slightly recessed and has smaller keys, but is very well designed as there is also

spacing between the keys. The edge of the notebook is where the actual mouse buttons are present. A slight flaw we noticed is that when you are typing something and hit the Spacebar, you tend also to hit the mouse buttons.

The native resolution of this screen is quite odd – 1600x768. Using such a high resolution on a small screen means the text will be very tiny and you will need to strain your eyes for these tasks. The display is definitely bright, but the viewing angles of this notebook are just bad. The screen gets totally washed by viewing it from any angle other than straight in front of you.

It did not match up to any of the other netbooks that we have tested and forget about playing any games on this at all. The only good thing when it comes to performance is the 64 GB SSD that it comes with, as the scores in that category were very high.

One thing to be noted is that the base of the Vaio P gets exceptionally hot while charging and also during usage, which we feel is definitely not a good thing.

The Vaio P can't be used for business, nor for gaming. The only option left is for movies, but there is no optical drive and you also have to consider bad viewing angles. This netbook is just average and



really is nothing but a style statement. Nevertheless, it is a lot smaller than any other netbook, so that is a bonus.

#### Specifications:

Dimensions (W x H x D) – 245 x 19.8 x 120 mm, Weight: 594 g, Processor: Intel Atom Processor Z530 (1.60 GHz, HT Technology supported), 2 GB DDR2 SDRAM, 64 GB SSD.

#### Ratings

Features: 6.5  
Performance: 6  
Build quality: 6.5  
Value for money: 6  
Overall: 6

Contact: Sony India Pvt Ltd  
Phone: 1800-11-11-88  
Email: [sonyindia.care@ap.sony.com](mailto:sonyindia.care@ap.sony.com)  
Web site: [www.sony.co.in](http://www.sony.co.in)  
Price: Rs. 64,990

## Zotac GeForce 8200 ITX

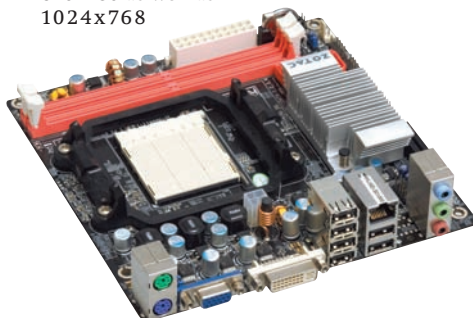
### Where size doesn't matter

The new ZOTAC GeForce 8200 we've received is a much more compact ITX version of the ZOTAC GeForce 8200 ATX form factor. This board is aimed towards an all-round entertainment system rather than a hard core gaming rig. Performance shouldn't be affected by its size.

On unpacking, you are presented with quite a well laid out board, of which the AM2+ socket takes up most of the space. There will be a problem for those of you who want to install large CPU coolers, as the memory DIMMs are pretty close to the CPU socket and might get in the way. The 24-pin power connector is located behind the orange memory slots and the 4-pin power connector is on the right side of the CPU socket. There are four SATA ports on this motherboard, but an IDE socket is missing. This motherboard comes with a PCIe x1 slot as the only expansion slot, though a x16 slot would have been a great addition. A Wi-Fi kit is also included with this board.

There is no HDMI port, which is a must have if you want to build an HTPC. An HDMI connection bundles audio and video into a single cable reducing the cluster caused by multiple cables. The workaround from ZOTAC, a DVI-to-HDMI converter, is bundled with the board. Another thing this board lacks is a Digital/SPDIF out.

The performance of this motherboard is almost on a par with the Zotac 8300 ATX, with scores almost matching in the SiSoft Sandra test and even giving good FPS when we tested Doom 3 and FarCry with 640x480 as well as 1024x768



settings. The main drawback we see with this board is a missing PCIe x16 slot. But it will be great for those of you who are thinking of building an HTPC. At Rs. 5,900 it is a good buy and will give you value for your money.

#### Specifications:

Board size: 170mm x 170mm mini-ITX form factor, Chipset: NVIDIA GeForce 8200, Memory: 2 DIMM slots upto 8 GB memory.

#### Ratings

Features: 8  
Performance: 7  
Build quality: 8  
Value for money: 7.5  
Overall: 7.5

Contact: ZOTAC International (MCO) Ltd.  
Phone: +91-11-4666 5666  
Email: [sales@zotac.com](mailto:sales@zotac.com)  
Web site: [www.zotac.com](http://www.zotac.com)  
Price: Rs. 5900

Rumours are on about imminent price cuts to Intel CPUs

Corsair, a brand known for its memory products has now entered the PC chassis market

## Nokia 5800 XpressMusic

### Touch me not

The Nokia 5800 XpressMusic is the latest addition to the range of Nokia XpressMusic phones; this time it is a full touch screen phone.

The phone that we received was the red model, and this is not a light red but a very dark red with a thin outline of translucent red towards the back of the phone. The back cover of the phone is a mix of brown and red and sports a design of lines which first started with the Nokia N82/N78 phones.

There are three thin buttons on the front of the phone which are highlighted when on – green (Call Accept), white (Main Menu) and red (Call Reject). You need to put in some effort when using these buttons as they are slightly hard to push and quite thin. On one side of the phone you have the volume controls and the camera button as well as the screen lock slider; these button sizes are pretty decent and easy to use. This phone does not have the traditional key press combination of locking the screen, but instead you can just slide the small button on the side to either lock or unlock the screen. The other side of the phone has slots for the microSD and your SIM card. These slots actually look like buttons but can be lifted up to reveal the slots. Inserting the SIM card in is easy but to remove it you need to open the back cover, remove the battery and then use something to push the card out. This is only for the SIM card and not the memory card. The stylus for this phone is attached on the back cover. The loudspeaker is present towards the side of the phone.

Nokia has gone the resistive touch way which means that you cannot use the pads of your fingers but instead you have to use your fingertips to touch, and you also have to touch harder. Due to the resistive touch you could say that this phone is more in favour of the stylus rather than the free touch of the Apple iPhone/iPod Touch. The accelerometer of this phone is slow, so when you change the orientation the screen blacks out before coming back on again to give you the horizontal view. Also it rotates to the left and not all around. The touch games that come preloaded with the phone were not really fun. In one of the games, Touch Bounce, you have to run your finger on the screen to move forward and at times you actually tend to block the screen itself due to this. There is no N-Gage platform for the phone which would have been a great thing to have.

You will find the classic Nokia menus present on this phone, with a familiar layout and options; an additional menu is the XpressMusic touch button located above the display which acts as a quick launch menu for the multimedia options – Music, Gallery, Sharing, Video Center

(sic) and Web. This phone comes with only one preloaded theme, but this can be customized further and you can select from whichever buttons or contacts that you want to be displayed on the home screen to having a different wallpaper on that theme.

The camera is a 3.2 MP with a Carl Zeiss lens and a dual LED flash light. The camera has a good auto focus feature but takes only average quality photos.

There are a variety of choices when it comes to writing an SMS on this phone. You can choose from either the classic alphanumeric keypad, Mini QWERTY keypad, Full screen QWERTY or the new introduction from Nokia – handwriting, where you can use the stylus to write the message directly instead using button input. But this will not work out for everybody as the device only recognizes block capitals and not a cursive style of writing. However, a feature has been added where you can be trained to write for this phone. So, you

basically have to change your entire writing style to use this feature. There are also quick action buttons when you receive a message such as delete, forward and reply, so you don't have to open an extra menu to select from these.

Playing music on this touch screen, Symbian OS phone is quite a challenge. Scrolling through the list of songs is not accurate. You scroll too fast and you easily skip beyond where you want to stop. And to top it all, it doesn't even scroll smoothly, which is either an OS booboo or the phone's hardware is simply too slow. There is also a feature for creating a playlist on the phone itself, but we didn't enjoy doing this as if you create multiple playlists you have to go through a couple of menus to correctly select the playlist and browsing through the list of songs is not that impressive, as was mentioned earlier.

The call quality on the phone is good; we did not experience any disturbance or echoing during the call. But the speaker quality on the other hand is not that impressive even though it is loud. You can't really enjoy the music but for a quick share the loud speaker would be fine. There is a 3.5 mm headphone jack provided but surprisingly sound quality is not as good as expected, and definitely not good enough for a music phone.

This phone is definitely feature rich, but that's what you would expect from a phone based on the Symbian platform. Even so, this phone is still lacking the actual touch screen experience and paying Rs. 21,839 for a device that has a glaring flaw in the touch department is really not on. A keypad would give better value, but not remove the underlying shortcomings. As it is, the large screen is an attraction and it's a decent looking, feature-rich device – watch out for price drops in the next six months.

#### Specifications:

Dimensions: 111 x 51.7 x 15.5 mm, Weight: 109 g, Resolution: 640 x 360 pixels (nHD), aspect ratio 16:9, Micro-USB connector, 81 MB internal memory, 8GB microSD memory card in-box, expandable up to 16GB

#### Ratings

Features: 7  
Performance: 6  
Build quality: 7.5  
Value for money: 5.5  
Overall: 6.5

Contact: Nokia India Pvt. Ltd.  
Phone: +91-11-3030 3838  
Email: communications.india@nokia.com  
Web site: www.nokia.com  
Price: Rs. 21,839







## Intel Core i7 920

Fast just got a new name

Although we had tested Intel's fastest desktop processor, the i7 965 Extreme Edition earlier, there was little cause for excitement in the market. Priced at close to Rs. 55,000, this CPU is beyond the reach of most mortals and definitely not on 99 per cent of shoppers' lists. The i7 920 (reviewed here) on the other hand, represents decent value and is the entry level Nehalem CPU, boasting of nearly the same specifications as the top-of-the-line 965 Extreme Edition.

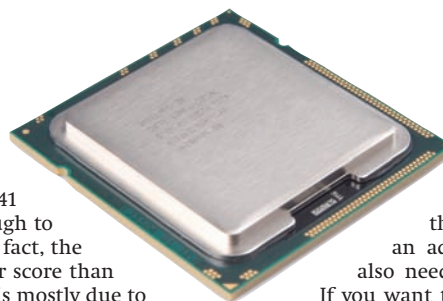
The Core i7 920 is based on the latest 45 nm fabrication process. The merits of the i7 architecture have been covered earlier, but the i7 920 features an integrated memory controller, an L3 cache, and HyperThreading. The Core i7 920 runs at a speed of 2.66 GHz with the L2 cache being 256 kB x 4 and an 8 MB shared L3 cache. In comparison, the leader of the Intel Core 2 Quad processors, the QX9770 runs at 3.2 GHz with a 6 MB x 2 L2 cache and no L3 cache.

We ran this processor through a series of synthetic and real world benchmark tests that stress the CPU. We used the ASUS P6T Deluxe motherboard, 3 x 1 GB of Kingston DDR3 RAM (1066 MHz) along with an ASUS EN GTX285 TOP. We have compared the outcome with the last CPU comparison test that we conducted which included the high-end Core 2 Quad processors - QX9770 and QX9650.

In PC Mark 05, the i7 920 gave us a CPU score of 8,741 which was not enough to beat the QX9770. In fact, the QX9650 had a better score than the i7 920. But this is mostly due to the higher clock speeds present on the two quad core CPUs, since PC Mark05 is not multi-threaded to the extent to take advantage of HyperThreading. In 3D Mark 06 the i7 920 gave us a great score, but again not enough to surpass the QX9770, though in this test it came very close to the QX9650. CineBench R10 is a great multi-threaded benchmark and it scales very well with the number of cores, whether physical or virtual. This benchmark gave us a result of 12,575 which is impressive, as it was neck and neck with the QX9770, which has a significant core speed advantage.

The i7 920 took 49 seconds to render the Chess scene in PovRay 3.7 which is good, but again 10 seconds slower than the QX9770. In Maya 8.0 also it was much faster than the QX9770. We used the DivX Encode and found that the i7 920 beat the QX9770 by about 50 seconds.

While the CPU is fast, a decent over-clocker and definitely future proof, remember that an upgrade to the i7 range means a change of socket to one of the Intel X58 based boards as well as expen-



sive DDR3 memory. Integrated graphics is also absent from the X58 series, therefore an additional graphics card also needs to be accounted for.

If you want to upgrade your processor and stick with your motherboard then it would be wiser to spend on the higher-end Core 2 Quad Intel processors, but if you are building a new PC and want the latest technology with future proofing in mind, then we would recommend this processor, as at Rs. 14,416 it represents the cheapest entry-point to the i7 architecture.

### Specifications:

Clock speed: 2.66 GHz, QPI Link Speed: 4.8 GT/s, Socket: LGA 1366, TDP: 130 W, L2 cache: 4 x 256 KB, L3 cache: 8 MB

### Ratings

Features: 9  
Performance: 8.5  
Value for money: 7.5  
Overall: 8

Contact: Intel India  
Phone: +91-80-2854 2105  
E-mail: apacsupport@mailbox.intel.com  
Web site: www.intel.com/in  
Price: Rs. 14,416

## Creative Zen X-Fi

Not One With The Universe

Creative has had its signature X-Fi technology in the Sound Blaster series of speakers and sound cards. Now it has decided to move this to its range of PMPs, with the Creative Zen X-Fi being one of them. We received the 8-GB version and we see here if it lives up to its name.

The X-Fi has a silver faux metallic back plate. The front of this PMP is piano black with the 2.5-inch screen towards the left, while all the controls are on the right-side of the device. The power and lock slider is located on the back, the top is where you find the microphone and the SD card slot.

Many PMPs don't come with expansion slots; but,

since this one has only 8 GB capacity, the expansion slot is a good idea. One side has the micro USB port and 3.5 mm jack and next to that is a small LED light which acts as a battery indicator, and along the same side is a Reset button. This PMP also comes with an inbuilt speaker which is located at the bottom.

The buttons on this device are somewhat unusual and unlike other PMPs, the X-Fi comes with nine buttons! Among these is a back button, the usual playback buttons, an options button and a shortcut button. The latter can be customised to give you quick access to a particular menu of your choice. There are additional menus and features that have been added to this player.

The Creative EP-830 earphones are good to use as they fit in the ear, thereby reducing the level of external noise that is heard. While listening to our test tracks with the supplied earphones we found that this PMP will be enjoyed by bass lovers as it's heavy on the lows; the mids are fine, but the highs need to be cleaner. Movies need to be converted by the

software provided. The viewing angles for the left, right and bottom are great, but the top angle is bad. If you tilt the player towards you then the appearance of the screen washes out.

Overall, we feel the X-Fi is a good PMP for audio, and although the screen is still too tiny to enjoy videos on it, it will do for occasional viewing.

### Specifications:

Dimensions (W x D x H): 3.3 in x 0.5 in x 2.2 in, Flash memory installed: 8 GB Integrated, Resolution: 320 x 240, Display size: 2.5 in

### Ratings

Features: 7.5  
Performance: 7  
Build quality: 7  
Value for money: 5.5  
Overall: 6

Contact: Creative  
Phone: +91-22-6451 0751  
E-mail: india.getcreative@ctl.creative.com  
Web site: www.asia.creative.com  
Price: Rs. 13,599



X58/P45/P43/P41 series of motherboards from GIGABYTE will now be equipped with Creative's Sound Blaster X-Fi technologies

NVIDIA's Ion platform uses the Intel Atom and their own GeForce 9400 graphic solution

TRIED & TESTED

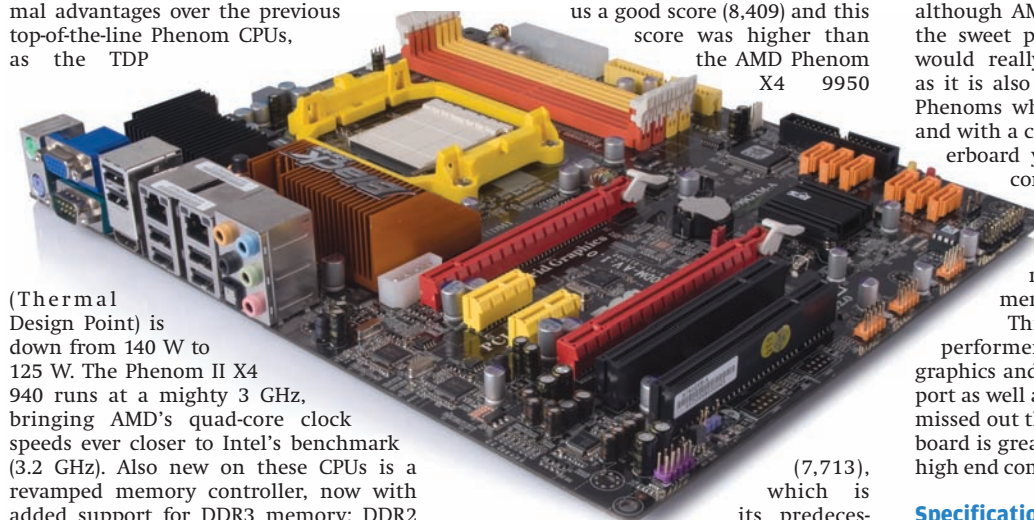
## AMD Phenom II X4 940 and ECS A790GXM-A

### Still Fighting On

The AMD X4 940 is the top-of-the-line Phenom II processor and the latest from AMD's stables. This CPU is based on its shiny new 45 nm fabrication process and represents a step up in terms of performance from its Phenom processor range. The Phenom II brings thermal advantages over the previous top-of-the-line Phenom CPUs, as the TDP

We used 2 x 2GB of Corsair Dominator memory (1,066 MHz) and an ASUS GTX285 TOP for the test. The ECS motherboard was also tested separately without the graphics card in order also to test its integrated graphics solution.

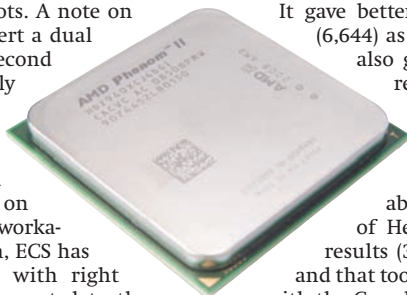
In PC Mark 05 the processor gave us a good score (8,409) and this score was higher than the AMD Phenom X4 9950



(Thermal Design Point) is down from 140 W to 125 W. The Phenom II X4 940 runs at a mighty 3 GHz, bringing AMD's quad-core clock speeds ever closer to Intel's benchmark (3.2 GHz). Also new on these CPUs is a revamped memory controller, now with added support for DDR3 memory; DDR2 support is still retained, therefore AMD has a compatibility advantage when compared to Intel's Nehalem. Another step up from the Phenom CPUs lies in the additional L3 cache which goes up from 2 MB to 6 MB. For reference the fastest Phenom processor in terms of clock speed was the X4 9950 clocked at 2.6 GHz.

The ECS A790GXM-A motherboard is part of its *Black Series* and is based on the 790GX chipset from AMD. The Northbridge, which is the AMD 790GX, is covered by a neat-looking copper heatsink while the Southbridge, the AMD SB750 is covered by a black aluminium heatsink. There is another black aluminium heat-sink present above the Northbridge, which takes care of cooling the MOSFETs around the CPU region.

This board also comes with two PCIe x16 slots and supports CrossFire. With a single card, obviously the slot runs at x16 speeds. There are also two PCI slots as well as two PCIe x1 slots. A note on the layout – if you insert a dual slot card into the second PCIe x16 slot it not only blocks a PCI slot but also the first two SATA ports as well as the small power and reset buttons present on the board. As a partial workaround for this problem, ECS has supplied SATA cables with right angled heads to be connected to the SATA ports.



(7,713), which is its predecessor. 3D Mark 06 showed us the same result in a higher score (3,958), but it was pretty close as the Phenom II was barely able to beat the X4 9950 which gave us 3,886. In Cinebench R10 the processor gave us a score of 9,555, which again did much better than the earlier Phenom with a score of 8,026. Similar results were obtained with PovRay 3.7, Maya 8.0, WinRar 3.8, DivX 6.8.0.19. In Doom 3 we obtained a score of 203.2 FPS as compared to 196 FPS from the X4 9950. The Phenom II was not able to beat the X4 9950 when it came to Company of Heroes, though. In mostly all of the benchmarks the Phenom II X4 940 outperformed the Phenom X4 9950.

When it comes to the ECS motherboard, in comparison to our last motherboard test (with integrated graphics), the ASUS Crosshair II Formula (based on a GeForce 780a SLI chipset) was the best performer, but this board did much better.

It gave better scores in PC Mark 05 (6,644) as well as SiSoft Sandra. It also gave us better results in real world DivX encoding as well as file transfer tests. Doom 3 at ultra settings and 1024x768 resolution gave us playable FPS (36.1). Company of Heroes gave us great FPS results (32.7) at 800x600 as well, and that too more than was obtained with the Crosshair II Formula.

This AMD Phenom II 940 is definitely

better than the old line of Phenom processors, but when you put them in comparison to a higher end Intel Core 2 Quad such as the Q9550 it can't compete. Therefore clock to clock AMD's architecture still falls behind Intel's Core architecture. The new Intel Nehalem CPUs are faster still, although AMD's main attraction remains the sweet pricing: Rs. 13,750. AMD fans would really appreciate the Phenom II as it is also more stable than the earlier Phenoms when it comes to overclocking, and with a combination of an AM2+ motherboard you would not need to do a complete overhaul of your PC, as you can retain the DDR2 RAM; this is definitely a plus considering the astronomical prices of good DDR3 memory.

This motherboard is a good performer for one with integrated graphics and it even comes with an HDMI port as well as the usual D-Sub port (DVI is missed out though). Priced at Rs. 7,875 this board is great for those wanting to build a high end computer with an AMD processor.

#### Specifications (Phenom II X4 940):

Clock speed: 3.0 GHz, HyperTransport Link: 3.6 GT/s, Socket: AM2+, TDP: 125 W, Total L2 cache: 2 MB, Total L3 cache: 6 MB

#### Specifications (ECS A790GXM-A):

Socket AM2+, North Bridge: AMD 790GX, South Bridge: AMD SB750, Graphics: AMD 790GX-based with ATI Radeon HD3300 graphics, 2 x PCI Express x16 slots, 2 x PCI Express x1 slots, 2 x PCI slots

#### Ratings for Phenom II X4 940

Features: 8.5  
Performance: 8  
Value for money: 8  
Overall: 8

Contact: AMD India  
Phone: +91-99307 60160  
E-mail: Fusion.india@amd.com  
Web site: www.amd.com  
Price: Rs. 13,750

#### Ratings for ECS A790GXM-A

Ratings  
Features: 7.5  
Performance: 8  
Build quality: 7  
Value for money: 8  
Overall: 7.5

Contact: SES Technologies Ltd  
Phone: +91-22-3086 2500  
E-mail: Jacques.roux@sesindia.com  
Web site: www.sesindia.com  
Price: Rs. 7,875





bazaar

G50V is a gaming notebook launched by ASUS and it comes with an Nvidia GeForce 9700M GT graphics processor

## OCZ NIA

### The Real Mind Game

What is the future of gaming? Can it evolve to an extent that it surpasses the use of a keyboard or mouse? These are the questions that the OCZ NIA that we have with us can answer. NIA is the acronym for Neural Impulse Actuator and is a device with advanced technology that claims to read your brainwaves and helps you improve your gameplay.

The NIA is a band that you put on your head with three diamond-shaped sensors on the front that come in contact with your forehead. This head band is attached to the NIA box that reads and interprets your brain activity which in turn is connected to the PC via a USB cable. The NIA also detects muscle movements such as clenching your teeth or raising an eyebrow, or even your glance. Alpha brain signals are associated to images and what you watch while beta brain signals kick in when you start to think logically.

The NIA does allow you to control your character's movement within a game, such as *Quake 3* or *Unreal Tournament*, without using the keyboard or mouse. However, it has its limitations as the technology is



fairly new. Instead, OCZ encourages the use of the NIA along with your keyboard and mouse to help increase your reaction time within the game that you play.

The software provided with the NIA is where you calibrate the device to your needs. The calibration section is mainly for muscle movements and is done by staring at a gyroscope displayed on the screen. The BrainFingers section is where you can view your alpha and beta signals and your glance activity. You will also be required to tweak your key presses in accordance with the different features of the NIA. You could set the movement of your character through glance, firing your weapon with muscle movement and maybe even reload the weapon through the alpha and beta signals. Again these settings will need to be worked on till you get the right combi-

nation. To test your settings, you can try out a simple game of Pong which comes along with the software.

Even after calibrating the NIA, do not expect immediate results as you will need to completely change the way you play before you see results. If you are an average gamer and just like to play for fun, this really might not be your cup of tea.

#### Requirements:

Windows XP & Vista (32 & 64 bit), 1 GHz CPU, 512 MB Memory, USB 2.0 Recommended.

#### Ratings

Features: 9  
Performance: 6  
Build quality: 8.5  
Value for money: 7.5  
Overall: 7.5

Contact: Tirupati Enterprises  
Phone: +91-93392 07519  
Email: mail@tirupati.net  
Web site: www.tirupati.net  
Price: Rs. 10,000

## ASUS ENGTX285 TOP

### Slightly overclocked TOP

ASUS is a company known to manufacture hardware that satisfy the craving needs of gamers and overclockers alike. We received an over-clocked version of the GeForce GTX 285 - the ASUS ENGTX285 TOP.

The ASUS GeForce ENGTX285 TOP's core runs at 670MHz, 22MHz faster than the stock. Also the memory clock is 116

MHz faster at 2600 MHz and the shader runs at 1550 MHz, making it 74 MHz faster than stock.

We benchmarked this card in DX10 with 4 GB of DDR2 RAM and an Intel QX9650 @ 3.0 Ghz and found that it managed to match up to the FPS in *F.E.A.R.*, in comparison to the ZOTAC over-clocked version. But

when it came to games such as *Company of Heroes*, *Doom 3*, *Unreal Tournament 3* and *Crysis* it fell short by a few. Lastly in *3D Mark Vantage* it did perform well and gave us a score of 14,675 with a GPU score of 12,065, but this too wasn't enough to beat the GTX 285 Amp!

The ASUS GTX 285 is very good and one of the fastest cards around but it doesn't beat any records here.

If you are a person who does look at faster clocks and are willing to spend only the same amount of money, then you need to look for another brand.



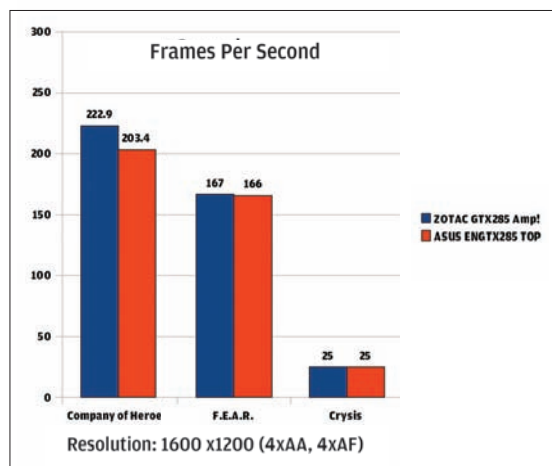
#### Specifications:

Engine clock: 670 MHz, Shader clock: 1.55 GHz, Memory clock: 2.6 GHz (1.3 GHz DDR3), Memory interface: 512-bit

#### Ratings

Features: 8  
Performance: 8  
Build quality: 8  
Value for money: 7  
Overall: 8

Contact: ASUS Technology Pvt. Ltd.  
Phone: +91-22-67668800 / 1-800-2090365  
Email: media.india@asus.com  
Web site: www.asus.in  
Price: Rs. 29,650



Samsung has released the world's first 16 GB DDR3 memory modules

Intel will phase out the well-received Intel Core 2 Quad Q6600 in the second quarter of 2009

## GLACIALTECH CPU Cooler UFO V51

### Invasion of the Cooling kind

There are many who are happy with the stock coolers that come with their processor and there are those who keep CPU cooling in mind when building their computers. We have with us the GlacialTech UFO V51, which is a huge CPU cooler and measures 13.8 cm in height. Intel's stock cooler looks like a kid in front of this giant.

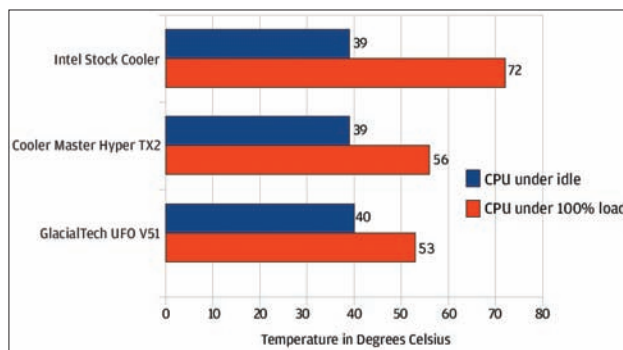
It has a unique design that vaguely resembles a UFO with an almost oval-shaped body floating above the base, hence the name. The base of this cooler is sturdy and made of aluminium with four heat

pipes embedded in it. There are two 92-mm fans located above and below the body of the cooler, the bottom fan sucks air while the top fan blows it out.

You can't mount this cooler in the conventional style, but instead you need to remove the motherboard and secure the mounting brackets at the front and back.

We tested the performance of this cooler by comparing the temperatures of the Intel QX9650 CPU under idle and 100% load with the Intel stock cooler and also with a Cooler Master Hyper TX2. The ambient temperature throughout the duration of our test was 25 degrees Celsius. The GlacialTech UFO V51 outperformed the other two when the CPU was under 100% load. The UFO managed to keep the Intel QX 9650 at 53 degrees Celsius under 100% CPU load, which is good but it just beat the Hyper TX 2 by 3 degrees.

You have to really consider a few things here if you want to buy this cooler, it is heavy – 780 grams and this weighs as much as most coolers with 120-mm fans. Due to the weight, when mounted in your cabinet, there is a big chance that this will place mechanical stress on your board. By compar-



ison, the Hyper TX2 weighs only 482 grams and the Intel stock cooler weighs even less reducing strain on your board.

#### Specifications:

Dimensions (mm): 130 × 157 × 138 mm (L x W x H), Weight: 780 grams

#### Ratings

Features: 6.5  
Performance: 6.5  
Build quality: 7.5  
Value for money: 6  
Overall: 6.5

Contact: GlacialTech Inc.  
Phone: +91-11-4052 5641/45  
Email: niranjan@amigointernational.biz  
Web site: www.glacialtech.com  
Price: Rs. 2,973

## Samsung CLX-3175FN/XIP

### Style with performance

Samsung has lately been churning out some really good office peripheral devices. A new addition to this line is the CLX-3175FN, a colour laser MFD.

This is a compact office MFD. An important feature is the Automatic Document Feeder. Connectivity is through the RJ45 port for a network, and two RJ11 fax ports. Setting up the printer is rather simple and the cartridges came preloaded in our case.

This device uses beeps and sounds to inform you when prints and copy orders are completed. Error beeps for events such as paper jams or empty paper tray are also present. These sounds could become irritating after a long period of time so Samsung has also included the ability to turn them off.

When you choose to scan, it gives you a list of options including where you want to scan (computer/USB device), either the local PC or even a PC connected to the network, and the folder into which you want to scan. The format of the image (JPEG, BMP, PDF, TIFF) along with other quality settings such as dpi and colour are selectable. To scan to a USB device, you just need to set the correct path in the provided software and your image will be scanned there.

The first print took about half a minute, followed by 13 sec printouts of our word document tests in both standard and economic mode. Our combi test, which is a mixture of text and colour, took under half a minute to print in both modes.

The only minor complaint was that the prints contained some white spots in the text prints. Ten prints took just over a minute while five copies took slightly over half a minute. The quality of the copies wasn't all that great but the performance was still very satisfactory.

We noticed different results of scan quality between the normal method of lifting the lid to access the flat-bed and by ADF, with the ADF scan adding an extra layer of yellow to the image. At 300 dpi the quality of the scanned images was average.

This printer is not very good at photo printing. Our photo test image had very visible pixelation and the colours were also pretty dull.

#### Specifications:

Dimensions: 415 x 373 x 342mm (W x D x H), Resolution: up to 2400 x 600dpi effective output, Scan resolution (Optical/Enhanced): up to 1200 x 1200dpi / up to 4800 x 4800dpi,



input capacity: 150 sheets, Memory: 128 MB

#### Ratings

Features: 8  
Performance: 7  
Build quality: 8  
Value for money: 6.5  
Overall: 7.5

Contact: Samsung India Electronics Pvt LTD  
Phone: +91-11-4151 1234  
Email: m.aditya@samsung.com  
Web site: www.samsung.com/in  
Price: Rs. 42,499





## Plantronics Voyager 855

### Bluetooth with a difference

The Plantronics Voyager 855 is slightly different from other Bluetooth devices out in the market as it gives you a choice, not only for which ear you want to use it on, but also whether you want to use it on only one ear or add the extension that comes with it and use it with both ears.

This device is pretty light and slim, and only 2.5 inches in length. It is black with a shiny silver lining on the outer part. When putting it on, there is a chrome line that is clearly visible and gives a good look to the device. It also has a slot where you can add the detachable ear clamp. Ear-clamps are provided for both ear plugs. This device charges via a mini-USB port located on the rear of the device. Volume control buttons are located on the top and the mute button right next to them. The main button on the face is used to answer calls. This button layout is well thought out and you can easily answer or mute a call when needed.

The main feature of this device is its retractable microphone which gives you a stylish way to answer calls. In case you

want to cut the call, you just need to slide the mic back up.

The Voyager's performance is mediocre when it comes to listening to music. As for call clarity, it is above average, but the range might be a slight problem. When we tested it, we found the range for good audible, non-distorted voice clarity is somewhere around four to five metres without any obstacles. If there were any obstructions, the range would drop even further.

A feature that is missing with this bluetooth device is that it can't be paired with more than one phone. This feature may not be considered important by many. For those two phones, it would have been a plus. When using the second ear clamp in stereo mode, you are forced to use the larger loop that comes with it and not everybody might be comfortable with this.

The Plantronics Voyager 855 is a good, light-weight headset with decent sound clarity, but at Rs. 6,799, it seems too pricey



for what it has to offer. If you need a bluetooth headset to sync with multiple devices then this is definitely not for you, but if you want something that is stylish and grabs people's attention, then this makes a good choice.

#### Specifications:

Size: 2.3 x 0.6 x 0.5 inches, Weight: 15 grams (with stereo plug-in cable)

#### Ratings

Features: 7  
Performance: 7.5  
Build quality: 7  
Value for money: 6  
Overall: 7

Contact: Rashi Peripherals Pvt.Ltd.  
Phone: +91-22-6709 0828  
Email: response@rptechindia.com  
Web site: www.rptechindia.com  
Price: Rs. 6,799

## Epson EMP DM1

### Theatre at home

Projectors are now going the home theatre way and are being made not only for businesses but also as a means of entertainment for the family. The Epson EMP DM1 is one such entry-level home theatre LCD projector that we received for testing.

Being an entry level projector, this has a native resolution of 854x480 and can support a maximum of 1280x1024 which is just a standard viewing resolution. With this resolution it is not ideal for 1080p.

The first thing you notice about this projector is that it has an integrated DVD player at the base which can also play DivX format. There is an eject button also located next to this. It comes with a white glossy finish and will fit right into your living room without a problem. There is also a handle on the side so you can carry it around. There is a manual shutter to protect the lens present on the top along with the few important controls that could fit on the projector such as power, source, play/pause, volume, etc.

The connections are located at the rear of the projector and these include VGA, Component-in and

Composite-in. There is also a Coaxial out and a USB port located where you can plug your flash drive, from which you can watch movies. There is no S-Video or HDMI port on this projector. An HDMI port is important as it removes the need for extra cables as both video and sound are carried in one.

The text displayed from the DM1 is not at all sharp and crisp, and although this is not meant for business purposes, even the occasional text files would not be enjoyed on this big a screen. We ran DisplayMate for this projector to adjust the brightness and contrast; once that was done we noticed that there is a problem with the primary colours for this projector. This was clearly seen towards the high intensity side of the 16 shade intensity test where the last two shades could not be distinguished. But in the case of blue the last three shades could not be distinguished. Cyan on Green was another noticeable colour flaw with this projector.

When we watched some movie clips and played a bit of Crysis with the DM1 we felt that the colours

were slightly on the warmer side, but the effect of playing on a big screen is really great. When watching movies, the overall experience was good, but at times the details are lacking.

Overall, this projector is just average; sure it has a DVD player, but the native resolution is just too low. The EMP DM1 is best used for popping in a DVD and playing, but if you want better quality and something with which you can project 1080p, then you should look elsewhere, as this just brings you the basics. Another option to look for is the reducing prices of LCD and Plasma TVs, which now also come with 1080p support.

#### Specifications:

Dimensions - 320 x 135 x 230 mm (W x H x D), Panel Size - 0.55" wide, Native Resolution: 854 x 480

#### Ratings

Features: 7  
Performance: 6  
Build quality: 7  
Value for money: 6  
Overall: 6

Contact: Epson India  
Phone: +91-80-3051 5000  
Email: emp@eid.epson.co.in  
Web site: www.epson.co.in  
Price: Rs. 59,000



Rumours of a Raedon HD 4890 in the making, to beat the new GTX series, are doing the rounds

Sony launches two new touchscreen cameras — the DSC-T90 and DSC-T900 which are capable of 720p video recording

TRIED & TESTED

## ASUS P6T Deluxe

### A well thought of X58 board

The ASUS P6T Deluxe is one of the first X58 motherboards from ASUS to support the new Core i7 processors. We got an Intel Core i7 965 Extreme and were really anxious to test and see how good is this board.

The layout of this board is good and just as a motherboard should be. You have six DIMM slots next to the LGA 1366 CPU socket alternatively highlighted with black and orange. The P6T supports up to 24 GB of DDR3 RAM. The CMOS battery is at the corner of the motherboard next to the DIMM slots and near that is a CPU over-volting jumper.

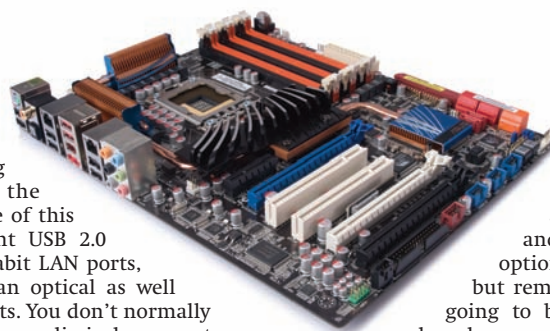
There are also six SATA ports that are positioned pretty nicely as to not interfere with the graphics card, and next to that are two SAS (Serial Attached SCSI) ports that can be connected in RAID with the Marvell 88E6320-TFJ2 controller. The SAS ports can be used for server hard drives and are easily distinguished as they are orange in colour. Even though this motherboard has three PCIe x16 slots, it supports only 2-way SLI as the second and third slot are too close to each other.

The northbridge heatsink has an interesting design and ASUS calls this Wind-Flow Thermal Design. The design of the northbridge heatsink is such that it acts as an air duct off the CPU heatsink. But that is only if you are using a top down heatsink and not others, such as heatpipe designs.

A few interesting things on the back-panel side of this board are eight USB 2.0 ports, two Gigabit LAN ports, FireWire and an optical as well as SPDIF outputs. You don't normally see both of these audio jacks present on the same board. There is also only a single PS2 port for those who still like the traditional mouse or keyboard.

The thing we like about ASUS boards is the micro switches that come along with it — one to power on/off and the other to reset and these are also present in the P6T Deluxe. Another small little catchy feature is the ASUS logo that's present on the southbridge; this lights up when powered on. It definitely will impress those with transparent side panels on their cabinets.

To test the performance of this board we used the Intel Core i7 965, 3 GB of Kingston DDR3 RAM (PC3 16000) and an ASUS GTX285 TOP. The results were very good. We got great scores in PC Mark 05, 3D Mark 06, Maxxon Cinebench and even with WinRAR. When it came down to games, it did great with Doom 3 and FarCry, but when it came to Crysis there wasn't a performance jump as we expected. Crysis gave us just about a playable FPS result in our benchmark which was similar to a good P45 board.



Overall, this board has a great layout and even has the option for 2-way SLI, but remember if you are going to buy this motherboard you will have to do a complete overhaul of your PC, as with the motherboard, you will need to purchase new RAM and a new processor. But if you are going to build a PC and want to go the Core i7 way then we would say go ahead and get this board.

#### Specifications:

Chipset - Intel X58 / ICH10R, RAM - 6 x DIMM, Max. 24 GB, 3 x PCIe 2.0 x16 (at x16/x16/x1 or x16/x8/x8 mode), 1 x PCIe x4, 2 x PCI

#### Ratings

Features: 8  
Performance: 8.5  
Build quality: 9  
Value for money: 6.5  
Overall: 8

Contact: ASUS Technology Pvt. Ltd.  
Phone: +91-22-6766 8800 / 1-800-2090365  
Email: media\_india@asus.com  
Web site: www.asus.in  
Price: Rs. 20,500

## Plustek SmartOffice PS286

### A speedy scanner

Most companies usually opt for MFDs rather than scanners these days as that single device does include scanning capabilities. However, the ones with good quality scanning come at a higher price. Plustek wants to show how good and fast scanning is possible on a compact scanner such as its SmartOffice PS286

The scanner is a third of the size of a typical MFD and is not a typical flatbed scanner, but looks more like a printer with a top loading tray. There is a



total of three buttons on this device, one to scan and two to scroll between the functions which are displayed with the numbers from 1 - 9 in between the buttons. Though this device is compact, it does have many features under its hood, but these are controlled by the software provided.

Options that are available are: scan and open, copy, email, file, OCR, scan and save and BCR which can be set from the software provided with the additional options of selecting the image output format, the dpi for which to scan and also the options for colour, greyscale and black and white. This slot-feeding type scanner has double-sided scanning which is something that will not be found with all MFDs.

For a single colour scan it took just 10 sec and under half of that for greyscale at 200 dpi; the image quality was not perfect, but definitely above average. A 600 dpi colour scan took a total of 40 sec, but for some reason the output was not that great and we noticed some yellow strips across the image. The scanner was noisier than

usual with these settings, as if it was stressing itself for this one scan. A duplex colour scan took less than half a minute which is really quick. The performance of this scanner is impressive, but a price tag of Rs. 25,000 for this scanner is not justified. It would be wiser to spend on an MFD which allows you to scan too.

#### Specifications:

Max. Resolutions: 600 dpi, ADF capacity: 50 sheets, Net Weight: 1.66 kg

#### Ratings

Features: 8  
Performance: 8  
Build quality: 8  
Value for money: 3  
Overall: 6.5

Contact: Fujisan Technologies Ltd  
Phone: +91-99875 67015  
Email: sales@fujisan.co.in  
Web site: www.fujisan.co.in  
Price: Rs. 25,000





# Workshop Art of Illusion

Rossi Fernandes

Computer graphics work has taken off in India, and in large numbers with institutes focussing on 3D modelling mushrooming. 3D modelling, and computer graphics software in general are expensive, but there are plenty of free open-source programs available that anyone can download from the internet.

One such program is Art of Illusion. It's a free download from [www.artofillusion.org](http://www.artofillusion.org). It runs on Java and you can use it on almost all operating systems with Java 1.4 or higher installed.

## The first glimpse

Art of Illusion isn't the best looking or even the most complex 3D modelling software around. The interface is similar to MS Paint, but the basic structure is like any other 3D modelling software.

The toolbar on the left has tools to create objects. The four windows in the centre are used to view the object from different angles. The pane on the right contains a list of all the objects created and Properties for the object currently selected. The pane at the bottom has the timeline for all the objects. This is used when animating objects in a scene.

## Navigating around the screen

The four views show the object or the scene you create from four angles. Each of these views can be changed by clicking on the drop-down menu on the top-left of each view, and then selecting the view you want from the list. It's a good idea to have a front, side and top view setup on three of the views. The last one should be a free-perspective view where the camera can be moved in any direction. You would normally use this view to render a scene.

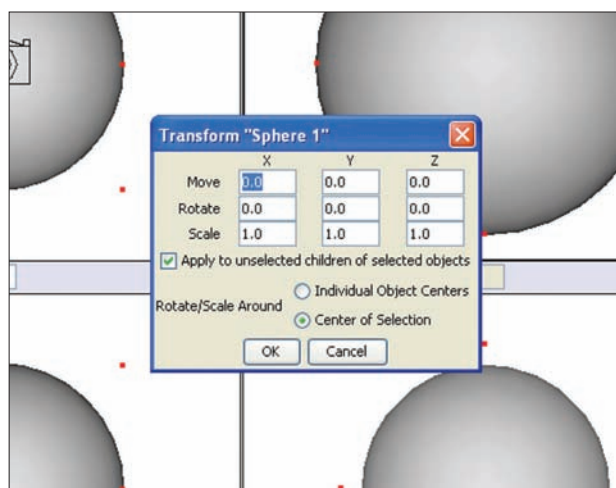
To pan the scene around, right-click and move the mouse. This moves the camera within two dimensions. Use the scroll to zoom in and out of the scene. Holding down the middle-click and moving the mouse will rotate the object in the centre. Left-clicking on an object just moves it around.

If you want to use a reference image in the background as a blueprint, then go to Scene > Set Template Image. Click on Browse, and select the file you want and click on Open.

## Free and simple: Art of Illusion is the ideal tool to start your training in 3D modelling

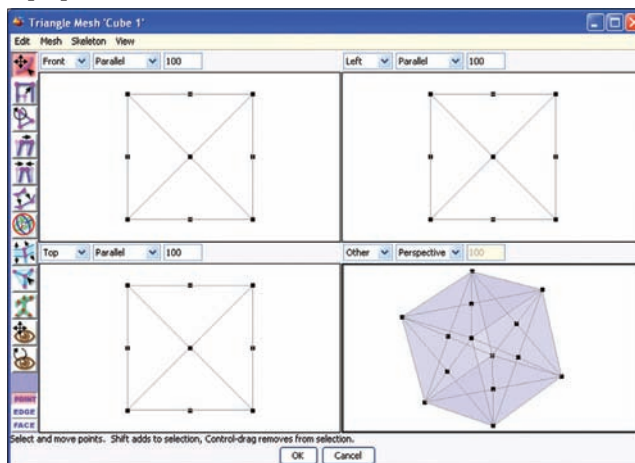
### Creating primitives

Primitives are the basic objects that you can create. These objects can then either be modified to form a new object, or a completely new object can be created from scratch. To create a primitive, click on the icon on the left toolbar and click on the viewport in which you want to create the object. You can also create a primitive by clicking on the Object menu and then Create Primitive and then the object of your choice.



Using the Transform feature to adjust object properties

All the created objects will show up on the right pane. These can be selected by clicking on the names. They can be moved using the mouse and the keyboard. The directional keys by themselves can move the object about. Holding the Control key along with the direction keys rotates the object. The object properties listed below also allows you to accurately position the object in the scene. Co-ordinates and angles must be keyed into the object properties area.



Switching to the Edit mode to modify the model

Similarly, models can also be scaled and rotated accurately. This feature can be accessed by clicking on **Object > Transform Object**.

## Modifying objects

Objects must be modified to be able to create anything meaningful. Modifying objects is complex in comparison to other 3D modelling software. Before the model is shaped, it must be converted into an editable object. To do this, first select the object, then click on **Object > Convert to Triangular Mesh**. Click OK. The tools are only accessible after double-clicking an object from the list on the right. The modelling is done in a different window altogether.

The window that opens has a similar layout to the main Art of Illusion program. There are four views and the toolbar is present on the right. This toolbar has many more tools to do with editing the selected object. Models can be modified and shaped mainly by moving the vertices, edges and planes around.

To switch to either mode, click on the **Point, Edge or Face** button on the bottom left of the window. Click on vertex, edge or face and move it around as you wish. You can have multiple selections by using the [Shift] key. Most modelling is done in this manner.

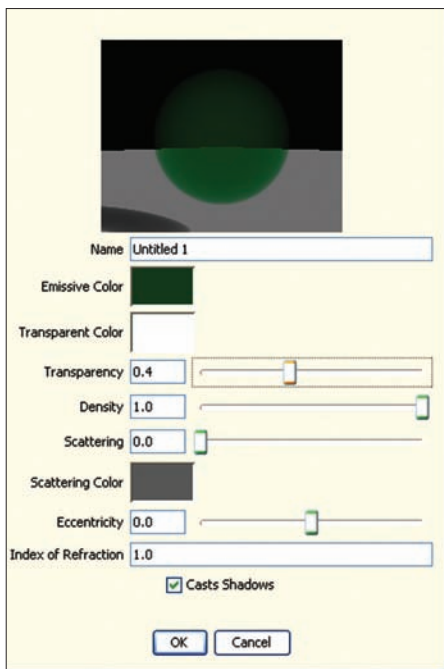
The tools provided are meant to help make modelling simpler, so you don't have to manually move each and every vertex or edge in place. Most of the tools are meant for moving elements in a symmetric manner. The other tools are for moving vertices along edges and also for bevelling and extruding planes. The extrude tool is particularly useful for starting with a simple object and extruding areas of it and adding detail to a model.

When all the modelling changes are completed, click on OK. Choose to save changes and the main window will be open again with the object updated.

## Quick-modelling using boolean

One of the quickest ways that newcomers learn to model is by using the boolean feature. Although not always recommended, this method allows you to create simple objects by fusing two or more objects together or create complicated shapes. To use this feature, choose two more objects that are intersecting each other. Click on **Tools > Boolean Modeling**. Now choose the type of operation you want to use. A preview of the result is also displayed for guidance. For example, **Union** will add the two objects together and **Intersection** will choose the common piece of the two objects.

However, using the boolean feature in any modelling software isn't encouraged by some because it can spoil the flow of the wireframe and that creates complications while trying to map and texture the object.



A preview of the material used in Art of Illusion

## Setting a material

With the model created, it's time to move to texturing. Without a texture, the model will still be lacking a big part of its look. The texture you want to use on the model can be anything from a photo or a texture created in Photoshop or any other image editor.

The material is only the basic look of the model. The texture is what gives it a realistic look. To set a material, first select the object, then right-click on it and click **Set Material**. They can also be set by choosing the material and texture from the drop-down menus in the properties pane on the right.

Materials and textures are resources that can be created and saved for use in later models and scenes. The textures and materials feature under the **Scene** menu. Images need to be imported to create textures. To do this, click on **Scene > Images**. Click on **Load** and select the images you want to import into Art of Illusion.

## Adding lights and cameras

There is always a default light and camera when a scene is created. Additional lights are required to give a better effect for the scene. Lights and cameras are both simple to create. Tweaking the lights to create the ambience for the scene, on the other hand, is time consuming and requires patience.

Lights can be created by clicking on the **Light** icon on the toolbar. Click and drag a line in the viewport and let go to create a directional light. Double-click on the light in the **Object** list to change the type of light. The characteristics for the light such as the intensity and colour are visible in the properties tab.

Cameras can be added similarly. Double-clicking the camera lets you change settings for the field of view and depth of field. Special colour effects can be added by clicking on the **Filters** button. The newly created camera can be selected from the viewport's drop-down menu as well. During rendering, the animation or model can be shown through the new camera's view.

## Rendering the model

The model that you see through your viewport is a low-quality version. The final version with all the models, textures and lights is only put together when you render it. To render a scene or object, click on the **Scene** menu and click on **Render**. Choose a resolution for the render, and set **Antialiasing** to **Maximum**. This will ensure a rendered model without jagged edges.

Once you have the settings set, then you can simply choose to quick-render it. To do this, click on **Scene > Render Immediately**.

If you are creating an animation, the rendering is also done using this same menu. Simply select **Movie** instead of **Single Image**, and set the time frame and the frame rate for the movie. Click OK. You will be prompted for the output file format and destination folder. You will need to use video-editing software to compile the image sequence into a video.

## Customising Art of Illusion

Most of the features and interface settings that have been chosen may not suit you, especially, if you've been using a different 3D modelling software in the past. There are a few tweaks that you can do. Click on **Edit > Preferences**.

The viewports in Art of Illusion are set to show smooth models without any wireframe. If you prefer a wireframe where you can see all the edges and vertices, you can set that. You can also choose to see a textured version of the model right in the viewport instead of repeatedly rendering it.

You can modify shortcuts by clicking on the **Shortcuts** tab. Click on the shortcut you want to change, and click on **Edit**. If you know a little scripting, you can add some additional features linked to a shortcut key.

Art of Illusion is among the several free programs available for 3D modelling enthusiasts. Although its interface and workflow seem a bit messy up, once you get used to it, it's actually very usable.

rossi.fernandes@thinkdigit.com





## workshop

An inductor for the CPU. Each of these represent a single phase of power. Typically most boards have four phase power supplies

CPU Socket - This little socket is where your CPU resides. The one in the picture is an Intel LGA 1366 socket. LGA sockets mean the motherboard has the pins, while the CPU is pin-less

RAM Slots - Your memory is plugged in here. Each slot supports anywhere between two and four GB of RAM. Most boards have four slots X58 boards such as this one have six slots

Note the large heatsink cum heatpipe solution. The heatpipes whisk heat away from hot zones and the CPU fan helps dissipate this heat via the heatsinks

Optical out for digital audio connectivity

The coaxial connect also called S/PDIF for digital connectivity

USB ports - the more the merrier

SATA ports - the interface for most hard drives and the newer breed of optical drives, the more the better

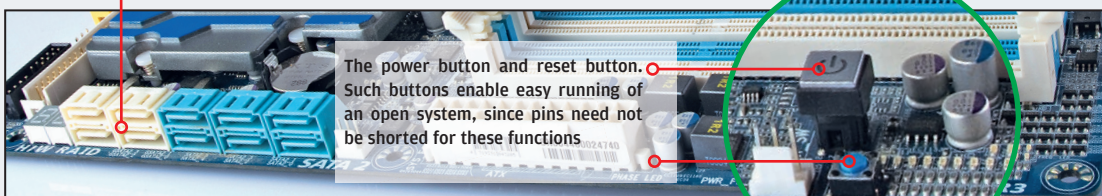
LAN Port(s) - for wired network connectivity. The standard is known as RJ45

Audio Ports - for output to multi-channel speakers or headphones. These jacks are typically colour coded - green for the front channels, black for the rear channels, orange for the centre and woofer and grey for the side channels.

PCIe x1 slot - this is simply a PCIe slot with 1/16th the bandwidth of an x16 slot. The latest soundcards are built around this interface

Chips - these embedded chips correspond to the LAN ports and audio ports. The audio chip for example is an integrated circuit designed to produce sound.

The power button and reset button. Such buttons enable easy running of an open system, since pins need not be shorted for these functions





**Northbridge** - called the MCH (memory controller hub). Contains the core logic that pertains to the CPU, RAM, graphics solution with the Southbridge. Its usually a larger more complex chip than the Southbridge

**Solid state capacitors** - as opposed to electrolytic capacitors SS caps have a longer life and more stable operation

**PCIe x16 slots** - This slot is used primarily for a graphics card. It offers extra bandwidth over the APG interface and in its current avatar supports data transfers of up to 8 GBps

**PCI slots** - these slots are still found on the latest boards and mainly used for attaching soundcards, modems and additional LAN cards

**Southbridge** - Called the ICH or I/O Controller Hub. This core logic chip is further away from the CPU and handles the slower devices on the system such as the USB ports, LAN ports, PCI and PCIe slots (except the graphics card slots)

**LED Poster** - This shows up the POST sequence in hex code for easy de-bugging

**Jumpers** - jumper enable or disable certain functions and are electrical contacts that have to be shorted in order to be activated

**Header pins** - these are connectivity pins on motherboards that are typically hooked up to your cabinets connectors so

**Sensor chip** - every motherboard has one and this chip monitors the status of core components such as memory, CPU and even graphics ports. Parameters like temperature and fan speed are reported in

Photographed by: Manas Parekh  
Motherboard Courtesy: Gigabyte Technology (India) Ltd.





# ADDING FIRE TO FIREFOX

## The best plugins to better the best browser

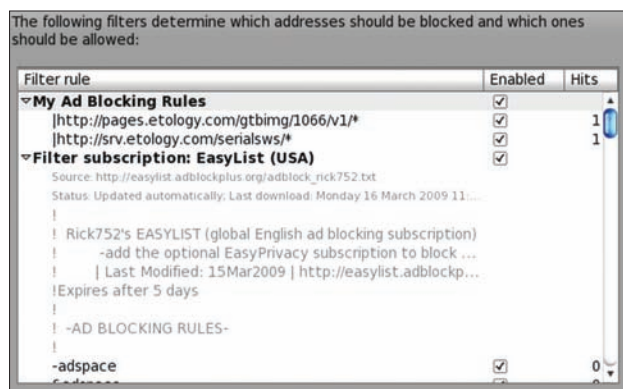
Kumar Jhuremalani

**M**ozilla Firefox is a good browser. But that shouldn't stop us from adding to it – more colour, or customisation in general. At the same time it should be efficient at its main task of browsing. The best thing here is that Firefox permits numerous ways of customisation. But before we come to that, you need to understand how to download add-ons for Firefox.

First, go to [www.mozilla.com](http://www.mozilla.com) and search for add-ons. With the new version of Firefox, you can just go to Tools > Add-ons from the menubar. Then from the Get Add-ons tab, you can search the exact name of the add-on you want to install and start customising. This is another addition to Firefox.

### Adblock Plus

This is an absolute must for Firefox. With Adblock Plus, you will be able to keep those AD banners that slow down your browsing experience, or serve only to irritate your senses, in check. When you install this add-on, you can subscribe to a filter that gets updated almost every day. For



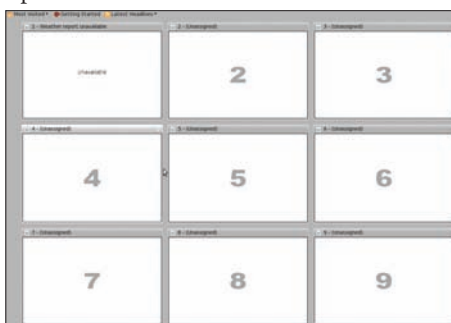
Block those pesky ADs using Adblock

anything that slips past this filter, you just need to right-click a banner AD and select Adblock Frame or Adblock Image; the AD is now permanently blocked. In the preferences window, you will see a whole list of blocked image URLs and also the hits these images received. You can also add manual URLs as filters through the preferences window. This is the first thing you should install on Firefox. If you have been using Firefox for long and have not installed this yet, do it immediately.

### Managing tabs and bookmarks

#### Speed Dial

Let's start off with a small add-on that



Speed Dial is a nice way to quickly launch a site

gives you the option of easily accessing your favourite web sites. It displays your web sites as a grid where you can access them by a single-click. This feature is already present in Opera, but is very useful and hence is a suggested add-on for Firefox. With the Speed Dial extension, you can set the number of rows and columns in the layout and also create dial groups. Other customisation includes the size of the browser background and also the shortcuts for each tab.

### Tab Mix Plus

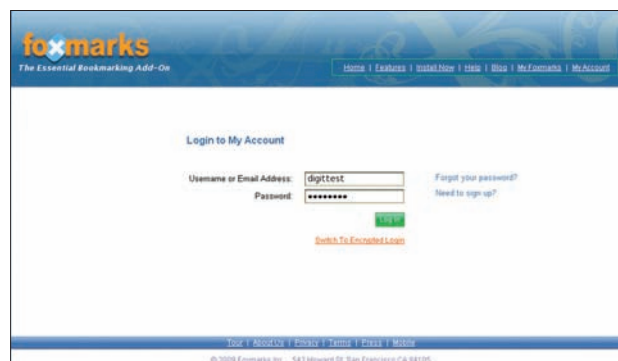
This add-on gives you full control of your tabs, right from allowing all your tabs to fit on the screen by increasing the number of tab bars to even customising what a double-click on a single tab can do.



Tab Mix Plus offers complete control over your Firefox tabs

To access the options for Tab Mix Plus go to Tools > Tab Mix Plus Options. Options present here include Links, Events, Display, Mouse, Menu and Session. In Links, you can set how you want your link to open – either in a new tab or a new window. Events has many more options such as Tab Focus and Tab Merging. In Display options, you can set Firefox to hold multiple tab bars so all your tabs can fit your screen. You can also change the position of your tab bar from the top to the bottom of your browser. Under Mouse, you can customise mouse gestures. You can set the mouse to just hover over the tab and that tab comes forward, without clicking. You can set double-click to rename a tab. On right-clicking a tab, more options are displayed – ranging from duplicating tabs to locking and protecting tabs. These options can be set under the Menu tab, where you can select or deselect the options you want to use. Tab Mix Plus also comes with a session manager which means if your browser crashes, your session will be safe and can be restored.

Additional features with this add-on include locking and protecting tabs. When you lock a tab, everything else will open in a new tab and when you protect a tab, that particular tab can't be closed. It also keeps a list of closed tabs and you can even Undo a Closed Tab. Another great feature is that when you use [Ctrl]+[Tab] it does not just go to the next tab but goes directly to the tab you were last using.



Foxmarks is a great bookmark manager

## Google Chrome

Has released some basic framework for plugins/extensions, but is in preliminary stages

### Foxmarks

Foxmarks is one of the best bookmark managers in our opinion as it not only manages the bookmarks on a single PC, but it syncs your bookmarks across multiple PCs. You can get this either via [www.mozilla.com](http://www.mozilla.com), or alternatively from [www.foxmarks.com](http://www.foxmarks.com) directly. To use the syncing service you will need to sign up which you can do either at the web site, or during installation. Once that's done, your bookmarks will be loaded onto their server and when you login with Foxmarks on another PC, it will sync the two. Another feature offered by Foxmarks is that it allows you to access your bookmarks from anywhere through their online service. For this you just need to login at [my.foxmarks.com](http://my.foxmarks.com). You can also create profiles and categorise your bookmarks for efficiently browsing through your bookmarks.

### Multimedia Add-ons

#### FoxyTunes

The FoxyTunes add-on integrates a tiny media player control with Firefox. This is great for those of you who listen to music while browsing, as you can now control your music from the browser itself, instead of switching to the music player. There is a long list of players from which you can choose; we used this add-on on Windows Media Player and VLC and didn't face the slightest problem. The song title is also displayed in a small section at the bottom of your browser where the controls are located. FoxyTunes

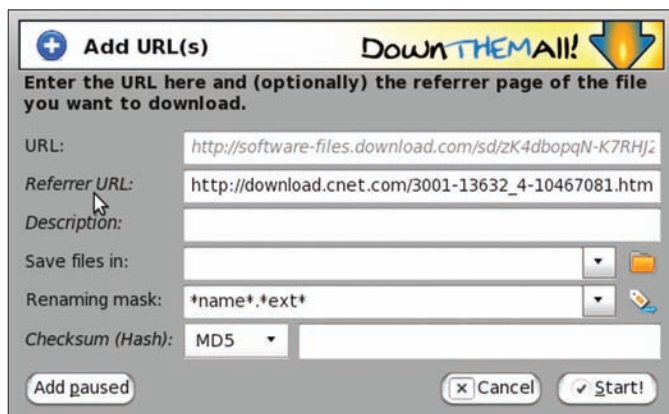


#### FoxyTunes offers media playback controls through Firefox

rids us of the hassle of hitting [Alt]+[Tab] to pause or switch songs, especially since this add-on has its own set of shortcut keys to play, pause, stop and skip. Not only that, with FoxyTunes there is a button next to the music controls that lets you search for images, videos and lyrics of the song you are currently listening to. Additionally, you can access online streams such as [last.fm](http://last.fm) and enjoy the music from there too.

#### FlashGot

With the FlashGot plugin, you can quickly grab and download flash videos from streaming sites such as Youtube. You can also download all the link targets that are present on a single site by clicking FlashGot All, which is located on the contextual menu (menu displayed on right-clicking). Initially, FlashGot downloads all the content using your default download manager. However, if you are using a download manager such as Free Download Manager, it can integrate with that as well. Not only videos, but it can also grab audio while you are listening. The FlashGot Media option, which is used to grab the



DownThemAll is a download manager that integrates itself with Firefox

## Firefox usage

Reports suggest that world-wide Firefox usage stands at around 30%

media, from the context menu will appear only when a streaming media clip is playing.

### For your download needs

#### DownThemAll

DownThemAll is the first and only download manager add-on that integrates with Firefox. It's a very basic download manager and claims to accelerate downloads. You can set the maximum concurrent downloads between 1 and 10 and you can set filters for your download using file extensions; this would help manage downloads even better. If you were to use the default download feature of Firefox, all the files, regardless of their type would be downloaded and dumped into a single folder.

### Gaming

#### The Nethernet

For those of you who like to play games while waiting for something to load or just to pass the time during work, The Nethernet (an online game based on the internet) is meant for you. If you were to classify it, it would fall under the RPG category as it has quests that you have to fulfil. These are not ordinary quests where you have to go and slay beasts and monsters; but instead, the quests have been created by fellow players themselves. These quests consist in linking web sites with a story, that actually takes you to web sites that you might not have known existed and enjoy visiting them. For example, somebody might make a quest of visiting different online comics. The Nethernet gives you a tour of the internet and along the way you get game points and unlock different badges.

After you download this add-on, you will need to register with The Nethernet. Once that's done, you will see the add-ons toolbar on your browser with a bunch of buttons. You have options to attack others by leaving mines at a web site or you could create a portal that will allow you to link the site you have visited to another that you think might be enjoyed by others. All these get integrated into your browser and there are also some special effects that occur with each one of them. You can also chat with other players going through the Nethernet. The community is quite friendly and you are sure to enjoy mixing with them.

So if you are bored at home, or at work and don't know what to do, this is the perfect add-on for you as you might rediscover the internet with this. ■

[kumar.j@thinkdigit.com](mailto:kumar.j@thinkdigit.com)



Pass the time with The Nethernet





q & a

**Your Questions,  
Our Answers**



All your computer  
niggles and nags are  
dealt with here!

### Q Lost data – need help!

I have a Western Digital Caviar 1600AAB55 160-GB hard drive. It has six partitions. The Disk Management utility on Windows XP SP3 indicated 50 GB of free space. I wanted to create a new logical partition. When I attempted to make one of 10 GB, Windows needed to restart to register the partition. After restarting, the My Computer window showed me the drive details. However, when I tried to open the new volume, they refused to do so, stating that the disk was not formatted. I performed a quick format on both the new volumes. They now open, but I've lost approximately 40 GB of data. I want to get my original partition and data back. Is this possible?

Naveen Chand

**A** Before you re-partitioned your drive, your system was using some 148 GB of space. After repartitioning to include a new 50-GB partition, you've lost some 40 GB of space. Use data recovery software to try and recover some of the data. Try using Acronis Disk Director. There is no guarantee you'll be able to recover all the data back.

### Q Problem with playing certain formats

I have downloaded a WMV file, but I can't play it. I have also tried converting it to AVI or MPEG, but I get some error messages.

Saktidip Chakma

**A** WMV is Windows Media Video and is supported by the Windows operating system. The only reason you may not be able to play it is if the video you downloaded is encoded using WMV 10 codecs. You can download and install the codecs and also the latest version of Windows Media Player from Microsoft's web site.

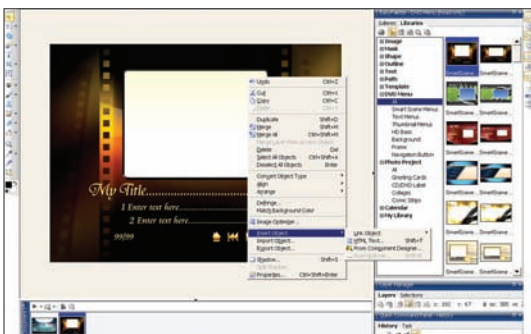
### Q Problems with opening PDF files

When I try to download documents from a site, a message "Adobe Reader – File does not begin with %PDF" appears and I'm unable to get the file from the site. I have installed Adobe Acrobat Reader 9.0 on Windows XP Professional.

Balasubramanian E

**A** Try re-installing Adobe Reader 9. See if this fixes the problem. If you really need to download PDF files from your browser, right-click on the link to the PDF and click Save Link As. Save the file on your drive, then use Adobe Reader to open it. If you continue having trouble using Adobe Reader, you can also try a free PDF reader such as Foxit Reader from [www.foxitsoftware.com](http://www.foxitsoftware.com).

### Q Software trial period ended



PhotoImpact x3 is a commercial software that needs to be purchased to use beyond the trial period

I recently installed a trial version of Corel PhotoImpact X3 and has now expired. When I re-installed it, it said that the trial period was over. What should I do?

Varun Singh

**A** Trial software is meant to expire

## GParted

A popular utility used for  
disk partitioning

after a fixed period. You need to then purchase a copy of the software or enter a serial key for the software to run again.

### Q Boot problems

I had a 40 GB Samsung SV4002H hard disk with four partitions and Windows 98 SE, a few years back. Due to a power outage, I could not boot into Windows 98 SE. I could access the other three partitions of the drive.

I recently upgraded my PC and also got a new hard disk. It's a Seagate 250-GB ST3250310AS drive. I made six partitions and also installed Windows XP Professional SP3 on it. After tweaking around a little, I was able to access the other three partitions on my Samsung drive, but not the previous primary drive that had Windows 98 SE on it. I was also unable to format the drive using XP.

A few days back, I installed Vista on another partition on the Seagate 250 GB drive, but I did not get a dual-boot menu during boot up. It automatically booted into XP. There is an entry for only one OS in the Bootup Settings in Startup and Recovery.

I am only able to boot Vista using the Vista DVD. I tried to repair the Startup using the XP CD as well as the Vista DVD. With the XP CD, I used the fixboot and the fixmbr commands. I typed the fixboot command and pressed Y to confirm the command. A success message was displayed. But when I typed fixmbr the following message was displayed,

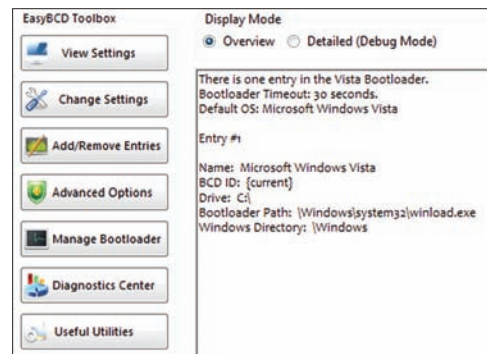
**\*\*CAUTION\*\***

This computer appears to have a non-standard or invalid master boot record.

FIXMBR may damage your partition tables if you proceed.

This could cause all the partitions on the current hard disk to be inaccessible.

If you are not having problems accessing your drive, do not continue.



EasyBCD allows you to modify the boot loader settings

Are you  
sure you want  
to write a new  
MBR?"

I pressed N.  
I could  
not format  
the damaged  
partition on  
the Samsung  
Harddisk even  
with Vista. I  
just want to get  
a boot menu  
where I can  
select the OS I  
want to boot.

Syed

**A** The problems you are facing are due to the boot records for each of the operating systems written on two separate drives. Also, try switching the boot order of your hard drives. Try booting from the newer 250-GB drive instead of the 40 GB. If you just want to be able to boot using the new 250-GB drive, first physically disconnect the 40 GB. The Vista boot loader can be modified easily using a software called EasyBCD. It is available for download from <http://neosmart.net/dl.php?id=1>.

### Q GPS On Blackberry?

I have bought a new Blackberry Curve 8900 that is supposed to be GPS-enabled. However, there is no application to operate it! How can I use GPS on the phone?

Harsh

## Art of illusion

Check out the workshop on 3D modelling



GPS software for the Blackberry (Moving maps, Google Maps, Blackberry Maps)

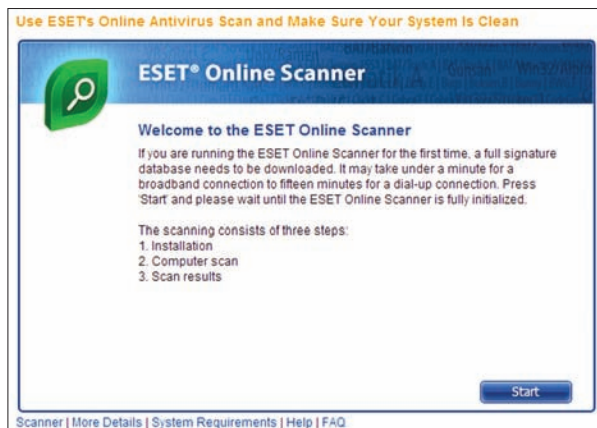
(<http://aerotools.hoshis.org/index.html>)

### Q Folders can't be accessed

I am using a branded desktop and I have a problem accessing my drives. The drives don't open by double-clicking as normal. I have to open them by going through the folder options present in the menu bar. Is it due to a virus? I have been scanning my computer regularly, but I can't find any viruses. How can I get rid of it?

Aryendu Pattnaik

A It is a virus and you should try some other antivirus program. We recommend trying Kaspersky and NOD32. There are also some free online scanners that are worth trying. Bitdefender's online scanner (<http://www.bitdefender.com/scan8/ie.html>),

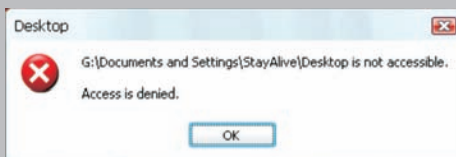


ESET Online Scanner is one of the free online virus scanners

### Q Access denied to my own desktop!

I use a dual-OS setup with Windows Vista Ultimate and Microsoft Windows XP. When I was using Vista, I opened the Windows folder in the XP installation and it prompted me for the security check permissions. Now when I log on to XP, an error occurs every time saying access to the desktop is denied. I tried refreshing the desktop, but each time the same error appears. When I start the machine (for the first time only), the screen pauses nearly a minute to get to the logon screen every time.

Is this problem only occurring because of the two operating systems? When I use a single operating system, it works fine. I have the minimum number of startup programs and I have also modified the start-up using Bootvis. I have also cleared up all dust from



## 1993

The year GPS became fully operational

## TOOLBOX

ESET Online Scanner (<http://www.eset.com/onlinescan/>), Trend Micro's Housecall (<http://housecall.trendmicro.com/>) and Kaspersky Lab Scanner (<http://www.kaspersky.com/virusscanner>) are some of the ones available. Be sure to disable your existing antivirus before you use any other scanner.

### Q Computer slow to boot

My problem is that my PC takes a lot of time to start (around two minutes). Another question is that I am planning to buy a ZOTAC GeForce 9800 GTX Amp! or something similar, but I want to know if I have to buy a new SMPS. I currently use a 450-W power supply. Will my card will be compatible with my motherboard or not? I also want to change my OS to Windows 7 (from XP)? Should I do it?

My computer specifications are:

Motherboard: Gigabyte 945GCM-S2L (S-series)

Processor: Core 2 Duo E7300 (2.67 GHz)

RAM: 2 GB DDR2

Graphics: Currently Onboard

HDD: 250 GB SATA

OS: Windows XP

Gappu

A It's not clear why your system is taking too long to boot up. Try defragging the drive and if you have two sticks of memory, remove one and try booting. Try the same steps with the other module.

The GeForce 9800GTX needs a PCI-Express x16 slot, which the Intel 945 board has. Hence, there shouldn't be any problem upgrading. Running a GeForce 9800GTX on a 450-W power supply might not be a good option, unless it's a very good power supply. A 500-W or higher power supply is recommended.

Although Windows 7 seems to be liked by many, it's a time-limited beta. Therefore, it's a good idea to have XP running along with Windows 7. Your system and the memory is more than sufficient for it to run.

### Q Boot problem, HDD not detected

I bought an assembled PC last September. It worked very well for a month or so, but then I started to face some problems. My system would stop responding and everything would black out. Then, a message would show up "Failed to create user login dialogue" with a "Security failure" error in the centre.

On pressing OK, the system restarts. On start up, it fails to detect any HDD. Also, there

my cabinet and checked the power supply but of no use. I have recently upgraded my machine.

The system configuration:

Processor: Pentium Dual-Core 2 GHz

Motherboard: Gigabyte 945GCM

Memory: 2 GB

A The problems you are facing with accessing partitions and data in the Windows folder is because of the permissions set for each operating system. Preferably, use the exact login information for both the operating systems. Access for the folder might have been set to a particular account on XP. Therefore, when you use a different user account on Vista, you are prompted for authentication information. The fix now can be to create a new user account, preferably a common username and password to both operating systems. The excess time taken to access the login window might also have to do with the access restrictions set. The Access Denied errors might be because you changed the rights and permissions for the Windows XP folders.





q & a

8 million

The number of Ubuntu users in the world

was no drive detected in the BIOS. Everything works fine when I unplug the SATA cable for the drive and restart.

Initially, I thought this might be a hard drive error, so I changed it but still the problem persisted. This time, the BIOS detected the HDD, but the same boot problem occurred

My PC specifications are:

Processor: AMD Phenom 9550 x4

Motherboard: ASUS M3A78-EM

Hard drive: 160 GB Seagate Barracuda (older) / 160 GB Western Digital Caviar(now)

Memory: Transcend 1 GB DDR 800 x 2

Palit HD4850 512 MB DDR3

500 W power supply

Operating System: Vista Home Premium

APC UPS, MoserBaer DVD writer.

Also, I have a few questions.

1. Is this configuration good enough for playing high-end games such as Crysis, and Far Cry 2?
2. Should I consider upgrading my RAM to 4 GB?
3. Is upgrading the motherboard's BIOS necessary?

Soumit Sarkar

**A** The problem might not be with the drive, but with the SATA cable or the connector on the motherboard. Try switching the cable to another SATA slot or even trying new SATA cables.

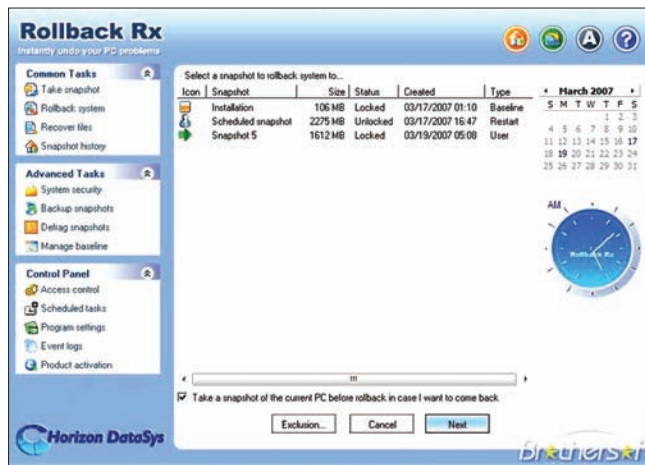
Your system is sufficient for the games you've mentioned. The move to 4 GB will help a bit but not enough. Memory prices are low, so it's a good time to upgrade anyway. Upgrading your motherboard's BIOS is only necessary if there are compatibility or major performance issues.

**Q I want a hidden recovery partition!**

Please suggest how I can create hidden recovery partitions in Windows XP?

**A** Use Rollback Rx or Norton Go Back software program but be careful to only use the software for a single, main system partition.

Jagdeep Viridi  
(Tech QNA Expert)



Rollback RX allows saving and restoring backups

**Q Windows errors!**

When I click on the Add/Remove icon in the Control Panel, I get an error saying 'value creation failed at line 451'. The desktop PC has a Pentium 4 HT processor running Windows XP with 768 MB RAM. The DVD driver is a year old and I also have Nero 7 installed.

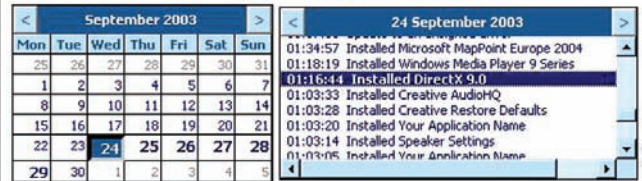
**A** Run this command in the Run window `sfc /scannow`. It checks your system files for any corruption. You can also reinstall Windows with a Repair option. Another option is to use system restore

The following calendar displays in bold all of the dates that have restore points available. The list displays the restore points that are available for the selected date.

Possible types of restore points are: system checkpoints (scheduled restore points created by your computer), manual restore points (restore points created by you), and installation restore points (automatic restore points created when certain programs are installed).

1. On this calendar, click a bold date.

2. On this list, click a restore point.



The sfc command is a file checker built into Windows

from Start > All Programs > Accessories > System tools > System Restore. Use a Safe restore point where your OS runs perfectly.

Jagdeep Viridi  
(Tech QNA Expert)

**Q Windows thinks I'm not logged in**

My Task Manager doesn't indicate the user name and it also says that I'm not logged in. I am running Windows XP SP2.

My PC configuration is:

Pentium 4 2.66 GHz

Intel D101GGC motherboard

80 GB hard disk

512 MB RAM

**A** Open the Run command window using [Windows] + [R]  
Insert Windows XP CD  
Type `sfc /scannow`

Jagdeep Viridi  
(Tech QNA Expert)

**Q Can't read Ubuntu partitions**

I have installed Windows XP (SP2), Windows Vista (Ultimate) and Linux(Ubuntu). I have one problem. I dedicated one drive for the Linux installation. Now, that drive is not shown when I use Windows XP or Vista. All my drives are shown when I boot into Linux. How can I use my drive in Windows if it is possible without formatting Linux. I have dedicated 73 GB to that Linux drive.

My system configuration is:

Processor: Intel Core 2 Duo E4600

Memory: 2 GB

**A** Windows cannot recognise the partition formatted with Linux file systems whereas Linux supports the FAT/NTFS file systems. This is why you cannot see your Linux partition under Windows.

Sanjeev Chharia  
(Tech QNA Expert)

**Q PC is running too slow**

I have a Compaq CQ60 Laptop with Windows XP SP2 with RAM 2 GB and 22 GB hard disk. My first query is that I have installed Vista Inspire 2 on it to have a look like Vista. Is that fine? I copied the setup of a large imaging suite into my second partition and now I think that my laptop is responding slowly.

Manav Dhiman

**A** Copying large data doesn't make your computer slower. It might be due to the Vista Inspire that you have installed or maybe due to a virus. Try uninstalling the Vista Inspire to check if the speed increases, or perform an online scan of your computer from [www.kaspersky.com](http://www.kaspersky.com).

Aditya Rupani  
(Tech QNA)



## TIPS

Handbrake .....25  
vBulletin .....26

Internet Explorer 8 .....28  
Mac OSX Leopard ..... 29

## HANDBRAKE

HandBrake is an open-source, GPL-licensed, multi-platform, multi-threaded video transcoder, available for Mac OS, Linux and Windows. Although, you can use it to rip DVDs for producing either high-quality or space saving files, HandBrake is not technically a ripper. Without the addition of extra libraries, HandBrake cannot break the latest copy protection on DVDs, but the application is quite a powerful encoder. The interface of this light application is fairly simple. It has function buttons at the top, followed by three zones for source, destination and output settings. "Output settings" has several tabs that allow you to tinker with various picture, audio and other additional settings. The right panel comprises Preset encoding modes such as Animation, Apple iPod and Normal.



### Encoding in various formats

HandBrake saves all files in the MP4 container. This file format has some advanced features such as chapter support and variable frame rate and is fairly compatible with most decoders and devices. MP4 is also the native file format for Apple products such as the iPod. However, HandBrake can encode file formats in addition to MP4 — M4V, MKV, AVI and OGM. To select a file format, click on the Format drop down menu under Output Settings. Depending on the container or file format, you can choose the Video Codec from there. HandBrake offers four encoding options, namely, FFmpeg, XviD, H.264 and VP3 (Theora). H.264 is the new preferred HD encoding format. To select a Codec, click on the video tab under Output Settings.



### Ripping select chapters

At times, you may want to extract certain chapters of a DVD movie. It

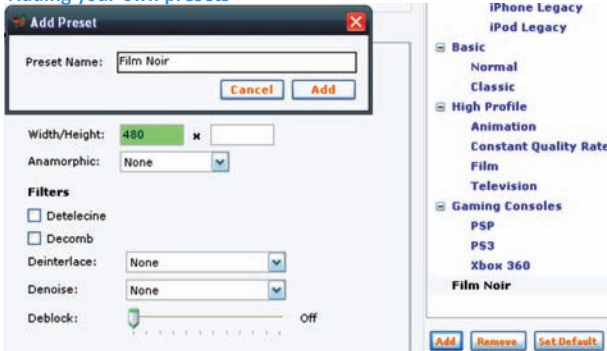
may be for showcasing, posterity, or any other reason. To rip certain chapters of a DVD, select the source by clicking the Source button at the top-left corner. Set the destination output file in the Destination bar (for example D:\temp\Crash). Next, select the title and chapters to rip. By default, the longest title, which is the movie, will be selected by the application. Select the range of chapters you wish to encode below the source bar (say chapters 1 through 4). The estimated time of the selection will be displayed alongside. HandBrake can also append chapter names to the output files. This is very useful if you are ripping more than one file. To change these settings, click on Tools > Options. The general tab in options allows you to change the default output path too. In the main interface, make necessary video and picture settings by using the various tabs or use one of the presets. You can even edit chapter names and markers in the Chapters tab. Once you're ready, click the start button to start encoding. To rip the entire DVD, select all chapters.



### Using presets

There are several minor settings that go into tweaking the video while encoding. Some

#### Adding your own presets



difference to the overall picture quality are frame rate, bit rate, encoding type (whether 2-Pass or not), container, height/width and decomb. HandBrake provides many presets in which all this tweaking is preprogrammed. For example, if you choose the Animation preset under High Profile, the output file format will automatically change to MKV and several minor changes will take place under the different tabs that deliver best output for animation movies. If you wish to encode something for viewing on an iPod, the preset will take care of resizing the video. All you have to do is select your preferred preset and start ripping. Advanced users can save their own tweaks to a preset. To save a preset, click on the Add button at the bottom of the preset panel and give your preset a name. Your custom settings will be saved.



### Burn subtitles into movies

HandBrake has the ability to burn or superimpose on top of a video permanently. This is called hard-burning, which means that it cannot be switched off. There are two types of subtitles — one that runs throughout the movie and the other that shows up only during certain instances. HandBrake allows you to burn either of the two types of subtitles. To change these settings, click the Audio & Subtitles tab and select the options from the dropdown menu. The options are none, autoselect, and the tracks that the application detects such as English and Spanish.



### Encoding in HD

HandBrake allows encoding in high definition (H.264). The presets relating to this mode of ripping are clubbed under High Profile. It's best to use a preset, but advanced users can manually input some of the options. Another important option is the deblocking filter. This filter smoothens blocky compression artifacts when you play back the video. It has two settings — strength and threshold similar to image editing. Each can go up to +/- 6. If strength is below zero and towards the negative, blurring is reduced. Positive values create a softer image, while lower threshold numbers will blur lesser details. 0.0 is the default, but different settings can be used to render different types of material. Live action for instance is good with values such as -2,-1 or -2,-2. To change these settings look under the Advanced tab in the main interface.



### Queuing

Since encoding is a time consuming process, it's handy to be able to queue multiple encoding jobs. HandBrake allows you to queue tasks with the "Add to queue" button on the top toolbar. All you have to do is set up the first encode and click start. Now while this first encode takes place, change the title, chapter, or source in use, for the next set of encodes. Be sure to rename the destination file. Tweak any



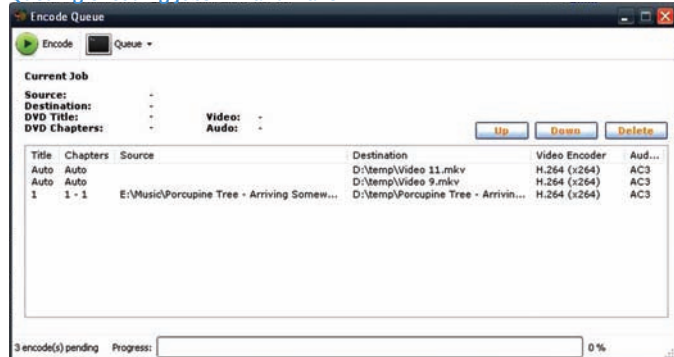


## tips & tricks

settings you want, and then click the “Add to queue” button. Repeat these steps for the whole batch of videos you wish to convert.

### Set level of processing power

#### Queuing encoding jobs in HandBrake



To speed up the encoding process, you can set the level of processing power to be used for encoding. Click on Tools > Options and go to the CLI tab. Here, you can select the number of processor cores you wish to use and priority level. Choosing “Below

can improve quality but excessive use can reduce image detail. So it is recommended to keep it at “Weak” for most purposes.

## VBULLETIN

Every good site has its own forum. It's a common meeting place for others with similar interests to interact with. Digit readers would know that we have a huge forum — the largest technology forum in India. You can visit it at [www.thinkdigit.com/forum](http://www.thinkdigit.com/forum).

Although users can view it, to be a proper participant, you must register with the forum. The Register link on the left top lets you do that. The registration is simple and takes only a minute. After that, you have complete access to years of content related to programming, hardware, games and troubleshooting of hardware and software problems. There are sections even for educational and career planning.

Every forum runs on software, such as PhpBB. The software used by Digit is vBulletin, also used by many other communities on the internet. A service such as vBulletin has many features that users would typically ignore. Some of these features are useful for finding the right content, to keep you updated, while some of them are meant to make posting simple and quick. Some other features are for cosmetic purposes only.

### Viewing active posts

The Digit Forum is a very active place. There are hundreds of posts made every few hours and it's very difficult to keep track of every single thread and post. To

What makes Handbrake so good is that it is constantly developed, with over 600 changes from the previous version.

keep track of it, one of the simplest ways is to use the New Posts link on the top of the page in the centre. This feature simply lists all the posts that were made after you last logged in. This is a much more effective way to find new posts than going through each and every section.

### Social groups

All the users on a forum have a common interest; but within every single interest, there's always a niche topic. Members with these common interests can create social groups — something similar to the way in which Facebook works. Separate subsections in the forum can be set up, so users in particular social groups are given permissions to view and post.

Social groups can be accessed by clicking on Quick Links > Social Groups. You can also search for created groups in the text box on the top-right corner of the page. Once you click on the social group, you can see the posts made on that group. Click on the Join group link to join that group.

### Subscribing to threads

If there are threads that interest you, then you can subscribe to them. Accessing these threads is simple from there on. You can also receive updates on the status of the thread. For example, if somebody posts a reply on the thread, you can receive a mail notification.

First, open the thread to which you want to subscribe, then click on Thread Tools and click on Subscribe to this Thread in the dropdown. You can choose the kind of notification by clicking on the first dropdown menu. Choose instant notification if you want a real-time alert of additions made to a thread. If you visit a forum once a day, then you can opt for the daily notification. If any time you want to unsubscribe, click on Quick Links > Subscribed threads. Click on the checkboxes of the threads you want to unsubscribe. Then, click on Actions dropdown menu on the bottom right. Choose Delete Subscription and click on Go.

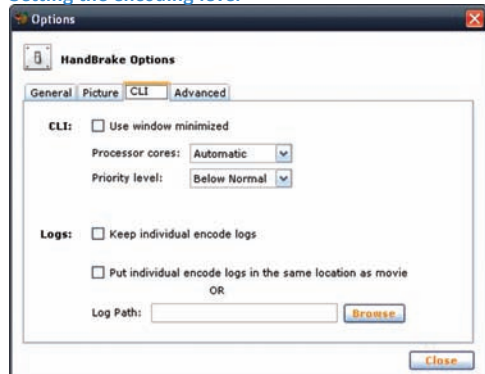
### Disabling automatic subscriptions

Every thread you reply to automatically gets added to your subscription list. This can be disabled by first going to User CP and then to Edit Options. Scroll down to the Messaging & Notification section. Click the dropdown menu for Default Thread Subscription Mode and choose Do not Subscribe. Click on Save Changes button at the bottom of the page.

### Linking to a single post

There are plenty of interesting threads on the forum and quite frequently you may want to share a gem with your friends or colleagues. It could be a set of links to others sites or a few wallpapers. Copying thread URLs is really simple but that

#### Setting the encoding level

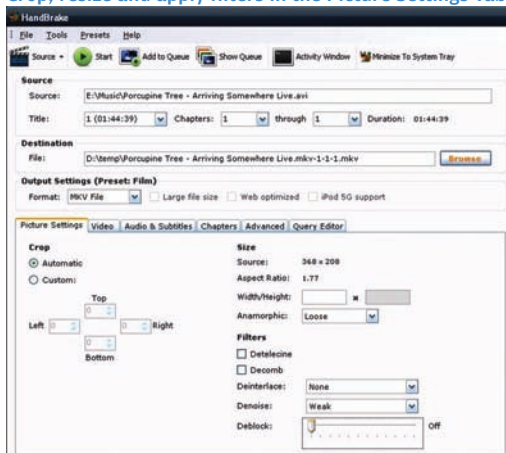


Normal” will allow you to run other applications and use your system while encoding, while “High” will allot more processing power to encoding.

### Picture settings

The Picture Settings tab has several settings that can be customised. These are Cropping, Size and Filter settings. Cropping allows you to remove the black lines that some movies have on the sides. HandBrake does this automatically, but sometimes it doesn't catch everything. In such a case, clicking the “Custom” radio button will allow you to do it manually. Under Size, anamorphic settings will allow you to change the output resolution. Select loose or none to be able to specify it manually. Of the filters, “Denoise” is one that can be used safely in most cases. Denoising simply removes excess graininess from the video. This

#### Crop, resize and apply filters in the Picture Settings Tab



# Forum Lingo

Words such as "bump" to keep a thread active, and "flame" for heated arguments are common.

# vBulletin

The official vBulletin forum is at [www.vbulletin.com/forum/](http://www.vbulletin.com/forum/)

## TOOLBOX

brings additional confusion for the user who has to then look through multiple pages for the post. Fortunately, vBulletin creates a link for every single post and each one of them has a post number. You can find this next to every post on the right denoted as #\_\_\_\_. Clicking on it opens a new tab or window with just that post. You can also copy this URL and send it to your friends.

have a larger screen, the images are resized to that width or height. Scroll down to Thread Display Options in the User CP and look for the Image Resizer. Here you can mention the width and height of your desktop so that the images can be resized. It's advisable to specify a slightly lower resolution than the desktop itself.



### Thread length

Long threads go on forever and switching from page to page can be slow and painful.

then enter a name for the album and give a description if required. Choose whether you want the album to be a private or a public album. Click Submit.

With the album created, now click on Upload Pictures. Click on Choose and select the images you want to upload to your album. Click on Upload Pictures. To access the photo albums of other users, click on their username first and then on Statistics tab. If the user has photos uploaded, you will see a link called "Albums created by" and

### Setting an avatar for the forum

### Setting a limitation on number of posts displayed on a page



### Adding a signature and avatar to your profile

The signature and avatar are images used to identify yourself to others in addition to the nickname that you use. Every forum has this feature and setting it up is rather simple. Like most of the controls, the signature and avatar can be set from the User CP menu. An easier way is to click on the Quick Links link so the dropdown menu appears. Click on Edit Signature.

Signatures can be plain text or a mix of an image with text. First, type the text in the large text box. Do not overdo or let the signature spill into several lines. To set an image as a signature, click on Choose file and browse and point to the signature image you have created. The limitation on the size of the image is 500 x 100 pixels. When creating the image in an image editor, start by creating a canvas of this size.

Avatars are set up on vBulletin in a similar manner. Under the User CP link, click on Edit Avatar. Once again, there is a limitation on the resolution of the avatar. In this case, it is 100 x 100 pixels.



### Widescreen images

Attaching large high-resolution images into the thread isn't usually encouraged on forums. Users with slower connections have to wait a long time for the images to load and those with screens with low resolutions have to scroll a lot to view the images.

vBulletin automatically resizes the image resolution to fit your screen. By default, there is a setting put into your User CP. This can be modified so if you

This can be reduced by increasing the number of posts in a page. This is possible by changing the value of Number of Posts to Show Per Page in the Thread Display Options section under User CP. If the forum has lots of images and video components, then it's better to keep the posts per page to a minimum of, say, 10 to 15.



### Choosing your editor preferences

Every forum has a simple posting utility at the bottom of every page. If you choose Advanced, you are then taken to a page with all the formatting controls displayed. There are also tools to add images, links, bullets, numbered lists, etc.

If you want a more detailed editor in the thread's page, then in the User CP, scroll down to Miscellaneous Editor Interface. Click on the dropdown for Message Interface Editor and choose the kind of editor you want.



### Adding photographs

Like any other photo-hosting site, vBulletin has the option for users to add photographs. There is a limitation on the resolution of images uploaded though — 600x600 pixels. First, resize your images to this resolution before uploading them. Photos could be of your computer, of a recent trip, or anything else. Other members will be able to visit your photo gallery and leave comments.

First click on Quick Links > Pictures & Albums. To add your photos, you first need to create an album. Click on the Add Album link on the left,

the username. Click it and you will see the uploaded photos.



### Using the advanced search

Forums are searchable and often a great source for information. It could be information on a problem you might be facing or you might need to verify whether a thread on the topic you are about to post already exists. The search function is available on the top bar in vBulletin. The advanced search gives better control and is useful if you are getting too many results and you need to filter them out.

Click on Search in the menu on the top of the page and click on Advanced Search at the bottom of the dropdown. Here, you can choose which sections of the forums vBulletin should search for. Hold down [Ctrl] and click on the sections in the list to the right. You can also search for posts by a particular user.



### Quickly marking sections as read

Updates to the forum take place very often and you might find yourself looking through all the updated threads and sections a little difficult. Going to every thread and automatically marking it as read like an e-mail is impossible. Fortunately, vBulletin allows marking of entire sections of the forum as read — a simple double-click action. In the root of the forum, double-click on the icon next to the section name.

This is also particularly useful when you use the New Posts link to list all recently updated links and you are given a list of updated posts from all the sections. It's good to first select as read those sections in which





## tips & tricks

A troll is a user who intentionally breaches netiquette on a forum

you have no interest, and then click on the New Posts.

### Viewing the latest post in a thread

Very often when you visit a thread, you are taken to the first page or the last page of that thread. What you should be able to do is visit the last post by a user. To visit the last post since you logged off, click on the red arrow pointing to the right.

### Downloading all private messages

vBulletin lets its users send private messages to one another. You can access this feature by clicking on Quick Links > Private Messages. The limit for Digit Forums is set to 500 messages. If you get loads of messages and your Inbox is getting filled up, it's a good idea to empty it. If you want a backup of those messages, this can be done through the Private Messages feature. At the bottom-right of the Private Messages folder, you'll find an option to Download all Private Messages as: Choose from XML, CSV and TXT. You'll be prompted to select where the file should be downloaded.

## INTERNET EXPLORER 8

Internet Explorer 8 (IE8) is the latest web browser from Microsoft and is the successor to IE7. It comes with added features such as accelerators, web slices and many more customising features that were not present in the older versions. IE8 is also more secure and shows improvements in many ways. We went through the first release candidate (RC1) for IE8 and have discovered some interesting tips for you to use. Also, IE8 final version has been provided on the Digit DVD, so this eliminates the hassle of downloading it. Once installed it will overwrite your existing IE and after a reboot it will give you the new version.

### Rearranging the toolbars

The toolbar is locked in IE8. Right-click on the IE8 toolbar area and uncheck "Lock the Toolbars". By doing this, you can move the Command bar and Favourites bar around with the mouse. You can also move the Favourites button down to the Tabs level and separate it from the Favourites bar. You can rearrange items on your Favourites bar by dragging items from one spot on the Favourites bar to another. You can also create folders and organise your favourite links, web slices and feeds. To create folders, right-click an existing item on the favourites bar and then click New Folder. You can then drag items

from the Favourites bar into that folder. To remove old links, right-click the item on the Favourites bar, and then click Delete.

### Change the position of Stop and Refresh

You can change the position of the Stop and Refresh button from after the Address bar to before it. To do this, right-click on the toolbar area and go to Customize. Next check "Show Stop and Refresh Buttons before Address Bar" and you will have changed the position of those buttons.

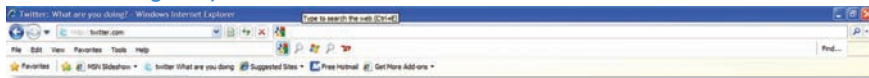
### Wider search bar

For those of you who want a little more space for your Search bar, or little less space for that matter, you can adjust the length of the Search bar in IE8. For this you just put your mouse in the area between the search bar and the address bar and adjust it accordingly.

### Adding links

There are three ways to add a link to the Favourites bar in IE8: you can either drag the web page icon from the

Increase the length of your search bar



Address bar directly to the Favourites bar. Alternatively, you can drag a link located on the web page to the Favourites bar, or lastly you could just click the Add to Favourites button and then click on Add to Favourites Bar.

### Subscribing and previewing web slices

Web slices is an interesting new feature added to IE8. It keeps you updated not with an entire web site, but a particular section or part of a web page. For example, once you subscribe to a web slice such as an auction price, you will be able to see the updated content and this appears as a link on the Favourites bar. When the Web slice is updated, the link on the Favourites bar will appear in bold. You can then click the link to see the updated content.

When a Web slice is available, the

### Preview a web slice without actually opening it



colour of the Web slice icon will change on the Command bar. The Web slice icon will also appear on the content that you can add to the Favourites bar. To subscribe to a Web slice and add it to the Favourites bar, you can either click the Web slice button on the Command bar or click the Web slice icon on the page. Your subscribed Web slice will appear on the left side of the Favourites bar.

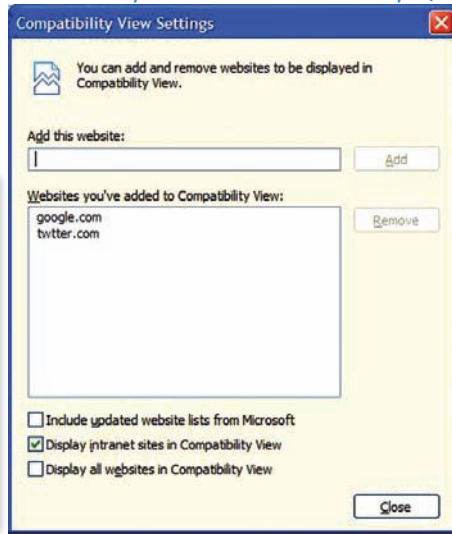
When there is an update on one of your subscribed web slices, that link will be highlighted on the Favourites bar. You can also preview the Web slice that you have added to the Favourites bar without leaving the web site you are currently viewing. Just click on the Web slice link on the Favourites bar to bring up a rich preview of the web page, which you can then click to navigate to that site if you want.

### Compatibility view

Not all web sites on the internet have evolved to be compatible with IE8 and so Microsoft has introduced the Compatibility View option with its browser. This will allow you to view the web site as if you

were viewing it on the previous version, i.e. IE7, so that no major changes need to be made on the web site's front. This option is located next to the address bar, right before the stop and refresh buttons. This feature, once clicked, will only work on the site you have used it with and not other sites that you will visit in the future. IE8 also allows you to maintain a list of the web sites that you want to use with the compatibility view options. For this, go to Tools > Compatibility View Settings from the menu bar. This settings window will allow you to add or remove web sites to be viewed without all the IE8 features. There is an option that you

### Set web sites you want to view in the old style (IE7)



IE8 might be the last version of the Internet Explorer web browser

Steve Jobs stated at Macworld 2008 that over 20% of Macs use Leopard as their operating system

can check "Include updated website lists from Microsoft" which will get an updated compatibility list from Microsoft itself. For those who don't want any changes to be viewed at all, you can opt to view all the web sites in Compatibility View by putting a check next to "Display all websites in Compatibility View".

## Accelerators

Everyday browsing tasks like translating a word or a line, mapping an address and other such tasks are normally done by opening a new web site for each one separately. IE8 has an interesting new feature to perform all these tasks on the spot,

### Translate words quickly with Accelerators

#### Free encyclopedia

is a device that uses electric fields to propel

s and contain ...

- 88k - Cached - Similar pages

Blog with Windows Live

E-mail with Windows Live

Map with Live Search

Search with Google

Translate with Live Search

All Accelerators

English - German

Change Language

Partikel-Beschleuniger (oder

atom-smasher [1]) ist

Translation powered by Microsoft Translator

ists. First, since all particles behave like

particle's momentum, ...

- 5k - Cached - Similar pages

ipex

edia, the free encyclopedia

series of movies by Mattel. It is

e Entertainment out of Vancouver, ...

lacers

making browsing more efficient. When you highlight some text on the web site you are currently viewing a small icon appears — the Accelerators icon. Either click that icon or simply right-click to get a list of options that you can perform for your selection. By default, you can add that text to your Windows Live Blog, email with Windows Live, Map with Live Search, Search with Google and even Translate with Live Search, and other such daily tasks. Some of them don't even need you to visit another web site. For example, a definition of the highlighted word will be displayed in a small box when you just mouse over one of the accelerator options. You can download and add more accelerators from [www.ieaddons.com](http://www.ieaddons.com).

## Caret browsing

An alternative to using a mouse to select text and navigate around within a web page, you can use the navigation keys on the keyboard — Home, End, Page Up, Page Down and the arrow keys. This feature in IE8 is called caret browsing. To use this feature, you just need to hit the [F7] key. On activating caret browsing, click once on any text on the web site you are currently viewing. You will see a cursor that you can now navigate with freely.

# MAC OS X LEOPARD

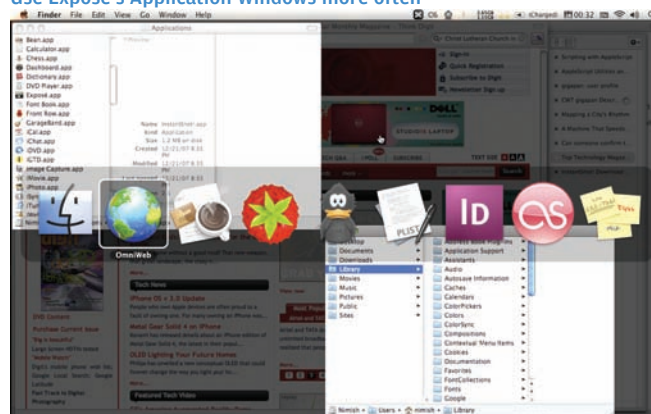
## The Basics

Here's how you can optimise the way you work with OS X.

## Use Exposé smartly

If you've got many windows open, Exposé seems to lose its productivity somewhat — if you can't identify the content of a window (usually the case with documents), you'll have to hover your mouse cursor over it to see its filename. Instead, use Exposé's Application Windows function — hit [F10].

### Use Exposé's Application Windows more often



Now use [Cmd] + [Tab] to switch between programs, and you'll see each application's windows laid out as you switch to it.

## Get special

### characters easily

If you're a former Windows user, you're used to using [Alt] codes or the Character Map for special characters and diacritic marks (such as umlauts - ü - for example). On the Mac, you can get your special characters by holding down [Option] or [Option] + [Shift] and pressing any of the keys on your keyboard. For example, press [Option] + [Shift] + [8] to get the degrees (°) symbol, and just [Option] + [8] for a bullet (•).

For characters that you can't find this way, there's always the Character Palette. Go to System Preferences > International > Input Menu. Turn on the Character Palette at the top, and check the box against Show input menu in menu bar at the bottom. You'll now be able to open the Character Palette

### Tame the volume control



by clicking on the US flag (for US keyboard layout) in your menu bar.

## Control volume control

Having dedicated keys for volume control is nice, but you might wish for finer control over it — why must you be restricted to those squares? To adjust your volume in smaller increments, hold down [Option] and [Shift] as you use the volume control buttons.

## Stop using the Dock

The Dock is a great feature during the first week or so with your Mac, but in the long run, it's mostly useless. With Spotlight, [Cmd] + [Tab] and Exposé, the only reasons you should need the dock are for Stacks, and for the Trash.

The first thing you should do to the dock is to remove all the shortcuts (click and drag the icons out of the dock, and they'll vanish in a puff). To launch applications, use [Cmd] + [Space] to start Spotlight, and type in the first few letters of the application's name. This way, the Dock will only contain applications that are running, and be clear otherwise.

Once that's done, hide the dock so that it doesn't take up valuable real estate. Right-click (or [Control] + click) on the grey divider between the applications and stacks, and choose Turn Hiding On. You can use [Cmd] + [Tab] to switch between applications, and in time, you won't miss the dock at all.

## Use the active corners

If you don't want to tie too many of your function keys with Exposé or related shortcuts, you set these features (and several others) to activate when you move the mouse to the corners of your screen.

You'll find these settings under System Preferences > Exposé & Spaces > Exposé. If you own a MacBook or MacBook Pro, you could set one of the corners to turn off the screen — a great power saver when you're running on batteries.

## Kill Caps Lock

If we had our way, the Caps Lock key wouldn't feature on any keyboard — it serves



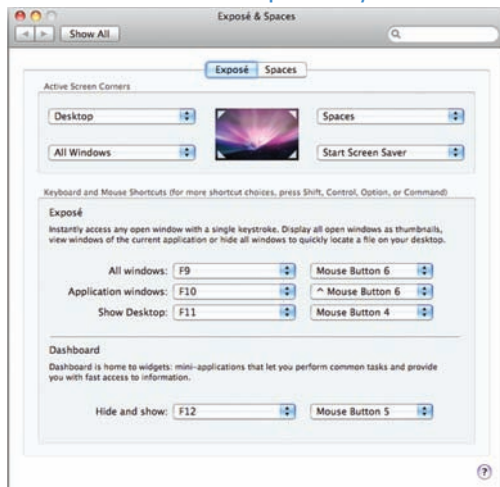


## tips & tricks

### Did you know?

Tear out your favourite Tips & Tricks for your ready reference

#### Use active corners and free up some keyboard shortcuts



no purpose other than to annoy the unsuspecting recipients of your all-capital IMs. Thankfully, you can reassign the key to perform some other useful function, or no function at all.

Go to System Preferences > Keyboard & Mouse > Keyboard. Click on the Modifier Keys button at the bottom. You'll now be able to change the function of the Caps Lock, Control, Option and Command keys. If you're using a laptop, we recommend changing Caps Lock to Control — this makes it easier to execute Control-key shortcuts.

#### Working with long filenames

If you use Finder's Column view, you've most likely seen that it displays long filenames with an ellipsis in the middle, so that you can only see the first and last few letters.

If you hover your mouse cursor over the file long enough, you'll see a tooltip with the full name. But if you can't wait, tap the [Option] key once your cursor is over the file, and the tooltip will pop up immediately.

#### Where files come from

If you use Safari or OmniWeb, you can find out where your downloaded files came from, even days after you downloaded them. Right-click on the file and choose Get Info. If you use Safari, the URL will be under More Info. OmniWeb, on the other hand, puts the URL as a Spotlight comment.

#### Move files

One of the more annoying things about Finder is that you can't cut-and-paste files like you do in Windows — there's no Cut or

Move in the right-click menu for files. If you're dragging files around on your startup disk, it doesn't really matter — Finder usually moves the file by default. However, when it comes to external hard drives, it'll copy, not move.

There is, however, a better method than first copying the file and then deleting the original version. Hold down [Cmd] and drag your file to its new location — Finder will then move the file instead of copying it. This also works if you drag the file and then hold down [Cmd] as you drop it.

#### Easy aliases

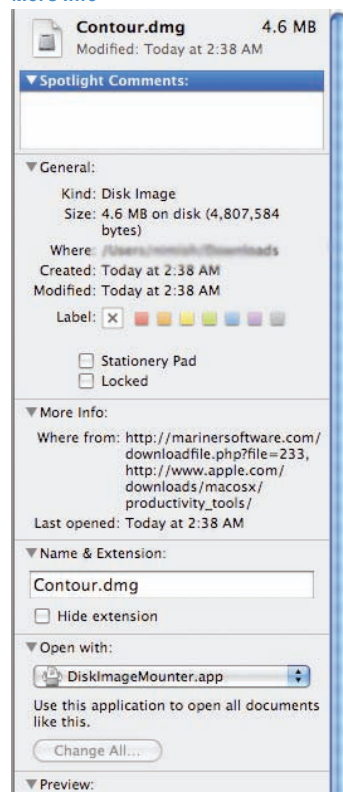
Finder doesn't make it easy for you to create shortcuts to, say, network folders. Unlike Windows, you can't right-click and choose Create Shortcut (called aliases in the Unix world).

To create an alias, hold down [Cmd] + [Option] and drag the folder you want to create an alias to. You'll know this is working if the cursor changes to a curved arrow, indicating that you're about to create an alias, and not just a copy.

#### Easily customise toolbars

There's a quicker way to customising toolbars than right-clicking on them and choosing Customize.

#### Safari stores the file's URL under More Info



Hold down [Cmd] + [Option] and click on the pill-shaped button on the top-right corner, and the Customize dialog will pop up. This even works if you've got the toolbar hidden — once you're done customising, the toolbar will hide itself again.

#### Same stack, different files

If you wanted to open more than one file from a stack, you'd either have to open the stack over again for each file, or just open the folder in Finder and choose your files. But there's a better way.

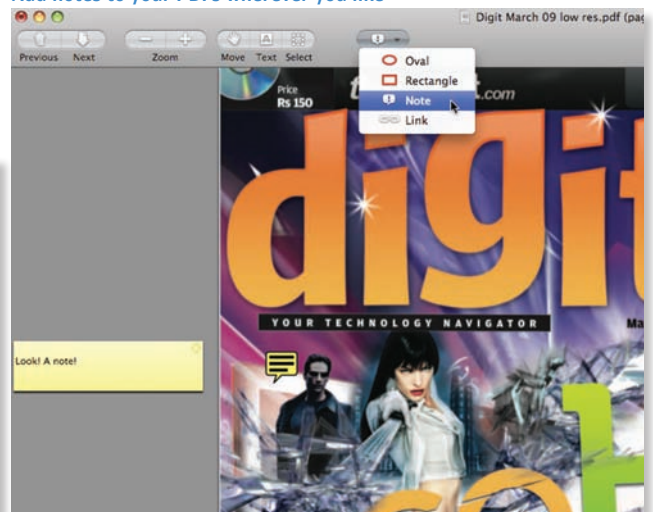
With a stack open, hold down [Option] and one by one, click on the files you want to open. The files will open in the background, and your stack will remain open for you to choose the next file.

#### Annotate in Preview

Preview lets you annotate PDFs with notes or links, but you won't know this unless you open Tools menu, which you'll rarely need to. You can, however, add an Annotate button to Preview's toolbar.

Right-click on the toolbar and choose Customize (or use the method we described earlier). You'll find an Annotate button, which you can drag on to the main toolbar. There's also a Mark Up button, which you can use to highlight, underline or strike through

#### Add notes to your PDFs wherever you like



#### The pill button has some use after all



text.

#### Really get rid of programs

Uninstalling applications may be as easy as dragging them to the Trash, but these applications still leave traces of themselves behind — settings for when you re-install them, for example. There are two ways you can get rid of these remnants:

According to Apple, Leopard contains over 300 changes and enhancements

## Snow Leopard

The name of the next Mac OS X release, expected to be out sometime next year.

## TOOLBOX

The hard way: Applications usually leave files in Macintosh HD/Library/Application Support and Macintosh HD/Users/[your username]/Library/Application Support. Navigate to these folders, and delete any folders you find that belong to applications you've deleted.

The easy way: Download an uninstaller — AppCleaner, for example — and have it do the dirty work for you.

The bottom line: never assume you're done once you drag an application to the Trash.

### See paths in Finder

While you're browsing your computer using Finder, it's always helpful to see the path of the folder you're in. To enable the Path Bar in Finder, select View > Show Path Bar.

The Path Bar will appear at the bottom, and you'll be able to go to any folder in that path by double-clicking on its name.

### Take screenshots of whole windows

You can use [Cmd] + [Shift] + [4] to select

of using the mouse to click on them. Unfortunately, OS X doesn't have anything as convenient, but it does have something. To shift focus to the menu bar, press [Control] + [F2]. This highlights the Apple menu, and you can now use the arrows to navigate through all the program's menus.

### Fun with Spotlight

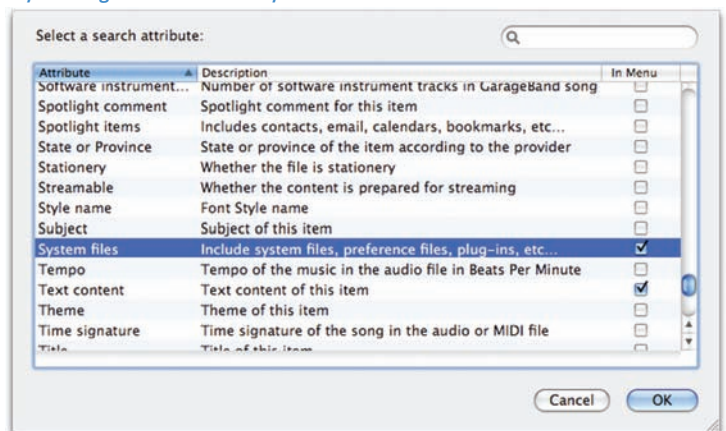
Spotlight is quite awesome as is, but there is still much you can do to enhance your experience with it.

### Search system files

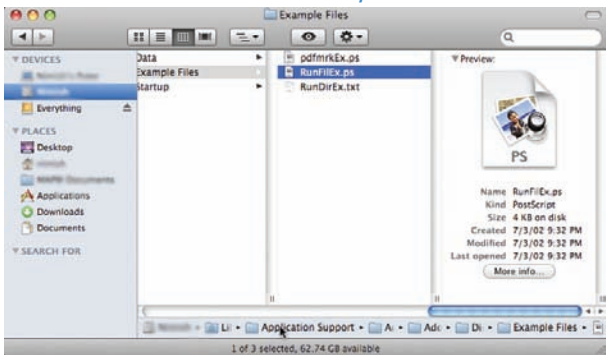
One of the biggest improvements in Spotlight for Leopard is that you're not supposed to get irrelevant results — and since very few users ever look for system files, the new Spotlight won't show them in normal searches. But what if you want system files in your results?

Open the Spotlight Window (press [Cmd] + [Alt] + [Space]). On the right, click on the "+" button next to Save to add a search criterion. When the bar

Try not to get overwhelmed by these choices



Hover the mouse over a folder name if you can't see it in its entirety



an area of the screen that you want to capture, but what if you want to capture entire windows, shadows et al?

Press [Cmd] + [Shift] + [4] to bring up the crosshairs that lets you select a part of your screen. Now hit [Space], and the mouse cursor will change to a camera. Now all you have to do is move the camera over the window you want to capture, and click.

### Shortcuts for Windows powerusers

If you're a keyboard warrior, you've often used [Alt] to get at the menus for Windows programs, instead

for the criterion appears, click on Kind. This will give you a menu from which you can choose a search parameter. Select Other. You'll now see an embarrass-

Capturing whole windows is easy



### Power searches with hints

If Spotlight isn't giving you the results you desire, you can filter your searches by typing in one of these hints (much like you would with a Google search):

kind:[filetype] search term — searches within files of type filetype. For example, "kind:music" (without quotes) searches all files that OS X sees as music — MP3, AAC and so on.

comment:text — searches for files that have text in their Spotlight comments

date:date — searches for files created on date. You can also use "this month", "today", "this week" and so on (without the quotes)

pages:n — searches for documents with n pages

layer:text - searches for Photoshop files with layers whose names have text in them

...and so on

Unfortunately, Apple hasn't documented these hints, but there's hope.





## tips & tricks

To get an idea of the filetypes that you can use with kind, open Macintosh HD/System/Library/Frameworks/CoreServices.framework/Versions/A/Frameworks/Metadata.framework/Versions/A/Resources/English.lproj/MDPredicateKeywords.plist in a text editor of your choice.

To find out which hints you might be able to use, open Macintosh HD/System/Library/Frameworks/CoreServices.framework/Versions/A/Frameworks/Metadata.framework/Versions/A/Resources/English.lproj/schema.strings in a text editor, and scroll to the bottom.

### Terminal tweaks

Because your Mac is a BSD-based system, you have all that Unix-y goodness at your fingertips — it would be a shame to waste all that. To get into the terminal, open Spotlight ([Cmd] + [Space]), type terminal and hit [Enter].

### Monitor your processes

To see how much of your CPU your processes are hogging, you can use the Unix top command to see what they're up to. In the Terminal, type top, and you'll see a list of all running processes, ordered by how much of your CPU they're using. To stop watching the processes, press [Control] + [C].

If you find a process that's taking up more CPU time than it should, note down its process ID (in the first column), end top, and in the prompt, type kill [process ID].

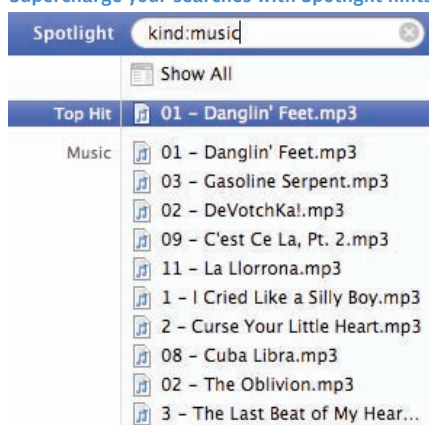
### Change where screenshots get saved

Like us, you probably find it extremely irritating that screenshots get saved on the desktop — no save dialog, nothing. Thankfully, changing the default location for screenshots is just a terminal command away.

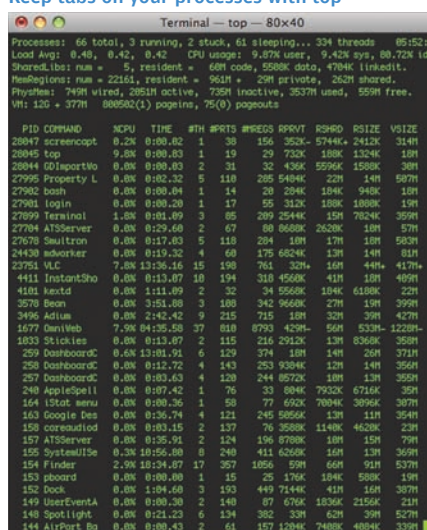
In a terminal window, type defaults write com.apple.screencapture location [path], where the path starts at the root. For example, to save screenshots in your Documents folder, you need to type /Users/[your username]/Documents.

You'll need to log out and log in again

### Supercharge your searches with Spotlight hints



### Keep tabs on your processes with top



for this to take effect.

### Show hidden files

It isn't advisable to show OS X's hidden files for two reasons: firstly, your Finder windows won't look as pretty and uncluttered any more, and secondly, you could end up deleting something critical and messing things up. That said, here's how you enable hidden files:

In a terminal window, type defaults write com.apple.finder AppleShowAllFiles TRUE. You'll need to relaunch Finder to this to work — in the terminal window, type killall Finder (remember the capital F).

### Put Automator to Good Use

There's a lot you can do with Automator, but unless you're performing a set of tasks on a regular basis, it's usually better to do them manually — especially if you don't have the time to learn how to use Automator. There are, however, a few tasks we find ourselves doing quite often.

### Open folders in a program

This is especially handy if you want to open a single folder of music or video in a program like VLC, so you don't have to add them to your iTunes Library, or if you want to open an entire folder of images in Preview.

To begin with, start Automator. You'll find it under Applications, or just use Spotlight. You'll be prompted to choose a starting point. For now, choose Custom. You'll now go into the main Automator window, with blank workflow just itching to be filled.

The first step is to have Finder identify the folder you've selected. To do this, select

The new Mac Pro comes with an Intel Nehalem-based Xeon processor

Files & Folders under Library (on the left). Look for Get Selected Finder Items, and drag it into the workflow area on the right.

The second step is to have Finder gather all the contents of the folder. Still under Files & Folders, look for Get Folder Contents, and drag it into the workflow area. In the action, choose Repeat for each subfolder found.

Now that you've gathered these items, you're set to open them in the program of your choice. Under Files & Folders, select and drag Open Finder Items into the workflow. You'll now be able to choose the application you want the files to open in.

To test your workflow, open a Finder window, select the folder you want to open, and click Run.

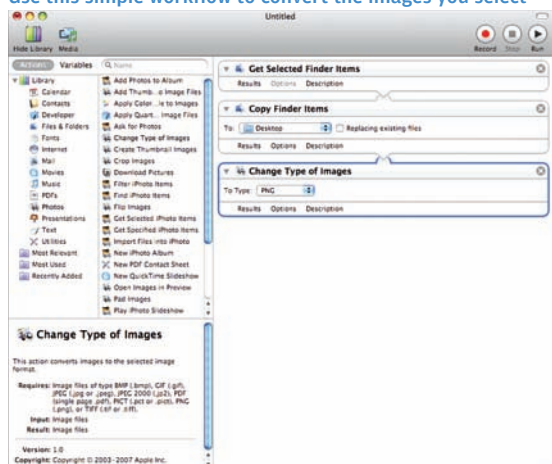
Now, to save this workflow as an item in the right-click menu. Select File > Save as Plug-in and give it a name. You'll now be able to select it by right-clicking on the folder and choosing More > Automator > [Your workflow name].

### Convert images in batches

This, too, is a pretty simple workflow — select a bunch of images, and convert them into whatever format you want.

Start with a new Automator workflow ([Cmd] + [N]). Under Files & Folders in the Library, drag Get Selected Finder Items to the workflow area. Now, under Photos, drag Change Type of Images into the workflow. You'll now be asked

### Use this simple workflow to convert the images you select



whether you want to add an action to copy the images before you convert them. While you're testing the workflow, we recommend choosing Add. You can remove it once you've had your first success with the workflow.

Finally, choose the type to convert the images to, and you're ready to save the workflow as in the previous tip.



Agent 001

# FEELING BLUE

## Agent001

Ever since its introduction into the Indian markets via mobile phones, PMPs, PDAs, speakers and also printers, Bluetooth, as a technology, has always been something that is perceived as being actively sought after and desired. Very few people actually know the advantages of Bluetooth as a wireless protocol for data transmission, but suddenly everybody started demanding Bluetooth on their mobiles. Due to its one-to-one nature and inbuilt security features, Bluetooth sees a lot of usage in wireless hands-free units used with mobile phones and wireless data transfers between two devices. Currently, A2DP (Advanced Audio Distribution Profile) is a special protocol built into the Bluetooth standard that allows for streaming of high-quality stereo audio from one A2DP supporting device, such as a phone or PMP, to another device such as a Bluetooth headset or a speaker set.

First, Bluetooth is a big plus for consumers. Being wireless, it puts an end to cable clutter. Bluetooth headphones are becoming quite popular and if your music device is a phone or PMP that is Bluetooth capable with A2DP, then you should definitely consider a pair. Sound quality is as good as a wired headset. Obviously, it has a certain working range and of course the clearer the line of sight between the receiver and the transmitter the better the sound quality will be. Bluetooth speakers are also becoming common, although not as common as headsets. The most common accessory, however, remains the wireless hands-free unit that is a boon to virtually anyone who uses a cellular phone.

When looking at Bluetooth hands-free kits, the biggest players in terms of the volume of their sales are the cellular handset manufacturers themselves. The problem is that there are very few options available from these manufacturers and these models only work with handsets from the same manufacturer. Third-party hands-free unit suppliers are limited to Jabra and Plantronics. Jabra has a wide range of hands-free Bluetooth units available. The cheapest is the Jabra BT-2010. It's priced at Rs. 1,600 or so and is built simply but well, and is a mono-hands-free Bluetooth unit. The Jabra BT-125 is the next model I came across. Priced at Rs. 1,800, it's a little sleeker than the BT-2010, but otherwise offers the same functionality. The Jabra BT5020 is one of the sleeker and more feature-rich headsets around. It does not have a detachable armature (the part that secures the Bluetooth device on your ear). Instead, the entire device is built in a curve with the earpiece on one end and the microphone on the other. This makes it look very sleek. Since the entire thing wraps around your ear, sans protrusions, this is one of the few sets that you can wear even with a helmet on: Although not too comfortable, at least it's possible. Other headsets that have an earpiece sticking in your ear with the mouthpiece protruding out cannot be worn with a helmet. The BT5020 supports up to two profiles and can thus be paired with two Bluetooth-capable handsets, which is a great plus for those with two phones. Additionally, it has wind-noise reduction; that is a sound-filtering system that, although basic, works well. Priced at Rs. 3,850, this headset is a



good deal — a pity stereo isn't supported.

The BT8040 was the only other headset that caught my attention because of its features. Priced at Rs. 6,100, this is the ultimate mate for those with multiple phones or other BT devices. Up to eight devices can be paired and two devices can be paired at the same time — an unbeatable plus for those who carry two phones around. Additionally, it can be paired with other Bluetooth devices and even a PC with Bluetooth to stream music. Intelligent volume control is built-in; this boosts volume for a lower volume voice and decreases the volume in case there is background noise. The Jabra JX-10 is also available for Rs. 5,500. However, it doesn't have any special features — it's just superbly designed and really looks like it stepped off a ramp.

One of the more interesting offerings from Jabra is the BT-3030. Priced at Rs. 3,200, the BT-3030 looks like a dog tag. The best part is that this unit does not have headphones, which means that you can use your own stereo earphones provided they have a 3.5-mm pin. This device can be used with a phone as a hands-free device or with any device for music — the biggest advantage here being the option for stereo sound. It even has buttons for next/previous track functions.

Plantronics' Voyager 510 is another unit that supports pairing with two devices and has a smart switch feature that recognises which device is currently being used and automatically switches to that device's profile. It's priced at Rs. 4,100 and we feel that this is a decent price, considering Jabra's BT5020 doesn't switch automatically between two paired devices. Plantronics' Voyager 855 is also available for Rs. 6,790 and this unit cleverly incorporates a detachable additional earpiece, which when plugged in makes the Voyager 855 a pure stereo device. When using it for calls, you can simply unplug this additional cable and use it as a mono wireless headset. While the music quality of this device is also pretty good, it's a little overpriced. The Pulsar 590E is a Bluetooth headset that has a built in microphone for use with phones. This headset is not really portable, but suitable for those looking for wireless headphones — the earcups themselves are supra-aural. Logitech's Free Pulse Bluetooth headphones are also available. These are for people who only want a set of wireless headphones for music without a microphone. Sound quality is good, definitely good enough for music although audiophile-grade listeners will look for better sonic performance. However, priced at Rs. 7,100, these headphones sound good and are very comfortable. Dell also has an option for Bluetooth headphones — the BH200 I saw at one vendor. Although these were not meant for sale and bundled with their XPS M1530 notebook, yet they are pretty neat and offer decent sound with a good microphone. Priced at Rs. 4,000, this is a cheaper option for those looking at something more affordable — the minus is the restricted availability.

When it comes to Bluetooth speakers, I could not find many options in the market. In fact, the only speaker setup that was available with two of the vendors was the Logitech Pure-Fi Mobile, which is a Bluetooth speaker system. This system is claimed to give as much as 12 hours of music playback between recharges. Priced at Rs. 10,000, these speakers consist of two pressure and two active 2-inch drivers and can be charged via the mains or USB.

Of the available options, I found the Jabra BT-3030 the most attractive for someone looking at a stereo Bluetooth headset for music, mainly because of the flexibility of using your own cans with them. For users looking for a wireless mate to their phones, the BT5020 is a good offering that offers the best of features at a decent price. ■

agent001@thinkdigit.com



## RAmos T10

A PMP which sports 4.3-inch WQVGA display and has support for practically any audio / video format

## Sony Ericsson

Launches its first outdoor Bluetooth speaker

## Dell Adamo

Presumably the world's thinnest laptop. Will be available soon for about Rs. 1.02 lacs

# Ask Agent001

**Q** I have decided on the following configuration for my first PC: Intel Q9550 CPU, MSI P45 Platinum Mobo, Corsair 2X2GB DDR II 800 RAM.

The problem is that I read your article on the Nehalem i7 CPU this month. It made me think again.

Is the i7 worth the extra Rs. 10,000 or so considering that DDR3 is costlier? Should I wait for the next price drop? The choice of graphics card is Palit HD4870 1 GB Sonic.

I'm also confused because SLI works better than the CrossFire because of game manufacturer support. In the future, will this change? I'm also considering an NVIDIA card because SLI works more consistently than CrossFire.

**Abhijeet Kashid**

Firstly, the i7 is worth the premium of Rs. 10,000. If you already had a reasonably fast system, I would recommend you wait a bit, as prices are expected to drop by August. Since you don't have a fast PC, I recommend spending a bit more and getting the i7. Unfortunately, even though the i7 920 is priced identically to the Q9550, you will pay a bit extra for an X58 motherboard and DDR3 memory. For the memory, I recommend Transcend 1333 MHz DDR3 that should cost you around Rs. 7,000 for a 4 GB kit. For the motherboard, Intel's own DX 58SO is available and will cost you Rs. 16,000. The Palit 4870 1 GB SONIC is a superb choice and represents great value and is decently future proof. It's also great for a CrossFire solution. The NVIDIA equivalent is the GTX 260 which is slightly costlier. The NVIDIA GTX 285 is a faster card, but is much costlier. In case CF is something you are looking at in the future, I recommend at least a CoolerMaster Real Power 850 W PSU which is priced at Rs 8,500. If you really want a monster PSU, the Corsair HX 1000 is unbeatable at Rs. 13,000. Do not try to save on the price of a PSU — this is one of the most important components in your PC and can damage other components. In case you do not want to opt for multi-GPU solutions, look at Corsair's TX 650-W PSU.

**Q** My budget is Rs 7,000 and I want to buy a PMP with good sound quality, about 8-16 GB of storage and nice looks. Also, tell me the price of an iPod Classic. Does it come in an 8-GB model?

**Atul Bagde**

The iPod Classic is available in a minimum size of 80 GB. It's a hard drive based PMP. Only flash-based players have smaller storage sizes in the range of 1 GB to 32 GB. If you really want a serious PMP, I recommend you up your budget by another Rs. 1,500 and get a Cowon D2. It's a great audio and video device and supports memory expansion as well. Alternatively, for Rs. 7,000, you could get the iPod Nano 4 GB, which is also a very good PMP.

**Q** I am planning to buy a Sony digital camera. Please suggest a good camera from the Sony Cybershot series. My budget is Rs. 10,000.

**Prasanth P**

Considering your budget, perhaps you might be better off taking a look at Canon. Canon models are priced better on the street. For Rs. 10,000, you could pick up an SX100 IS, which is an 8-MP camera with a 10x optical zoom. Alternatively, you could look at the A720 IS, which also has a sensor rated at 8-MP and has a 6x optical zoom. You will have to decide whether you want to pay extra for a bill or not. The difference could be as much as Rs. 2,000 between dealer prices and street prices.

**Q** I want to buy NVIDIA 9600 or 9800 GT cards. Which of these are more suitable for a gamer? I also want buy a low-cost motherboard with at least one PCI Express slot. Will a PCIe 2.0 slot be faster? Please help me choosing the peripherals.

**Paltu Sharma**

NVIDIA's GeForce 9800 GT is a much faster GPU than the 9600 GT. While the 9600 GT has 64 stream processors, the 9800 GT has 112, and is more of a mid-range option than the 9600 GT, which can be considered as an entry-level option. PCIe 2.0 is the latest generation PCIe slot. Other than the higher theoretical bandwidth than PCI 1.0, there isn't a big difference. Performance-wise, the difference is not more than 2-3 per cent. As of today, a PCIe 2.0 generation slot is not a necessity and will not be for another year, at least. The choice of motherboard should not be dictated by this feature. You have not mentioned which platform you want a motherboard for, but I'm assuming it's Intel based. I recommend a GeForce 9300-based solution if you're looking at an NVIDIA GPU, mainly because these boards support

hybrid power saving where either your GPU or your integrated graphics solution is used depending on what sort of application is being run. Zotac's GeForce 9300 is a good solution for you and is priced at Rs. 6,500.

**Q** I want to purchase a laptop. My budget is Rs. 70,000. The minimum requirement is:

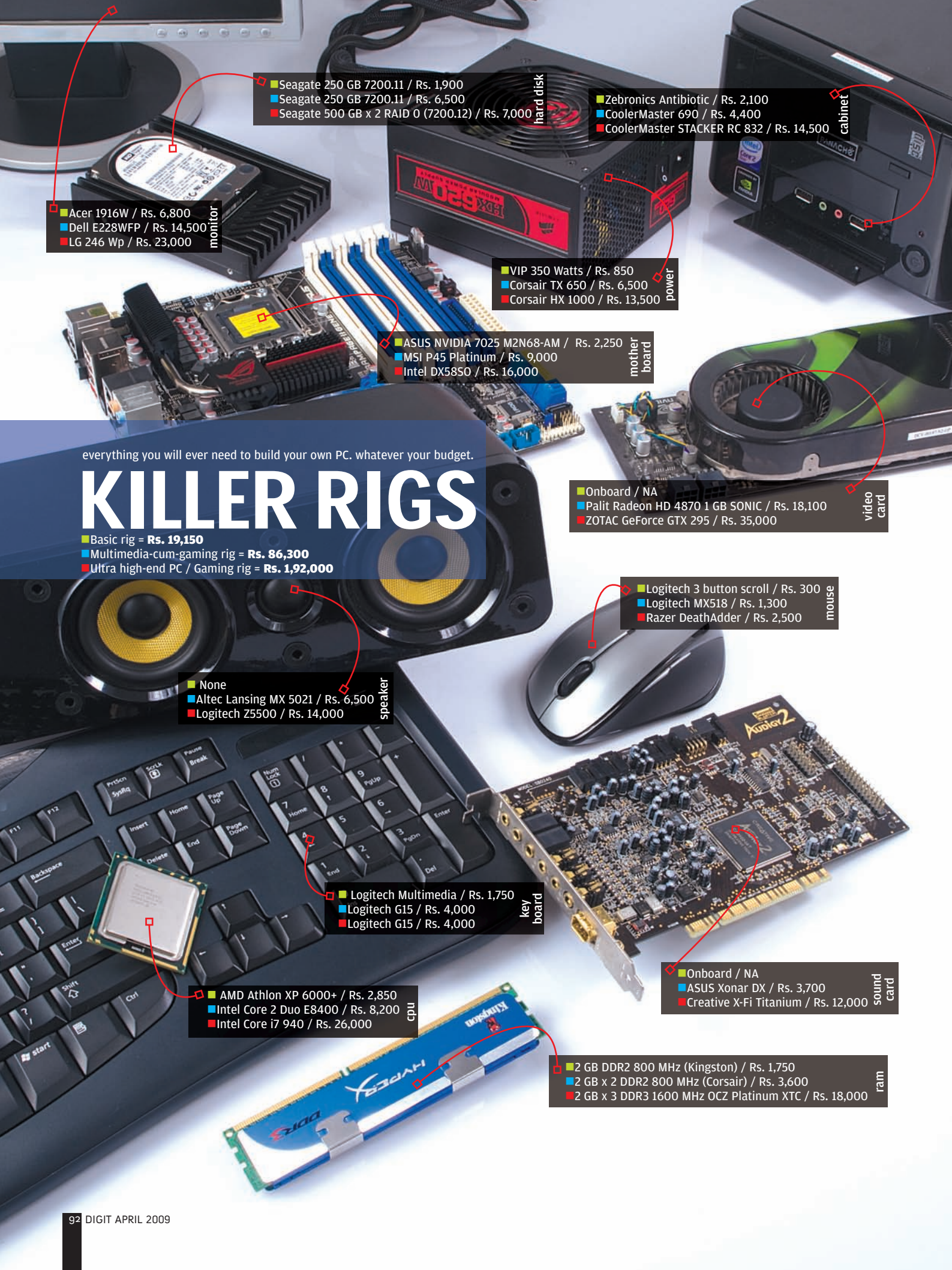
CPU: Core 2 Duo 2.4 GHz, GPU: 512 MB (DX 10 supporting, NVIDIA preferred), RAM: 2 GB, HDD: 240 GB. I am a computer engineering student and a gamer as well. I am looking for Dell and Vaio laptops.

**Akshay Dorwat**

Look at the new Dell Studio XPS 16. It has everything you've listed and is suitable as a gaming notebook. The only thing is it uses an ATI graphics solution. It uses the ATI Radeon HD 3470 512 MB. The CPU used is the new Core 2 Duo P8600 (2.4 GHz). ■

## How to clean your CD/DVDs

Old disks often acquire small specks of dust in the tracks that often cause read errors, responsible for the "cyclic redundancy error" message. Using a clean dry cloth to wipe them often helps, but not always. You can clean your disks with soap, and then wipe the disk dry before you insert it into the tray. Or spread Fevicol carefully in a circular motion, let it dry and peel of the layer from the disk using fingers not your nails. Wipe with soft dry cloth before using.



- Acer 1916W / Rs. 6,800
- Dell E228WFP / Rs. 14,500
- LG 246 Wp / Rs. 23,000

monitor

- Seagate 250 GB 7200.11 / Rs. 1,900
- Seagate 250 GB 7200.11 / Rs. 6,500
- Seagate 500 GB x 2 RAID 0 (7200.12) / Rs. 7,000

hard disk

- Zebtronics Antibiotic / Rs. 2,100
- CoolerMaster 690 / Rs. 4,400
- CoolerMaster STACKER RC 832 / Rs. 14,500

cabinet

- VIP 350 Watts / Rs. 850
- Corsair TX 650 / Rs. 6,500
- Corsair HX 1000 / Rs. 13,500

power

- ASUS NVIDIA 7025 M2N68-AM / Rs. 2,250
- MSI P45 Platinum / Rs. 9,000
- Intel DX5850 / Rs. 16,000

mother board

everything you will ever need to build your own PC. whatever your budget.

# KILLER RIGS

- Basic rig = **Rs. 19,150**
- Multimedia-cum-gaming rig = **Rs. 86,300**
- Ultra high-end PC / Gaming rig = **Rs. 1,92,000**

- Onboard / NA
- Palit Radeon HD 4870 1 GB SONIC / Rs. 18,100
- ZOTAC GeForce GTX 295 / Rs. 35,000

video card

- Logitech 3 button scroll / Rs. 300
- Logitech MX518 / Rs. 1,300
- Razer DeathAdder / Rs. 2,500

mouse

- None
- Altec Lansing MX 5021 / Rs. 6,500
- Logitech Z5500 / Rs. 14,000

speaker

- Logitech Multimedia / Rs. 1,750
- Logitech G15 / Rs. 4,000
- Logitech G15 / Rs. 4,000

key board

- AMD Athlon XP 6000+ / Rs. 2,850
- Intel Core 2 Duo E8400 / Rs. 8,200
- Intel Core i7 940 / Rs. 26,000

cpu

- Onboard / NA
- ASUS Xonar DX / Rs. 3,700
- Creative X-Fi Titanium / Rs. 12,000

sound card

- 2 GB DDR2 800 MHz (Kingston) / Rs. 1,750
- 2 GB x 2 DDR2 800 MHz (Corsair) / Rs. 3,600
- 2 GB x 3 DDR3 1600 MHz OCZ Platinum XTC / Rs. 18,000

ram



## A backplane

Is a circuit board that connects several connectors, can perhaps be regarded as a precursor to the motherboard

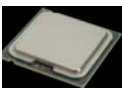
STREET SMART

## Stuff we would buy...



### Motherboards

Model	Market Price	Tested in	Socket	PCI-e x8/x16 slots	SATA Ports	No of rear USB Ports
ASUS M3A	Rs. 4,950		AM2+	1	4	4
ASUS M3N78-EH (Geforce 8200, AMD)	Rs. 5,450	November 2008	AM2+	1	6	4
ASUS P5Q Deluxe	Rs. 12,600	June 2008	LGA775	2	6	6
ASUS P5Q-E	Rs. 10,800		LGA775	2	6	8
ASUS P6T Deluxe	Rs. 20,800		LGA1366	3	6	8
Gigabyte GA-EP45-DS3R	Rs. 8,500		LGA775	2	6	8
Gigabyte GA-EX58-UD5	Rs. 17,650		LGA775	3	6	8
MSI X58 Eclipse	Rs. 23,900		LGA775	3	10	8
Zotac 780i Supreme	Rs. 14,500		AM2+	3	6	6



### Processors

Model	Market Price	Tested in	Socket	Speed	FSB	L2 Cache
AMD Athlon X2 5200+	Rs. 3,075	November 2008	AM2+	2.7 GHz	2,000 MHz HyperTransport	1 MB
AMD Athlon X2 5600+	Rs. 3,675	November 2008	AM2+	2.9 GHz	2,000 MHz HyperTransport	1 MB
AMD Phenom 2 X4 920	Rs. 10,975		AM2+	2.8 GHz	3,600 MHz HyperTransport	2 MB
AMD Phenom X4 9550	Rs. 6,850	November 2008	AM2+	2.2 GHz	3,600 MHz HyperTransport	2 MB
AMD Phenom X4 9650	Rs. 6,800	November 2008	AM2+	2.3 GHz	3,600 MHz HyperTransport	2 MB
AMD Phenom X4 9850 Black	Rs. 8,400	November 2008	AM2+	2.5 GHz	4,000 MHz HyperTransport	2 MB
AMD X2 6000+	Rs. 4,175	November 2008	AM2+	3.1 GHz	2,000 MHz HyperTransport	2 MB
Intel Core 2 Duo E5200	Rs. 3,500	November 2008	LGA775	2.5 GHz	800 MHz	2 MB
Intel Core 2 Duo E7300	Rs. 5,750		LGA775	2.66 GHz	1,066 MHz	3 MB
Intel Core 2 Duo E8400	Rs. 9,400		LGA775	3 GHz	1,333 MHz	6 MB
Intel Core 2 Duo E8500	Rs. 9,600	March 2008	LGA775	3.16 GHz	1,333 MHz	6 MB
Intel Core 2 Duo Q6600	Rs. 9,750	November 2007	LGA775	2.4 GHz	1,066 MHz	8 MB
Intel Core 2 Duo Q8200	Rs. 9,025	November 2008	LGA775	2.33 GHz	1,333 MHz	4 MB
Intel Core 2 Duo Q9550	Rs. 14,975		LGA775	2.83 GHz	1,333 MHz	12 MB
Intel i7 920	Rs. 15,100		LGA1366	2.66 GHz	4.8GT/s QPI	NA



### Graphic Cards

Model	Market Price	Tested in	Core Speed	Type of memory	Memory
EVGA 9600GT Knock-out	Rs. 7,550	November 2008	700 MHz	GDDR3	512 MB
EVGA 9800GT (Super Clocked)	Rs. 9,600		650 MHz	GDDR3	512 MB
Palit GeForce 9400 GT	Rs. 2,400		550 MHz	GDDR2	512 MB
Palit Radeon HD 4850 SONIC	Rs. 9,750		685 MHz	GDDR5	512 MB
Palit Radeon HD 4870 1 GB SONIC	Rs. 17,150		750 MHz	GDDR5	1024 MB
Palit Radeon HD 4870 SONIC	Rs. 15,275	October 2008	750 MHz	GDDR5	512 MB
XFX GeForce 8600 GT	Rs. 3,400		540 MHz	GDDR2	256 MB
ZOTAC 9800 GTX+ AMP! Edition	Rs. 11,150		738 MHz	GDDR3	512 MB
ZOTAC GeForce GTX 260	Rs. 18,500		650 MHz	GDDR3	896 MB
ZOTAC GeForce GTX 285	Rs. 26,000	Feb 2009	648 MHz	GDDR3	1024 MB



## price watch



### Monitors

Model	Market Price	Tested in	Size	Resolution	Contrast Ratio	Response time
Acer AL1916	Rs. 6,500		19-inch	1280 x 1024	700 : 1	8 ms
Acer AL2216	Rs. 9,800		22-inch	1680 x 1050	700 : 1	5 ms
Dell 1909W	Rs. 7,200		19-inch	1440 x 900	1000 : 1	5 ms
Dell S1709W	Rs. 6,550		17-inch	1440 x 900	600 : 1	8 ms
LG 177WSB	Rs. 6,400	May 2008	17-inch	1440 x 900	700 : 1	8 ms
LG W192W	Rs. 7,550		19-inch	1440 x 900	700 : 1	5 ms
LG W1942S	Rs. 7,100		19-inch	1440 x 900	700 : 1	5 ms
Samsung 2033SW	Rs. 7,850		20-inch	1600 x 900	15000 : 1	5 ms
Samsung 740NW	Rs. 6,500		17-inch	1280 x 720	500 : 1	8 ms
Samsung 743NX	Rs. 7,300		17-inch	1280 x 1024	500 : 1	5 ms
Samsung 943NWX	Rs. 7,500		19-inch	1280 x 1024	1000 : 1	5 ms
ViewSonic VA1918WM	Rs. 6,600		19-inch	1440 x 900	1000 : 1	5 ms
ViewSonic VX2255wmb	Rs. 12,500	May 2008	22-inch	1680 x 1050	1000 : 1	5 ms
ViewSonic VX2835WM	Rs. 28,000		28-inch	1920 x 1200	1000 : 1	3 ms



### Cabinets

Model	Market Price	Tested in	Dimensions	Weight	No of 5.25" bays	Number of fans
Antec Nine Hundred	Rs. 6,950		19.4 x 8.6 x 18.6 "	8.4 kg	3	4
Antec NSK4400	Rs. 2,200	May 2008	16.6 x 7.8 x 16.5 "	8 kg	3	3
Antec P180	Rs. 6,450		21.3 x 8.1 x 19.9 "	14 kg	4	5
Antec P182	Rs. 8,075		21.3 x 8.1 x 19.9 "	14 kg	4	3
Antec Twelve Hundred	Rs. 11,650		22.9 x 8.4 x 20.2 "	14.5 kg	3	6
Cooler Master CM 690	Rs. 4,200		20.64 x 8.38 x 18.97 "	9.8 kg	4	2
Cooler Master CM Stacker 832	Rs. 12,975		21.1 x 25.11 x 9.84 "	14.5 kg	9	2
Cooler Master Cosmos-1000	Rs. 12,975		24.72 x 10.47 x 23.54 "	16.9 kg	5	3
Cooler Master Elite 330	Rs. 1,950	September 2008	19.09 x 7.44 x 16.73 "	6 kg	4	1
NZXT GUARDIAN 921	Rs. 4,675		20.55 x 18.07 x 8.11 "	8.2 kg	3	3
Thermaltake Armor+	Rs. 12,500		23.6 x 9.6 x 24.6 "	10.2 kg	7	4
Thermaltake Xaser VI	Rs. 13,700	January 2009	23.8 x 9.8 x 26.0 "	18.0 kg	7	4



### Hard Drives

Model	Market Price	Tested in	Speed	Cache	Interface
Seagate 1TB	Rs. 5,500		7200 RPM	32	SATA 2
Seagate 7200.12 500 GB	Rs. 3,250		7200 RPM	32	SATA 2
Seagate 750GB	Rs. 4,550		7200 RPM	32	SATA 2
Western Digital Caviar Blue 640GB	Rs. 3,700		7200 RPM	16	SATA 2
Western Digital Caviar Blue 1TB	Rs. 5,150		7200 RPM	16	SATA 2
Western Digital Caviar Blue 750GB	Rs. 4,450		7200 RPM	16	SATA 2





# ERGONOMICS AND YOUR PC

Terry Relph-Knight

Personal computers have been described as mind tools. Using one should thus be a comfortable experience with the minimum of distractions to interfere with the flow of creativity. Even the most mind-numbing of data-entry jobs can be made easier through using the right input devices in a comfortably set up working space.

Ergonomics can be defined as 'design for ease of human use'. Of course other design factors tend to take priority. For example there's engineering practicality — "let's just get the thing to work first, figure out how to produce it simply and we'll worry about a designer case later". Or ergonomics — "moulding a contoured handle would cost how much; no, let's just stick a round handle on it". Apple is a good example of a computer company that has made a virtue out of design ergonomics.

## Why are ergonomics often ignored in the workplace?

Applying good ergonomic principles takes care and effort and may even cost money. Employers perhaps have trouble recognising the benefits from having a more productive and healthier workforce. Supplying workers with a desk, a chair and a computer takes little thought. Ensuring they have a comfortable and productive work environment takes effort; indeed employers may think "why bother". In many countries legislation attempts to protect workers by dictating, or at least recommending, good working practice.

Several of the major IT equipment manufacturers publish safety and comfort guides for computer users. Hewlett Packard for example makes its [ref.1] Safety & Comfort Guide available as a PDF to download and IBM and Lenovo publish [ref.2] a guide to Workstation ergonomics on their web site.

A search of the official Indian government web site — india.gov.in — for computer ergonomics reveals little, other than some notes on the comfort of tractor seats. However, India does have one professional body for ergonomists, the [ref.3] Indian Society of Ergonomics, established in 1983. According to its web site the ISE is the only professional body representing ergonomics / human factors professionals in India. It publishes a quarterly newsletter.

## The display

It is not uncommon to see users elevating their display height by placing it on stacks of books or other makeshift stands. In an office setting this can give an unprofessional impression and may be unstable and hazardous. This behaviour is hard to explain and is, ergonomically speaking, incorrect. In any case most recent LCD monitors have built-in height adjustment. The correct height for a computer display is for the top edge of the screen to be at, or just a little below, the users seated eye line.

Another bad habit is festooning the edges and top of a display with trinkets and

post-it notes. Again this looks unprofessional and can cause stress. Odd brightly coloured objects around the edge of a screen attract the eye and trying to sub-consciously ignore them, while you concentrate on what's on the screen, can cause physical strain and mental tension. If a workstation is used for any aspect of design or image manipulation, then the surrounding colours of walls, ceilings and nearby objects and the type of lighting are even more critical. In this case anything other than neutral colours and 'daylight' lighting will distort the perception of on-screen colours.

Viewing distance does depend somewhat on screen size, but 50 to 60 cm is a normal viewing distance.

## Lighting

All too often computers are set up in environments where there is no control over, or thought given to, either artificial or natural lighting. A modern office building should be designed with computer use in mind, but usually they aren't. Ideally, computer screens should be arranged so that no strong artificial or natural light source directly reflects from their surface. Sitting either facing or with your back to a window means that either the natural light behind the screen is too bright, or the light falling on the screen overwhelms the screen image. If your work position is near a window it's best to sit with the window to one side and to place the back of the screen towards and at an angle to the window.

If nearby artificial lighting causes a strong reflection on your screen that cannot be solved by changing the displays position, then a shade over the light source or even removal of the lamp should be considered.

For design environments 'Daylight' classified light sources should be used, usually either D50 or D65. Where workplaces are illuminated with fluorescent tubes this can just be a case of replacing the tubes with D65 tubes.

External light filters that can be placed over the screen are available, but these are often quite ineffective, it's better to deal with the sources of glare and reflection than to try and use a filter to reduce them. Current LCD monitors with a flat, matte surface screen, are less prone to reflections than the older CRT displays and often easier to manoeuvre into a suitable position.

## The keyboard

The keyboard has been and still is the main human input device. Early computers used the electro-mechanical teletype. The teletype design was in turn based on the typewriter, a device that is now 124 years old. The odd QWERTY key arrangement is often commented on. The common myth is that the designers of the typewriter, originally a slow mechanical device, were forced to jumble up the order of the letters, in an effort to slow down the typist to the point where the letters no longer jammed as several tried to strike the paper at almost the same time. The truth is apparently the other way about, the original designer realised that key jams where more likely to occur between common letter pairs, so he arranged these letters so their mechanical linkages were far apart, reducing jams and therefore increasing the maximum possible typing speed.

In 1932 Prof. August Dvorak, of Washington State University set out to design a better keyboard layout, with more of the most commonly used letters (in English) in the 'home row'. Dvorak keyboards turned out not to be as obviously efficient, or as popular, as Prof. Dvorak hoped and today the venerable QWERTY layout keyboard is still with us. The [ref.4] argument over which keyboard layout is better continues to this day...



A teletype, forerunner of today's computer keyboards. The round key design echoes that of the older typewriters

One idea that is used today is the split keyboard. These range from the gently humped Microsoft Natural Keyboard that only suggests a split, to the extreme Kinesis keyboard where the keys are grouped in two discrete depressions in the keyboard surface, or the [ref.5] Goldtouch keyboard with its adjustable central hinge. The idea with all these keyboards is to place the keys where they are most easily accessible to the fingers of each hand. However, the more extreme designs do require full touch typing skills because the keys are more difficult to see.

When using a normal flat keyboard a wrist rest is essential to place the heels of the palms on the same level as the keying surface. The [ref.6] TrulyErgonomic keyboard, which has yet to go into production, incorporates such a rest.

## Other input devices

Various attempts have been and are being made to augment or replace the keyboard. The mouse is now ubiquitous, but like touch-screens and light pens, compared to the keyboard it is a point and select device, rather than a data input device. The influence of ergonomic design is very evident in the evolution of the mouse. The first mouse, [ref.7] made in 1964 by Douglas Engelbart, was a rectangular wooden box with two wheels mounted at right angles underneath. Production versions of this mouse weren't much better.

Interestingly Engelbart points out that there is a difference between designing for ease-of-use and for high performance. He envisaged knowledge workers of the future being highly skilled with interface systems that were not necessarily easy to use. This is perhaps demonstrated by the number of buttons found on different mouse designs. Apple favour the simple single button, while other designs have four or five buttons, plus perhaps a wheel. With more buttons it is often more difficult to remember their functions and to manipulate them correctly, at speed.

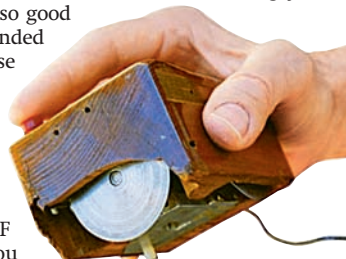
Modern mice look very different to Engelbart's prototype, being ergonomically contoured to fit the hand. Although mice seem to be exclusively designed for right-hand use an internet search should reveal quite a few sources for left-handed mice and keyboards and these are of obvious benefit to those who are strongly sinister (left-handed). There are also good arguments to be made for right-handed people sometimes using their mouse over on the left-hand side of the keyboard, thereby balancing the strain on the arms and hands. It takes a little getting used to, but probably carries benefits. It is also worth pointing out that the home keys on the keyboard, F and J, should be right in front of you as you type - dead centre. However, they are significantly to the left of centre of modern keyboards, which are therefore most comfortably used with the mouse on the left. This is a case of not well-considered design, given that most people are right-handed.



Goldtouch split hinged keyboard



TrulyErgonomic keyboard



Original prototype mouse built by Douglas Engelbart

## Education and exercise

Ultimately, individual workers, once made aware of a few simple ergonomic principles, are best placed to know whether or not their working conditions are comfortable. Often there are simple actions they can take to improve their work space by, for example, re-locating their display or shading local light sources.

Computer use encourages sitting in one place for long periods of time. It's highly advisable to get into the habit of taking breaks throughout the work day to walk around, or do some stretching exercises.

## Furniture

Chairs have acquired high status in the design world, international architect Mies Van der Rohr is almost as famous for his 'Barcelona' chair design as he is for his buildings. Perhaps as a consequence there's more effort expended on designing 'ergonomic' chairs, than any other item of office furniture. One of the most well known designs is the [ref.8] Aeron chair designed in 1994 by Don Chadwick and Bill Stumpf and made by Herman Miller, the American furniture manufacturer that is closely associated with many famous chair designs.

The Aeron comes in three sizes and is fully adjustable in height, tilt and armrest height. It has a lumbar support and the back rest and seat are made from a tough mesh, allowing air to circulate around the user's body. The design flexibility of the Aeron chair comes at a high price. Fortunately, there are many less expensive chairs that can be adjusted for proper user comfort.

A good chair, adjusted for correct posture and support, is essential. Proper lumbar (lower back) support for the natural in-curve of the spine is important. When seated relaxed and upright, with the hands in typing position, the arms and legs should form right angles at upper and forearm and at thigh and calf. The feet should be resting flat on the floor (a foot rest can be used if they aren't). Shoulders should be relaxed and not hunched. The mouse should be easily grasped without much arm extension and the elbow and wrist well supported by the chair arm rest and desk.

For computer work, a wrap around desk with a separate adjustable keyboard support is the best choice. Ideally the keyboard needs to be quite low down, almost in the users lap; placing the keyboard on top of a conventional desk often means it's a little too high.

## In conclusion

To sum up — an ergonomically designed workstation environment should be comfortable. If you find you are developing any aches and pains after working at your computer for any length of time something is wrong with the way you have your work space arranged. ■

readersletters@thinkdigit.com

## References

- [www.hp.com/ergo/](http://www.hp.com/ergo/) HP Safety & Comfort Guide
- [www.pc.ibm.com/ww/healthycomputing/we-intro.html](http://www.pc.ibm.com/ww/healthycomputing/we-intro.html) IBM Workstation ergonomics
- [www.ise.org.in/index.shtml](http://www.ise.org.in/index.shtml) Indian Society of Ergonomics
- [www.pub.utdallas.edu/~liebowit/keys1.html](http://www.pub.utdallas.edu/~liebowit/keys1.html) which keyboard layout is best?
- [www.goldtouch.com/c-2-adjustable-keyboards-numeric-keypads.aspx](http://www.goldtouch.com/c-2-adjustable-keyboards-numeric-keypads.aspx) Goldtouch keyboards
- [www.trulyergonomic.com/TrulyErgonomic](http://www.trulyergonomic.com/TrulyErgonomic) TrulyErgonomic keyboards
- [www.bootstrap.org/chronicle/pix/pix.html](http://www.bootstrap.org/chronicle/pix/pix.html) The first mouse
- [en.wikipedia.org/wiki/Aeron\\_chair](http://en.wikipedia.org/wiki/Aeron_chair) The Aeron chair



A typical modern mouse, the Microsoft Wireless Laser Mouse 5000



The Aeron chair from Herman Miller





# An introduction to MODEL VIEW CONTROLLER

Kshitij Sobti

If you've ever trawled the internet looking for information on programming in your favourite language, you must have come across the term model view controller (MVC). Ever wondered what it was, and why people make such a fuss about it? Well, here's your chance to find out.

It's a principle that has over time been proven to assuage several issues that come up while developing large software projects. It isn't limited to any specific programming language, instead it is a paradigm for organising the code and functionality of your application in such a way that it is easily extendible and easier to maintain.

## Design Patterns

You may have heard a lot of people talk about how it is best to separate the presentation from the content. Most programs these days try to do just that. The reason this is important is, that more often than not, it is only one of them that needs updating.

Imagine you write a long and complicated report with a proper structure such as title, headings, sub-headings, illustrations, comments and so on – each with a different formatting. Imagine then if you're told it has to be submitted in different standardised formatting! It would be really troublesome to go and change each and every thing in your entire document!

The solution for this is to define a particular style and its function, rather than apply styles to the content. Let's compare the following two sentences:

- The font size 22 in my article is 'The Early Man'. After that, I begin with an 18 point text 'Introduction', followed by a 14-point text "OR"
- The title of my article is 'The Early Man', after that I begin with my first chapter, titled 'Introduction' followed by the content.

Similarly, a computer can work better with content if it knows the intended purpose. For example, in Microsoft Word if you define text as the title, some as the subtitle, and some as the content, then all you need to do to change the appearance of the entire document, is to change the styles associated with those types of data. In addition to this, Word can easily generate a table of contents for you if you've gone through the effort of defining headings and sub-headings.

In other words, we try to divide the content into two parts - one which contains the data and its description. Additionally, there is information on how to display this data. Let us say we want text as the accompanying box.

Earlier, this is how the text might be represented:

Font: Amplitude, Size: 18:

The Early Man

Font: Amplitude, Size: 14:

Introduction

Font: Calibri, Size: 11:

The early man was the earliest man to ever be called a man.

However, the following method is now used to present the information:

Heading: The Early Man

Sub-Heading:

Introduction

Content: The early man was the earliest man to ever be called a man.

Along with: Heading = Font: Cambria, Size: 18

Sub-Heading : Font: Cambria, Size: 14

Content : Font: Calibri, Size: 11

The advantages of the second approach are quite evident.

## The Early Man Introduction

The early man was the earliest man to ever be called a man.

Now it would be possible for you to change the font of all headings, by merely changing one line.

While the second approach may seem to be taking more space, this is not entirely true. As the content increases, the amount of space taken up by formatting information in case of separate presentation and content can be much less.

## The MVC Paradigm

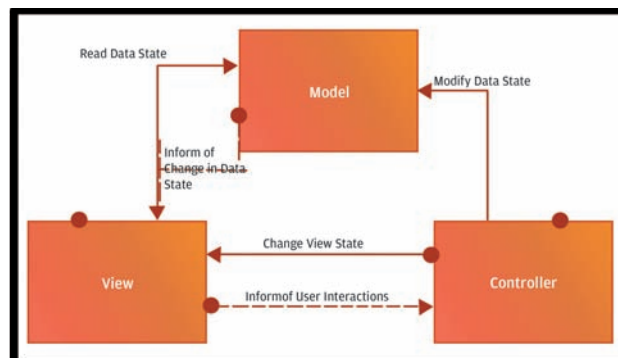
So what does this have to do with programming? For one, most programs are centred on data and display. A majority of the software we use accesses some kind of data and displays something on screen. The data need not be something we would concern ourselves with, but it is there.

To use the MVC paradigm, we separate the functionality of our application into three parts, the model, the view and the controller. The model is the data store of the application, the view / views are what decide how data is displayed, and the controller is what handles interaction and response. It is not as simple a job as it sounds, it can often be quite counter-intuitive, and sometimes might not even be the best thing to do.

## The model

The model is the repository of data for the entire application. Any information that the program works with is part of the model. By decoupling this from the other parts of the program we ensure that the program will continue working as expected even if we decide to change the way we store or access data.

For example, if you develop a simple application for handling contacts, and address book. You initially start off using text files while developing the application. However, you may later decide to store it as an XML file or a VCF file, or even a full fledged



database. For this, all you would need to do is add the requisite functions to handle those formats to your model. Since the rest of the application works off the model, it doesn't matter how the model is getting the data, as long as it's getting it. So you could even add functionality to store the data online, and all you would need to change is the model.

It merely provides a standard fixed way of accessing its data, and modifying it.

## The View

The view is part of the application that displays data. Buttons, lists, combo boxes, etc. make up the view. It retrieves data from the model and displays it to the user; however, it does not make any changes to the data itself. Therefore, in a way, it has read-only access to the data.

An application need not have only one view. On the other hand, having multiple views easily is one of the strong points of using MVC architecture. Taking our previous example of an address book application, we could create as many views for it as we want. To add or edit contacts, you could provide multiple

## Spring Tool Suit

The newest release STS 2.0 enhances the toolset's ease of use, so developers to get more done, quickly.

## Nokia's Qt software division

Released Qt version 4.5, that will expand cross-platform capabilities and increase performance.

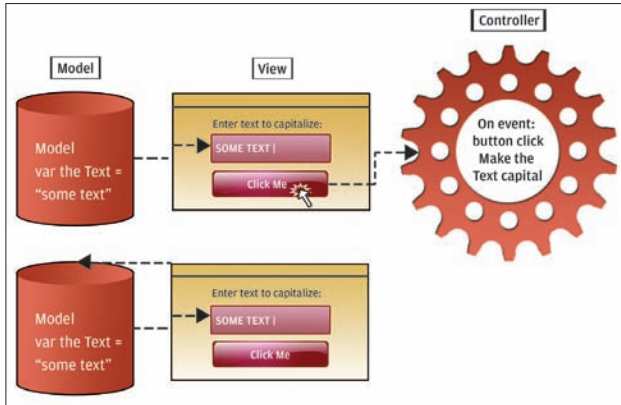
TECH@WORK

views such as a wizard view or a simple form view. The view is not dependent on the control; however, it needs to be aware of the model to display the data in it.

### The Controller

The controller represents the main logic of your program. It is like the brain which manages the other elements of the MVC program. It accesses and modifies the data of the model in response to the user's interactions with the view. It is again not concerned with what the view looks like. It is an action-reaction system, where certain interactions with the view will result in modifications in the model, or changes in the view.

As in the address book example, the controller would then



be responsible for adding / removing / modifying contact entries, sorting the data in response to triggers from the view, performing searches, etc.

The control is again not dependent on the view, and only responds to events generated by it. However, it needs to be aware of the model in order to make changes to it in response to the events.

### The result

In most cases, the end user will not care about the internal mechanism by which the program chooses to work. Unless a structure is clearly defined, it can become very difficult for a team to collaborate on the coding. Using an MVC design does not eliminate this problem. However, it does make it easier to avoid.

In a project built with MVC principles, you can have a professional database developer working away at adding more kinds of data formats that can be handled to the model, while a designer works away on adding more views and making the views better, while more people are working on the core functionality and improving the performance of the controller. Each can work separately and independently of each other, by following simple guidelines as to how the three would interact.

Since the separate elements are decoupled from each other, it also means that there is no model-specific code in the controller, and no controller specific content in the view. This means that they can easily be 'unplugged' from one program and put into another, with little adaptation required. This makes the code very reusable.

### An Example

Here is simple explanation of how things go in a simple MVC program. We take the example of a simple program, which has a textbox and a button. When you click on the button, the content of the textbox is capitalised. Here, let's enumerate the role of the model, the view and the controller.

- The model stores the contents of the textbox, and provides a way of accessing and modifying it. It also registers an event when this data is change.
- The view creates the visual part of the application, the button and the textbox, and the window in which they reside. It also registers an event when the button is clicked.
- The controller responds to any events generated by the view (or elsewhere), and modify the contents of the model. So

when the user clicks on the button, it responds to that event, and capitalises the textbox content stored in the model.

The same view can be used for a program which would encrypt and decrypt the contents of the text box, and the same controller can be used in a word processing program for providing capitalisation as a function.

Some kind of mechanism for updating the view in response to changes in the model should also be in place and this is where a framework comes in. Although it is possible to make it entirely yourself, why not let the framework do the grunt work for you?

### MVC Frameworks

MVC is not something you impose on your programs without a reason. For very small projects, or one time projects, it doesn't make much sense to adopt an MVC design. That doesn't mean you abandon any kind of pattern, just that this might not be suitable for the job. You can adapt the design to your own needs, for example combine the model and controller. Here are some examples:

- **Java Swing** : A toolkit for Java, this supports more than one MVC design, both at the application level and the component level.
- **Qt** : A very popular toolkit on which KDE, a major desktop environment for Linux, is built.
- **PureMVC**: A light-weight framework, which only imposes the design pattern, leaving the rest of the implementation up to the developer. Originally developed for Flash / Flex using ActionScript, however now available for many other languages such as Java, JavaScript, C#, PHP and Python.
- **GTK+**: Another toolkit made for Linux, originally for the GIMP, also the toolkit on which Gnome is built (Gnome is another major Linux desktop environment).
- **Cocoa**: The API for building applications for MacOS X
- **Cairngorm**: An MVC framework by Adobe for their Flex SDK.

### MVC - The Perfect Solution

MVC is by no means a perfect solution to all kinds of problems that come up during development. In many cases, adopting such a framework can be harmful.

Deciding what pattern to use depends hugely on what you are trying to accomplish and how. It is not that easy to decide whether to use MVC or not – it is a matter of experience. Although one can assume scenarios where using such a design may be appropriate and where it may not, it is difficult to create strict rules. Generally, small projects or those developed individually need not require such an approach.

### MVC Alternatives

Over time people with experience in software development see common traits, common problems that any project is bound to face irrespective of platform, language or purpose. It is using that experience that people have come up with many interesting ways to counter such problems, and MVC is only one of them. Here are some promising ones:

- **Model-View-Adapter**: it is similar to MVC, but additionally allows the same view to be used with multiple models instead of the other way around.
- **Blackboard system**: here the software is segregated by specialisation. It is similar to a group of specialists working on a problem on a blackboard. In a programming sense, different parts of the program are specialised for different tasks, and each iteratively updates a 'blackboard' containing the problem, till a solution is obtained.
- **IoC**: IoC stands for inversion of control. It is a principle of programming in which we invert the sequence of control. Instead of defining what part of your code will run what library function, you instead define what part of the library requires your code to run.

These are just some interesting examples of how one can think about organising their functionality. What you use should depend on what gives you the greatest flexibility and room for expansion in the domain of your project. ■

kshitij.sobti@thinkdigit.com





esc  
feature

Is the Batman's Tumbler road  
-worthy? How real is Iron  
Man's suit of armour?  
Read Cinematech to find out

32

# 2009: YEAR OF THE POPCORN

Siddharth Parwatay

As the New Year just about indolently commences, it's the perfect time to plan out your entertainment calendar with the biggest blockbuster flicks of 2009. Big budget seemed to be the trend in 2008 with hits such as *Iron Man*, *Indiana Jones*, *The Dark Knight* and *Hancock* dominating the box office. And by the looks of it, a spill over of this trend into 2009 is on the cards. You can probably say bye-bye to chick flicks (yeah, right! - ed) as 2009 promises to be quite a testosterone powered, guy-friendly year in

movies with the return of legendary film makers such as Martin Scorsese, Tarantino, and James Cameron with multiple macho offerings. Hollywood has also realised the audience's penchant for dark graphic novel adaptations this year. But don't be shell-shocked; for those of you who want some variety in your entertainment platter, there are a fair number of fun comedies and remakes too. Not to leave anyone out, pseudo-intellectuals can also rejoice; you have a smattering of those oh-so-obscure, controversial, unpronounceable ones that make for good conversation. So, without further ado here's a first look of a different kind...

## Watchmen

Although this list is not in any particular order, this one just had to be at the top. That's because we at Digit haven't been this excited about a movie since, err *Ben Hur*; no wait *Dark Knight*! "Why", you ask? Well what's not to get excited about? It's an adaptation of one of the world's most influential graphic novels, it's superlative film noir, and the plot revolves around a group of washed-up superheroes who reunite after a mysterious and possibly apocalyptic threat emerges. What's more, it's directed by Zack Snyder, so we can expect some of the same magic we saw in *300* (you mean rubbish? - ed). Apart from the movie itself, there is a whole lot of hullabaloo about the film living up to the comic book. Us geeks can be an unforgiving lot.

So while there are those who believe that a motion picture based on the Alan Moore/Dave Gibbons cult classic just cannot do justice to the comic, others are breath-

## Bring out the popcorn, hunker down on your favourite couch—2009 is here with movies aplenty

ing a sigh of relief that at least Zack Snyder is the one destined to direct it. Destined because several others including Darren Aronofsky and Paul Greengrass, have had to abandon the project at the drawing board stage.

So what can movie goers expect? A dark, gritty, intense, complex, action-packed experience that will definitely have your pulse up a few notches and give you a look into the world of the flawed superhero. It's really more of a murder mystery with spectacular visuals and superhero ultra-violent action thrown in for good measure. There's supposed to be a rather sexually explicit scene too. The film brings out how bizarre and screwy people would be if they put on masks and went about beating up baddies. You'll either be lost or spell-bound by the richness of the characters, their philosophical debates, and their origin stories. There are several to pick your favourite from too; the good-guy Nite Owl, the sexy Silk Spectre, the always intelligent Ozymandias, the omnipotent Dr. Manhattan and the one who starts it all — Rorschach. What is important to note here is that even if you are not a fanboy, you'll have extreme reactions about the movie. You'll either love it or downright hate it.

## Inglourious Basterds

Whats big about this one? Three reasons – Tarantino, Tarantino and Quentin Tarantino. There's also the star cast, comprising Brad Pitt, Mike Myers and Diane Kruger, but still the driving force behind all the hype is the famous director's solo return to film after wrapping up *Kill Bill* way back in 2004. But wait a minute, did it say Mike Myres? There's something funny going on here; we came across reports that the film originally was to feature an appearance by Adam Sandler. What's with the funny men? In any case, there's nothing funny about the plot of *Inglourious Basterds*. It follows a bunch of WWII-era Jewish-American soldiers as they embark on a campaign of terror by tracking down and brutally terminating Nazi commanders. The film is Tarantino's first attempt at a period film, but going by initial reports it's got his trademark stamp of controversy and path-breaking cinema all over it.

What can film buffs expect? Well the ladies can get some eye candy courtesy pretty-boy Brad Pitt. As for you guys, if you loved gritty war-time films depicting a few "band of brothers" on a mission (read *Saving Private Ryan*), you will surely appreciate this one. Mark a slot around August.

## Shutter Island

This film starring Leonardo DiCaprio and Ben Kingsley is based on the novel by Dennis Lehane that follows a pair of U.S. Marshalls as they investigate the disappearance of a criminally insane patient. The book follows Marshalls Teddy Daniels and Chuck Aule's (Dicaprio and Mark Ruffalo) visit to Shutter Island. While they are there to investigate the apparent disappearance or possible escape of a female inmate, they discover a sinister plot of illegal experiments being conducted on the patients under the guise of the cold war. (The book is set in the 1950s). To complicate matters further, a hurricane is approaching. We hope that the movie will be able to capture the book's suspense and the mind-numbing twist at the end.

With this one it looks like Martin Scorsese wants to bank on the success he got from having Leonardo star in his previous films, such as *The Departed* and *Gangs of New York*. Apart from the star cast however, Scorsese's winning streak should be more than enough for you to go and have a look at this one. And c'mon, who didn't like *Taxi Driver* and *Good Fellas*?

ESC



The first sequel ever made was 1916's "Fall of a Nation," a follow-up to D.W. Griffith's wildly successful 1915 feature *Birth of a Nation*

Scarlett Johansson and Mickey Rourke have become confirmed participants in *Iron Man 2*

26

The total number of movies based on Marvel Comics

### Sherlock Holmes

Don't worry, this is very much unlike the *History Channel* movies that you might've seen. Not to say that those are bad; this however is *rather* different. Guy Ritchie's own take on the classic, sees Robert Downey Jr. as the sword-slashing Holmes and Jude Law as a tough, no-nonsense Watson.

Strangely, it is based on a lesser known comic book by Lionel Wigram featuring the super-sleuth rather than directly upon Arthur Conan Doyle's books.

Guy Ritchie, who is highly acclaimed for movies such as *Snatch* and *Lock Stock...*, has had a life-long fascination for Sherlock Holmes' character. But will it be an action or suspense movie? We'll have to wait until the end of the year to find out. An added bonus that must be mentioned is Rachel McAdams as Irene Adler, a rather, ahem, infamous character from the original books.

### Public Enemies

From the director of *Heat* and *Miami Vice* comes an old school Cop vs. Crook thriller that tells the true story of a Depression-era bank robber, played by none other than Johnny Depp, and the FBI agent named to capture him — Christian Bale. The charismatic bank robber was famous for his lightning raids and was somewhat of a local hero for the downtrodden of that era. Much of the public's angst was directed at the banks themselves since they had plunged the country into depression. Perfect timing for such a movie right? The film is also somewhat historical with relation to the formation of the FBI.

Going by the kind of testosterone action thriller that was *Heat* (maybe not *Miami Vice*), this should definitely turn out to be one of the year's biggest movies. The slick trailer at least shows that the film looks way flashier than it actually might be, thanks to the super-star cast. Keep a lookout for this one sometime in July.

### Transformers 2: Revenge of the Fallen

The first *Transformers* seemed a tad juvenile, but then who are we kidding; robots that defy all known laws of physics and fold into neat little packages the size of matchboxes? It's gotta be taken with a pinch of salt. Even if the yellow robot can't talk and is much like a pet dog, the film was very visually appealing. The cascading sheets of metal combined with 80s metal, gave many a geek multiple joyasms. Let's hope this installment of the movie can live up to its predecessor and the hype. Reports suggest that it surely will. With around US \$200 million being spent on the production and a number of the scenes being filmed using IMAX cameras, the visual appeal will definitely be high. The film is also being shot all around the world including Egypt. Just imagine giant robots on the pyramids. Wow! *Revenge of the Fallen* follows Optimus Prime and his fellow Autobots (the good robots) as they attempt to rescue a kidnapped Sam Witwicky (Shia LaBeouf) from the villainous Decepticons. As for the cast you have all the guys from the first movie, but what we hope to see is more action, and certainly more of the ultra-curvey Megan Fox!

### S. Darko

This was somewhat of a pleasant surprise, since the original *Donnie Darko* is now considered by many to be the quintessential thinking movie, with its time loop plot and blurred fantasy. What comes to mind however is the fate suffered by *Butterfly Effect 2*. Yes, it fell flat compared to the original. Being die hard fans of *Donnie Darko* we obviously think a sequel is superfluous, but at the same time hope that it does well and more importantly does justice to the original. The film picks up seven years after the original film. It follows Donnie Darko's younger sister, Samantha (Daveigh Chase), who has found herself at age 17 with a broken family, mired in feelings of insignificance. That's all we'll tell you about the plot, lest we spoil it.

### X-Men Origins: Wolverine

Just the larger-than-life character of Wolverine is enough to pull crowds and interest in the movie. And to think that a whole film is dedicated to him is even better. We find Logan (played by Hugh Jackman) at a point 17 years before the first movie. The prospect of viewers getting to see how Logan became Wolverine, how he acquired his deadly claws, and cameos by future X-Men, will surely set internet discussion forums buzzing before the release. In fact, a teaser shows a boy (presumably Logan) drawing claws and mutilating a man against a wall. There is also the appearance of another favourite — Gambit. In some circles he is such a favourite that this might just become a curious case witnessed in *The Dark Knight*, with the Joker's persona overshadowing the lead — Batman.

### Avatar

Directed by James Cameron and starring Sigourney Weaver; no it's not an *Alien* sequel. But since so little is known about the movie we can't say for sure. What we can say however is that Cameron will bring this movie to life using the very best of cutting edge technology. One example is that they are shooting this thing with 197 cameras simultaneously! Going by his selective filmography, we're sure to have some ground-breaking, breath-taking visual effects, much like we saw in *Terminator 2*. The plot too is uncommon. It is believed that humans are the invaders in the movie. Yup we're the little green men trying to take over someone's planet. As long as it has enough to appeal to the mainstream audience, it could well be one of the biggest movies of the year. Still, since it's slated with a year-end release you'll have to wait a pretty long while for this one.





## feature

### Star Trek

The biggest achievement that this installment of Star Trek hopes to accomplish is breathe some new life into this dying franchise. Face it, trekkies need newer fans to join the ranks, don't they? Well this movie might be precisely that — a new cast to hook newer fans. Set at a time just before the beginning of the original TV series, great care is being taken to ensure the story fits into the Trek canon. We have a young James T. Kirk (not "captain" yet, we think) played by Chris Pine and Spock played by Zachary Quinto, before they unite aboard the USS Enterprise to combat Nero (Eric Bana), a Romulan from the future who threatens the United Federation of Planets. If all of that just confused you you're clearly not a trekkie. But that's OK, just wait till May to get in on the action.

### Crank 2

*Crank 2* sees Jason Statham reprise his role as the hero Chev Chelios. Wait a minute. This is not a prequel, so how is that possible? Didn't he fall to his death at the end of *Crank*? Turns out he didn't. Having miraculously survived his plummet, Chev now faces a Chinese mobster who has stolen his nearly indestructible heart and replaced it with a battery-powered ticker that requires regular jolts of electricity to keep working. Talk about realistic plots! But really, who cares? If going by *Crank*, which was in a true sense the most stylish, adrenaline-packed movie ever (literally because adrenaline was part of the plot), this new offering shouldn't disappoint. But since you never know how a sequel might go, at least Amy Smart has been thrown in for eye candy.

### G.I. Joe: Rise of Cobra

Even in India there should be a fair bit of nostalgia associated with G.I. Joe. Who hasn't played with 'em action figures and who can forget the cartoon? The movie should be a nice action-packed no-brainer for a fun afternoon with your old buddies. Directed by Stephen Sommers of *Mummy* fame, its got a stellar cast which includes Christopher Eccleston and Sienna Miller as well as Sommers' old *Mummy* pals Brendan Fraser and Arnold Vosloo. The story is set around G.I.O.E., an acronym for the Global Integrated Joint Operating Entity, which is an international force of operatives who use high-tech equipment to battle Cobra, an evil organisation headed by a Scottish arms dealer. Still nothing beats the prospect of seeing Snake Eyes and Shadow on the big screen, breaking each others little plastic limbs off. Oh wait, no plastic.

### Terminator Salvation

We come in somewhere around 14 years after the events of *Terminator 3: Rise of the Machines*. Christian Bale (John Connor) is now 30 years old, as he leads the resistance against the machines alongside wife Kate (Bryce Dallas Howard). Yup, there is no Schwarzenegger in this one, nor for the series of sequels this movie will spawn. It seems the Governor was too busy to reprise his role, so Roland Kickinger will be the principal Terminator machine out for John Connor's blood. The terminators in this

## Don't miss!

You'll find trailers and interviews for these movies on the Digit DVD



one are not going to be the advanced T1000s (liquid metal) or even the T800s, which was the one portrayed by Arnie in T2. The movie features older models, which somehow tie into the story. McG, the film's director, said this on the film's official blog, "there are Hydrobots that patrol the water, Transports that move human prisoners around, Harvesters that collect human beings as lab rats for Skynet and Aerostats that survey all that is going on with the resistance the world over. We've started shooting the T-600 — the bigger, grimmer, nastier version that preceded the T-800. Like Reese says, they're easier to spot but they pack a mini-gun and carry kick ass fire power. They're eight-foot tall killers that prowl the badlands looking for anything with a heartbeat to terminate."

Still, the plot of the movie is not that simple. With the appearance of a stranger, Marcus Wright, John must decide whether he is a friend or a foe. As Skynet, the sentient supercomputer leading the machine army prepares its final assault, Connor and Marcus both embark on a journey that takes them into the heart of Skynet's operations. Here a terrible secret behind the possible annihilation of mankind, awaits them. Dun dun dun...

### Fast & Furious

Well we can't say much about this one. It's the fourth installment in a franchise of movies that has spawned quite a few Desi Drag Demons. But whether this will be a worthwhile movie really depends on whether Paul Walker can come up with some more facial expressions or if Vin Diesel can pull off some killer stunts. What's confusing is that this is the fourth movie, but according to the storyline, it's supposed to occupy the third slot. What's that, like a mid-quel? Scheduled for a mid-year release, we hope this one has some nice action sequences to look forward to. Why it deserves a mention here is because the film is touted to be better than the original; more grittier, more "hardcore", and more unpredictable. We'll just have to wait and see for ourselves. ■

siddharth.parwatay@thinkdigit.com

Comedies		
<b>Adventureland</b> A typical Superbad-like account of youthful summer misadventures <b>The Informant</b> Well not really a laugh-out-loud comedy, but a black comedy starring Matt Damon. It's based on a true story about the world of agribusiness price fixing.		
Re-makes		
<b>The Taking of Pelham 123</b> The 1970s improbable tube train hijack caper redone <b>Birds</b> A remake of Alfred Hitchcock's strangest movie. There's talk of Naomi Watts and George Clooney in the starring roles. <b>Nine</b> Based on Federico Fellini's hugely influential 8½		
Other Picks		
<b>Push Based on the novel by Sapphire</b> A definitely controversial film intended to capture the raw, fierce energy of the book it's based on. The plot deals with the troubled life of a poor black teenager who's pregnant by her own father <b>Brooklyn's Finest</b> Richard Gere, Don Cheadle and Ethan Hawke in a gritty cop movie <b>New Moon - Sequel to Twilight.</b> Keep a lookout late this year.		



DIY



The best way to shoot a UFO video is to take a video camera with a powerful zoom lens and watch the skies with unending vigil

# Make your own UFO video

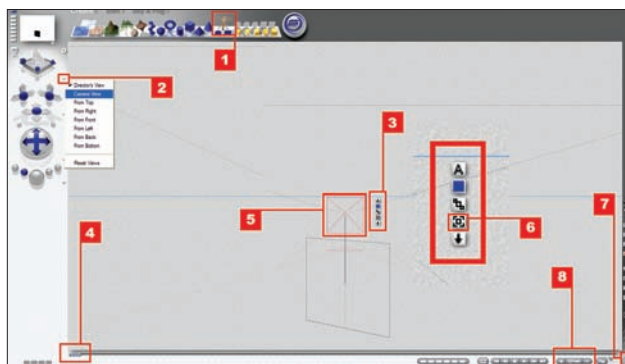
Whether you want to spice up your YouTube channel, or startle your friends with alien activity in the neighbourhood, we show you how to create your own UFO video.

Aditya Madanapalle

We will be using Bryce 5.5 to create a UFO video using a single photograph and a model of a UFO.

Importing the background image into Bryce is the first step. Click on the Vitruvian man icon in the objects ribbon (1). A window will open up with an image texture. Click on one of the empty boxes, navigate through the file system and select the background image. A skyline is preferable, but any photograph of a building with an amount of clear sky will do. Next, change the view (2). By default, the director's view is selected. What we will be doing is use the camera to track the picture, so that the viewpoint of the camera is aligned to the centre of the image, no matter how the camera moves. Click on the camera (5) to get a view of the Camera Properties box (3). Click on the tracking icon (6) and drag the thin line to the image you have imported. Now, change the view to the camera view (2), and move the view till your camera is in front of the image. Switch back to the director's view.

Now you will need a UFO. A variety of UFO models are available for free on the internet. Download a 3DS or OBJ file, as these are the most common. You can also use an image with a transparency, if a



The Bryce 5.5 interface

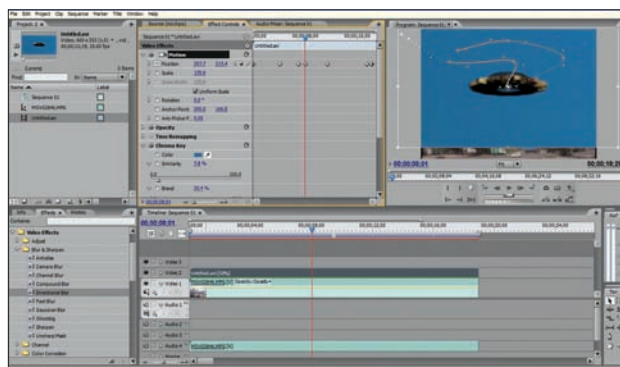
model is not for you. We created a simple UFO by flattening a sphere.

Position the UFO between the camera and the plane of the image. Make the UFO really small. Go to File > Render to get a preview of how the image will appear. Make sure you have selected the camera view. Now we will animate the UFO, and give it some movement. Drag the time-line slider (4), till you see about 10 seconds on the bar. This is the length of the video. Keep the video less than a minute, to save on the resources. The longer a UFO video, the more unbelievable it will be. To toggle the animation menu, click on view toggle (7). Click on the UFO, click on the (+) icon in the key-frame menu (8). This creates the first key-frame of the object, the initial position at the beginning of the animation. Now click on the time-line slider (4), and drag it to about 3 seconds. Click on the add key-frame button again, and move the UFO to a slightly different position, rotating if you want. Repeat this process for the entire duration of the animation. Also, assign slight jerks and shakes to the camera itself from the director's view. This will make it look like the camera was handheld, and the shooting was happening in real-time, although you are using an image. Since you have tracked the image, the image will stay within the view of the camera. You can click on the animation

menu, and select Auto Key as an alternative. This will allow you to use the slider and make changes directly to the key frames, without having to manually add each key frame.

Now we will move on to a slightly more advanced operation, one of superimposing a UFO onto another video. Go to your terrace and shoot a video of the skyline. Try to get moving objects like vehicles, birds and people. Next, use a UFO model in Bryce. Delete the ground, make the sky a plain colour using the Sky & Fog menu, and track the UFO with the camera. The background colour has to be different from the colour given to the object. We used blue as the background, with a modified gear preset from the object menu as our UFO. Now key frame the animation to rotate the UFO, but don't move this around the screen. Export this animation.

We will be using a video-editing software called Adobe Premiere Pro but you can also use previous versions of the software. The technique we will be implementing is called "blue-screening" or "green-screening" which is basically removing a particular colour from the video. Import the video you have shot, then the animation you rendered. Place the video on one track, and place the animation on the track above it. Now make the



Setting motion paths

UFO video layer really small. Select the Chroma key filter from the Video Effects menu, and select the background colour of the rendered animation. Tweak the similarity and blend sliders till none of the background is visible. You will also need to add a blur filter. Use either the Gaussian, Motion, or Camera blur filters or a combination of these.

Next, select the Motion effect in the Effect Controls tab, and assign key frames to the video. Drag the animation around the screen to create a path of movement over the video you have shot. Make sure you synchronise any movement in the camera with movements in the animation. This is the part where you need to sit down and fine-tune movements. The more time you spend in this phase, the better your results will be.

Most UFO videos do not need the surroundings, and are shot at night. These are relatively easy to manipulate, but the surroundings give an amount of realism to the video. Try superimposing UFOs on flight videos for better effect. An "authentic" video should have plenty of jerks and shakes. UFOs are also characterised by rapid and sudden movements. You can also try making them disappear and appear. Happy hoaxing! ■

aditya.madanapalle@thinkdigit.com



# F.E.A.R. 2

## PROJECT ORIGIN

Hell hath no fury like a woman scorned

Michael Browne

Up front let it be known that I was disappointed. And no, *F.E.A.R. 2* is not a bad game. Quite the contrary; it's better than the average FPS and boasts really nice graphics and a perhaps even more of the atmospheric eeriness that made the first game so unique. But for me the kill-joy was the actual combat experience. The original game had this very gritty, ultra realistic combat and weapon system that enthralled gamers. As a result, fire-fights were a frantic, visceral affair. The feel of a weapon recoiling, the thud of the bullets against enemy's body armour, and even the satisfying thwack of a well delivered gun butt were all elements that kept the realism going. If anything, *F.E.A.R. 2* has lost that visceral in-combat feel. Yes, guns still recoil, as do the baddies when they're hit, but the visible impact and the recoil system has been toned down a lot — the word *neutered* pops up in my mind for no apparent reason. Another component of game-play that contributes to the lack-lustre combat system is the audio component. Bullets just do not sound like bullets anymore. At first I wondered if all this was intentional, to keep the appearance of violence to a minimum. But it's hard to clamp down on violence and gore levels when there is a vengeance seeking psychopath with psychic powers on the rampage and the franchise was never meant to be docile.

Alma is back and this time she'll pop up even more frequently (and unexpectedly). In fact this is one of the areas where the game has improved, and will unnerve you at times. The ambient sound system coupled with your rather incapable flashlight means that tackling dark corridors are always going

to be a scary proposition. Any bump in the dark will make your heart jump and those heart-stopping moments when you suddenly come across Alma scuttling across a dimly-lit room will send shivers down your spine. One of the additions to the game is the use of HDR (High Dynamic-Range) lighting techniques (this term is used differently in the game industry from the way photographers would understand it). At times this is useful because it allows for complex-lit scenes. A certain room can be very brightly lit in the centre while a corner of the room could be totally dark. However, the bloom effects have been overdone in many places and it's obvious that developers still love to take liberties. In certain places the use of HDR seems annoyingly overdone and totally uncalled for. Imagine shotgun fire lighting up a dim corridor like a 100-watt bulb — what's up with that? There's a booo in the slow-motion system too. In *F.E.A.R.* the slow-motion system looked the part with bullets causing Matrix-style air ripples. All that has been changed, and the atmosphere takes on a weirdly blue-tinged look when you go into bullet time. Enemies also look like fluorescent figures. The effects are not as realistic as before, although there is more gore and dismemberment. Overall, this game doesn't feel as realistic as the earlier one.

So, should you play it and (more importantly) buy it? It would seem from this review that it isn't worth the time or the money since all I've done is nitpick. Well, that's my job. I try not to be too butt-retentive and judgemental when reviewing games, but to me, *F.E.A.R. 2* could have been so much more, if only the developers had kept the worthy parts of its predecessor around. Comparisons to its gene tree aside, however, it's a good game — immersive, atmospheric and fast paced. ■

michael.browne@thinkdigit.com

Min configuration: 2.2 GHz CPU, 1 GB RAM, GeForce 8 or Radeon x3xxx series GPU with 256 MB VRAM

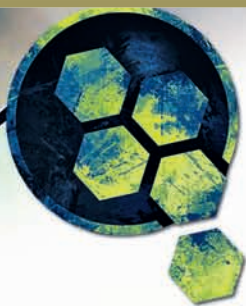
Score: 7.5/10







preview



# BIONIC C O M M A N D O

Kumar Jhuremalani

Imagine a a cyborg with a bionic arm — an age-old concept by none other than Capcom. The original *Bionic Commando* was released in 1987, and now in 2009, a new and significantly improved avatar of that classic is ready to take on the world. So we have another remake of a game, but how good is it really? We managed to get an early look at the game and played the training level and a part of the first level on the Sony PlayStation 3; here are our findings.

The story continues where it last left off, but this time *BioReign* has the city in chaos and has taken over completely. The game finds a cityscape in complete ruins with totally devastated sky scrapers. It's as if the city had been hit by a meteor storm or something similarly catastrophic; completely wiping it out. You play the original bionic commando Nathan "RAD" Spencer, who finds himself stripped of his bionics due to a series of events that take place after his involvement in some covert operations. The game reunites him with his bionic arm and he is the now only one who can save the city.

When we initially started this game, we hit the training level where you get used to the game's controls and your character's moves. The arm is primarily used as a grappling hook. This was the way the original played as well, but you couldn't really jump in that classic. However, jumping around is essential to play this new game. Not only is

your arm a weapon, but you get to perform some really cool moves and lift heavy objects such as cars; whipping them around to destroy life and property. Special moves will be highlighted on the right of the screen while using your bionic arm.

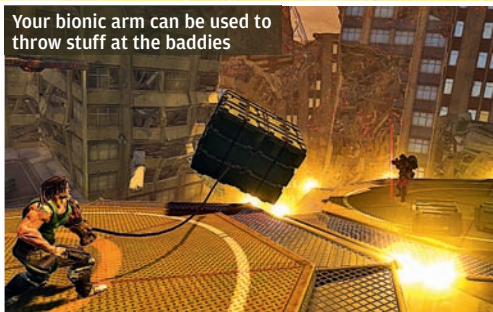
You also hold a weapon in your other hand, which, when you start off, is a pistol with limited ammo. It would have been cooler to see a huge weapon that could be attached to the bionic arm. Anyway, you can also zoom in with your side arm and aim using the other analogue control stick. Battles consist of a series of attack combinations where you can use the bionic arm and the pistols together.

There's a slight problem we feel is in the game — the bionic arm can attach to almost anything. Even if you're on broken roads you can use the arm to attach to the debris. This causes slight confusion when fighting the bad guys. But again, once you get used to the controls, this really won't be much of an issue. Another small thing is that the D-pad is used for quick turns, but you can't do a quick look up, which would have been helpful.

From what we saw, this game was looking really good on the PS3 and it's not even complete yet. We were informed that a better build with many more levels would be ready soon and the game is scheduled to launch in May 2009, for the PS3 and the Xbox 360. PC enthusiasts will have to wait a while longer to get their hands on this game. ■

kumarj@thinkdigit.com

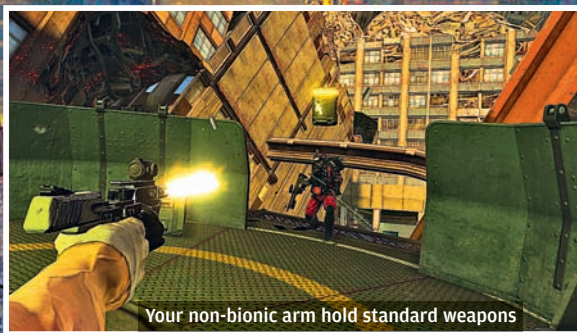
Your bionic arm can be used to throw stuff at the baddies



You also swing around the cityscape using your bionic arm



Your non-bionic arm hold standard weapons



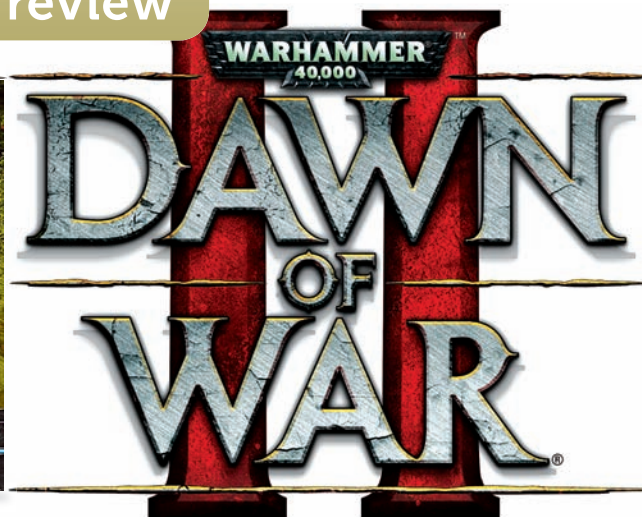
ESC





review

Publisher: THQ  
Developer: Relic  
Score: 8/10



## OH TO BE A SPACE MARINE AGAIN

Michael Browne

ESC

**S**tart with a few scattered units, build up your base, churn out units, and upgrade them and Boom! — attack and wipe out all the enemies on the map — typical RTS. However, *Dawn of War 2* (DOW 2) does not follow the standard operating procedure for an RTS game. In fact, the first few minutes had me thinking this was a game with an identity crisis of epic proportions — its no longer an RTS game! It is now what I call an action-RPG.

Yes, the fanatical space marines are still under your control and there are other races to wage war against however this time you will have no base from which to churn out units and you will be restricted to just four squads. Therefore, the single player campaign doesn't have you stomping around the map with terminator squads and predator tanks. Rather you will be in charge of a force commander and up to three specialist space marine squads.

The emphasis here is on squad tactics and manoeuvring your squads in and out of battles as well as using their special abilities with timely precision. Because of the few units under your control you will be seemingly hopelessly outnumbered most of the time. However, each of your squads is a small battle-ready and ultra capable war-machine on its own. While none of the squads are overpowering, the key lies in using their abilities cleverly and in conjunction with the abilities of other squads. For example, the force commander is a powerful *melee* unit capable of bringing much suffering to the enemy in hand-to-hand combat, but if he's tied up with close combat units and ranged units are sniping at him constantly, he will surely fall.

Enter the *scout squad* under your command headed by *Cyrus*, a veteran of many battles and one of the Imperium's most skilled scout masters. This squad can go invisible and can sneak up on a group of enemies and Cyrus can deliver some nasty surprises — stun grenades, fragmentation grenades, charged-up shotgun blasts, demolition charges, or even a long range, instant-kill sniper shot. Then there is the *Tactical Marine squad* — a diverse bunch led by a seasoned campaigner *Tarkus*. These guys are capable of *melee* and ranged attacks and soaking up some damage and therefore, best kept close to the force commander. However, when faced with hordes of enemies, you need something more, something to soften them up at longer ranges. Enter *Avitus*, the leader of the *Devastator Squad*, a group initially equipped with heavy bolters who can

simply open fire in an arc to mow down most enemies at medium ranges. In case your force commander needs a little back-up when getting up close and personal to the baddies, throw in a squad of *assault marines* who are close-combat specialists and another surprise addition to your team — no hints!

Most of the abilities are available in the form of slotted items and only the squad that has such an item slotted into its load-out can use it. Each mission garners more equipment, and sometimes abilities. The single-player campaign is rather long — although it seems quite interesting in the beginning, battling Orks and Eldar by the fifth mission or so you will be bored as things get repetitive. Kill this creature, defend that post — such are the missions and even the locales seem familiar after the first ten missions or so. The story of the campaign revolves around protecting the Space Marine recruiting worlds from rampant Orks who have been stirred up by the stealthy Eldar for unknown motives. As the plot unfolds, you find that a far greater threat in the form of the Tyranids emerge and the Eldar were trying to stop/delay them. The Tyranids are vicious and innumerable foes and they are motivated simply by the need to consume life from all planets, stripping them bare. If you can play through around 80 per cent of the missions you will find things perking up a bit as a couple of the missions are refreshingly different. However, we feel a better job should have been done for the sake of diversity.

Multiplayer is where *DOW 2* shines and you can play the single-player campaign in a co-op style game along with a friend. In fact, once you get into the multiplayer component you'll discover the hidden RTS in *DOW 2* as base and army building is familiar. We quite liked this mix of a single-player action-RPG and multiplayer RTS. As far as graphics go, *DOW 2* looks very nice; although the environments are rather ordinary, the combat effects and squad dynamics are really well done. The audio component is good with decent sound effects although some of the dialogues of squad members (after a mission for example) will become very repetitive. *DOW 2* isn't really heavy on resources, so this is one battle you can fight without cutting edge gear. ■

michael.browne@thinkdigit.com.

Min configuration: 2.0 GHz CPU, 1 GB RAM, GeForce 7 or Radeon x1xxx series GPU with 256 MB VRAM







## review

Sameer Desai

**S**ucker Punch is a studio best known for their Sly Cooper series on the PlayStation 2. After much success with their first IP, they've now turned their attention towards something more rooted in reality, but barely. InFamous is a superhero sandbox action game exclusively for the PlayStation 3. In it, you play Cole McGrath, a messenger in the fictional Empire City. A package assigned to Cole causes a massive explosion that rips through half the city, and mysteriously endows him with electrical powers. Soon after the explosion, the city descends into chaos and is run over by gangs. A plague outbreak then forces the government to barricade Empire City's residents in, leaving them to fend for themselves.

The game is essentially Cole's quest to get to the bottom of what happened to the city and how he was granted his special electrical powers. The story is told in the form of 2D comic book style

cutscenes, which work surprisingly well with the game. The two key gameplay components in InFamous are Cole's electrical powers and the morality aspect. Empire City is an open sandbox and Cole's newfound abilities also make him stronger and more agile, allowing him to make big jumps and easily negotiate platforming sections.

At the start of the game, Cole has limited electrical powers, which he is able to use in multiple ways. He cannot carry any weapons, so his melee attacks and electrical powers are all he has to fight the bad guys, or good guys, depending on how you play it. You can either zap individuals by shooting electricity at them or send an electrical shockwave through the ground, which will cause greater damage. You can also perform a similar, but more powerful shockwave when landing from a jump.

# inFAMOUS

There are more electrical powers that will be unlocked as you progress through the game, and you can even upgrade existing attacks to make them more powerful.

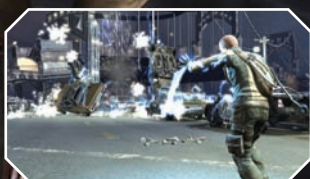
In case you're wondering, Cole has no other special powers besides zapping his enemies. And you can't carry weapons either so Cole is pretty much a one-trick pony. Cole's electrical powers aren't limitless, so every now and then you will need to recharge him. This can be done by sucking the juice out of electrically powered objects such as lamp posts, phone booths and moving cars. Recharging Cole's powers is also a great way to prevent him from dying when he takes too much damage.

Adding another layer to InFamous is the verticality of the environment. The platforming in the game is strikingly similar to Assassin's Creed; while it is scripted to an extent, it is free-flowing and a joy to watch. And Empire City has a lot of architecture to run and jump around. Think of it as Assassin's Creed set in a modern urban environment; only more interesting and with a storyline.

The most intriguing aspect of the game, however, is the morality — you can play as either the hero, or the anti-hero, and from the looks of it, the outcome of your decisions will affect the way the game progresses. It remains to be seen if these changes are superficial or really game-changing. For instance, early on in the game you have the option to allow citizens to collect food rations provided by the gang that is running the city. You can either let them have the food or fend off defenseless citizens and keep the food to yourself. We chose to keep the food, which immediately prompted the gang's leader to put a price on our head, thus turning many of the citizens against me. The outcome may well have been different had I chosen to play nice and let the people pick up their rations. The morality system is surprisingly deep and there are various levels on either side of the scale, each affecting how the game plays out. Your moral decisions will affect you visually as well. Playing the good samaritan will show Cole as a regular everyday messenger, but steer towards the dark side and you will see his clothes ripped and covered in dust, scratches on his visibly paler face, and the electricity within him will turn from blue to red.

Sucker Punch have also put a lot of thought into the design of Empire City; not just the architecture but the way its citizens run around dazed and confused trying to make sense of what's happening around them. If you can look past the fact that the only powers Cole has is electricity, which in itself is pretty damn cool, InFamous is definitely a game to watch out for when it hits stores in June. ■

[readersletters@thinkdigit.com](mailto:readersletters@thinkdigit.com)



Developer: Sucker Punch  
Publisher: Sony Computer Entertainment  
Genre: Action-Adventure  
Release: June 2009  
Platform: PlayStation 3





## review

Sameer Desai

It's hard to fit *Wheelman* into a particular genre. There is so much variation in the game that the only safe category it would fall under is 'action', and there is tons of that on offer here.

And you shouldn't expect any different with Vin Diesel playing the game's protagonist, Milo. Developed by Diesel's own Tigon Studio, the actor has been closely involved in the development of *Wheelman*, and considering the fact that the last game he was associated with was the cult favourite *Chronicles of Riddick: Escape from Butcher Bay*, expectations from *Wheelman* are quite high.

But while *Wheelman* meets expectations in certain aspects, it falls short on others. The game feels like an assorted platter of gameplay elements from various other games — *Driver*, *Pursuit Force*, *Burnout*, *Need for Speed*, *Grand Theft Auto*, and *Test Drive*, just to name a few — and it ultimately fails to create an identity of its own. Milo, played by Diesel, is a CIA agent stationed in Barcelona, Spain, and is tasked with infiltrating the underworld, comprised of three large gangs.

All of Barcelona is your playground in this mission-based, free-roaming game, where you are required to complete various

Score - 3/5

Developer: Tigon

Publisher: Midway

Genre: Driving-Action

Release Date: March 27

Platforms: Xbox 360, PS3

# WHEELMAN™



tasks for these three gangs. While most of the game involves driving, there are also missions that require gunplay, but these are extremely basic and only seem to be thrown into the mix to add a little variety. The auto-aim system, dull enemy AI, and cement blocks conveniently placed for cover make the gun combat segments a breeze, and you'll find yourself hoping to get back behind the wheel.

The driving missions on the other hand are quite engaging and varied. They include taking out other cars *Burnout*-style, air-jacking cars, chasing someone down on a two-wheeler through narrow alleys, and even stealth driving to avoid police detection. Air-jacking is possibly the coolest addition to the game, albeit lifted straight from *Pursuit Force* on the PSP. It basically lets you leap from your moving vehicle to another vehicle in front of you, thereby letting you carjack it while still in motion.

The driving mechanic is extremely arcadey and is designed to be easily accessible to those new to driving games. To make things even easier, you can perform melee attacks with your car. It's similar to how you would side-swipe a car in *Burnout* to earn a takedown, only that rather than having to come in with speed and momentum, all you need to do is push your right stick in the direction of your target, and your vehicle will violently propel itself in that sideways direction. It's not the most realistic addition to a driving game, but realism isn't something that the developers seemed to be aiming for either.

The game employs a focus-meter, which fills up when you drive fast, perform handbrake turns, or drive without crashing. Filling the meter up gives you a nitro boost. When the meter is completely full, you also have two style maneuvers added to your arsenal — the aimed shot and the cyclone. The aimed shot allows you to slow time down, similar to reaction time in *Need for Speed* games, and you can use your gun to pick off enemies that may be in your way. The cyclone is similar, but this is used when the enemy you want to take out is behind you. Activating cyclone will slow time down and

perform a 180-degree turn and allow you to shoot at your enemy before turning back around. Since most of the missions involve hostiles in vehicles, these attacks are vital to your success.

Besides the game's main missions, you also have a variety of optional side-missions, and this is where the game impresses with its depth. These side missions include *Midnight Club*-like checkpoint races, Taxi missions inspired by *Test Drive Unlimited*, rampage, a mode similar to *Cost to the State* from recent *Need for Speed* games, time trials, and more. The side missions, while not very original, are plenty and depending on how well you perform, you will be awarded a grade. Achieving the A grade in a side mission gives you added perks such as strengthening your vehicle, making it less vulnerable to hostile drivers, extra boost, etc.

While the story as well as the main and side missions are good, the game is ultimately undone by its inconsistent driving mechanics. There aren't too many vehicles in the game, yet the same vehicle will handle differently around every corner. The broken controls are best demonstrated in the Vespa chase mission, where pushing the left stick slightly will result in a sharp 90-degree turn. Maybe this was done to show the Vespa's limited turning radius, but you can't spring this on the player when the rest of the game is so blatantly arcade. In terms of presentation as well, *Wheelman* is left wanting. Dodgy frame rates make the game virtually unplayable at times (we played the PS3 version). Even when the frame rates do hold steady, the game is visually below average and something you wouldn't even expect from a console launch title.

*Wheelman* has some good ideas. Many of the missions are fun, the side missions and perks system add a lot of depth to the game, there are some cool driving maneuvers that you can perform, and even the story and voice acting is serviceable. But all of that is nullified by the clearly broken driving mechanic, which forms the core of the game. It isn't bad by any means, but coupled with the choppy visuals, it falls way short of the mark and ends up as a game that is hard to recommend. ■

readersletters@thinkdigit.com





unwind

## Symantec's Indian flaw

The BBC has uncovered a large credit card scam by Symantec's Indian call center.

## Geek culture : *Cyberpunk*

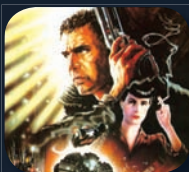
Cyberpunk is a genre of science fiction characterised by stories set in large futuristic urban landscapes in various states of decay. The government is usually a totalitarian and an oppressive one; the

main characters usually involve some kind of androids, hackers or black market vendors of illegal tech. It's a world where computers have a symbiotic relationship with humans, where technology is ingrained in every atom of the universe. Modern Fashion, gadgets and interface design all show cyberpunk influences. We have a look at the best cyberpunk works around.

Movies

### Blade Runner (1982)

Replicants, bio-engineered humans are not allowed to live on the Earth. Six of them escape, and an ex-Blade Runner is called out of retirement.



### Equilibrium (2002)

A world where emotions are illegal and suppressed by drugs administered by the government. A emotion police breaks free and changes the system.



### Strange Days (1995)

A film that explores the implications and repercussions of introducing Virtual Reality technology as a form of entertainment, to a large number of people.



Games

### Uplink (2001)

Uplink allowed you to roleplay a hacker living in a real world through the screen. Appropriately, a Linux version was also released by Introversion.



### Deus Ex (2000)

Play as a character in a futuristic dystopian world rife with disease, killer robots, biotechnology, nanotechnology, conspiracy and with a ton of choices to make during gameplay.



### Mirror's Edge (2008)

A runner in a futuristic city, you have to jump, slide and climb your way across the city run by a totalitarian regime, where all communication is monitored; on a trail of murders.



Music

### Kraftwerk - The Man Machine (1978)

One of the earliest electronica acts around, this album kickstarted a revolution spawning many genres of music and themes. Tracks include *The Robots*, *The Man-Machine* and *Metropolis*.



### Queensryche-Operation: Mindcrime (1988)

A progressive metal album, a story is revealed across the tracks. In a futuristic world, brainwashing techniques are used to train assassins.



### Nine Inch Nails - Year Zero (2007)

Based in a futuristic dystopian US, *Year Zero* is a concept art from the industrial rock act *Nine Inch Nails*. The CD itself changes colour at different temperatures.



## Digit Diary

Last month was pretty stressful for the whole team thanks to the Redesign. We're all still quite hungover from all those late nights working while fighting off the friggin blood sucking mosquitoes. Yes, we work out of a swamp. Stress is something that we deal with almost everyday and we all have our own ways of countering it. Kumar dreams of Anarchy Online while his benchmarks are running. Rossi wonders what it would be like to be a woman (he wont have to change his name for one) and Michael, err well Michael thinks of other things. The

movie balls of fury has all of us charged up about table tennis. Wagers made over the table reveal our driving forces, which ranges from coffee to chole bature. Soumya plays too, but closely resembles a Dinosaur when he's at it; with stunted hands, like flippers not extending beyond a few inches from his barrel-like body. In any case we're pretty happy we got the TT table in office. Next we'll try to get the management to install a Cola fountain for us! Why cola? Childhood fantasy perhaps, and it's freaking hot lately if you haven't noticed. Any whacky ideas for us on how to beat the stress? Send 'em in... Cheers!

How we unwind



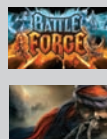
### Movies

*2 Days in Paris*: A quirky comedy  
*Donnie Darko*: Yup we love it  
*The Dark Knight*: Several re-runs on BluRay



### Music

*Buckethead*: Love the band, particularly the album *Colma*  
*Porcupine Tree*: Immerse into multitentacled progressive rock



### Game

*BattleForge* (Closed Beta): We love to control huge monsters and destroy things around us  
*Prince of Persia*: The great art style keeps us coming back



## x86 flawed

x86 chips are inherently flawed due to a vulnerability in the cache memory, that rootkits can exploit

## Wolfenstein caught

The Romanian police have arrested the hacker known as Wolfenstein who broke into the Pentagon way back in 2006

ESC

## Geek radio

NEWS

Who says radio has to be all music and only fun and games? It can be completely geeky too. Welcome to the quintessential geek radio, recently launched by the students of IIT Bombay. The radio station is web-based and its operation is completely in the hands of the student body. However, students don't really have a free hand about the kind of content they can have on the station. They'll have tread carefully and be politically correct about taking up sensitive issues and also about what they say about the institution itself. So what kind of geeky content can the erudite listeners expect? For the pilot show they had a book review, a travelogue, a *hasya kavi sammelan* (NOT Dead Poet's Society) and a programme on trivia. Ok, ok, to be fair it's not all that geeky. In fact they plan to have a fair amount of music which will consist of covers and original compositions from the many talented musicians on campus. The broadcasts are supposed to start post 10 pm on fixed days and will be available to all the 10,000 odd residents at the IIT Bombay campus. The radio is available at <http://gymkhana.iitb.ac.in/~cultural/radio/>

## Film about Pirate Bay to be pirated

NEWS

As the sensational trial against the guys behind Pirate Bay came to an end this month, Swedish filmmaker Simon Klose is already busy making a documentary centred around the same subject. What is ironic is that the film will most likely be pirated! But the filmmaker is OK about it. In fact he believes the industry should come up with a different revenue model in these changing times, and is certain there is a way to make money even if the film is offered as a free download. The trial proceedings in the Pirate Bay case have ended but the verdict is still awaited. The promoters of the popular Bit Torrent web site face up to two years in prison and \$1,80,000 in fines for alleged "contributory copyright infringement" for running the piracy web site. The piracy movement is strong in Sweden and the film will attempt to capture all of it. In fact it has spawned some sort of a sub-culture with people sporting the same long thin beard style as Svartholm Ward, one of the promoters.

## Lateral universe

### PRODUCT LAUNCH

Apple launches a new product — the amazing iPhone Shuffle. With stunning features like random dialling and intuitive no-screen calling, we're sure this product is bound to make waves in the tech world. Have fun calling random people.



## Tinyurl roulette

Do this right now. Go to the address bar of your favourite web browser, and type in <http://tinyurl.com/> followed by one of the codes below. In case you are wondering where it will take you — we are not telling; we probably don't know ourselves! Are you bold enough to find out?

Ruqv4	eqvrb	26xqkt
cj9r8f	5cymxf	cl9fo9
d9qprm	cb3xhf	csyptr
apebjl	ys3hvy	dcx8wp



## tech art



Image Credit: eBoy

Isometric Pixel art is a painstaking process of drawing a 3D image on a 2D screen, pixel by pixel and making sure that the scales of all the dimensions are the same. The illusion of depth is lost in this angle, where objects at any distance from the point of view appear as if they were on a plane. One of the most famous isometric pixel art artists around is eBoy. Head over to [hello.eboy.com](http://hello.eboy.com).

### for those who came in late

Muddled by so many terms used in the mag? Here's your short guide

**GUI Graphical User Interface:** A type of user interface which allows people to interact with electronic devices

**GPU Graphics Processing Unit:** Is a dedicated graphics rendering device for a Personal Computer or Game Console

**CGI Computer Generated Image:** A photo-realistic image or model, rendered using the computer

**API Application Programming Interface:** A set of routines, data structures, object classes and/or protocols provided by libraries or operating systems in order to support the building of applications.

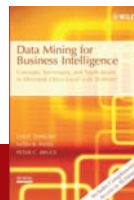
**HUD Heads Up Display:** The term comes from Aircraft terminology and signifies any transparent display that presents information without requiring the user to look away from his or her usual viewpoint. Used in gaming in a similar context.

**SDK Software Development Kit:** It is a set of development tools that allows developers to create applications for a certain software package, software framework or any other platform. Also known as "devkit"

**Hi-fi High fidelity:** Signifies reproduction of sound or visuals in a quality very close to the original performance



unwind



Send in your entries to [TQ@thinkdigit.com](mailto:TQ@thinkdigit.com) on or by the 30th of this month. One lucky participant will win Data Mining for Business Intelligence By Galit Shmueli, Nitin R. Patel and Peter C. Bruce

## crossword



### Across

1. The Greek god overseeing the activity of colonisation
4. The nuclear reaction in a nuclear bomb
7. USA's National Aeronautics and Space Administration
8. A hypothetical gateway between two black holes
9. The galaxy that is predicted to collide with the milky way in 3 billion years
11. The Bussard \_\_\_\_, a type of space rocket that converts interstellar hydrogen into fuel
17. The region separating the inner and the outer Solar System, is peppered with many of these
19. A time traveller
24. The farthest point in orbit of the moon, or any object in an orbit around the Earth
25. Adjective form, of Jupiter
26. The state of the universe before the big bang, or the centre of a black hole
27. Selfreplicating nanomachines that can potentially take over the world, or even the universe
29. A thermodynamic law, one that states that the universe will ultimately degrade
30. The closest star to the Solar System

### Down

2. The first mammal in space
3. One of the most famous spacesports, near Miami, launched Apollo 13
5. A type of jet engine that combusts air at supersonic speeds
6. The most common element in the universe
12. A period of time that comes to an end with a marked change in the geology of a planet, or the state of a universe
13. The symbol for the male sex is the same as the astronomical symbol of this planet
14. The first spacecraft to orbit Jupiter
15. What the LHC is looking for
16. Matter with the physical properties that are the opposite of normal matter
18. A moon in the solar system, with ice on the surface and oxygen in the atmosphere
20. Computing with a focus on people, the planet and profit.
21. India's unmanned moon probe programme
22. 1000 metres
23. A group of galaxies
28. Objects that radiate the most amount of light in the universe



'Agape Inc.' - Pioneer in Cyber Forensic & Cyber Security

Agape is an ISO 9001 : 2008, ISO 27001 : 2005, ISO 14001 : 2004, OHSAS 18001 : 2007 Certified Company  
www.aebi.in

## Data Recovery

- Disk Recovery
- Firmware Problems
- Bad Sector Problems
- Head Stack
- Platter Changing

## The One Stop Solution For Logical & Physical Data Recovery

### 1. Drive Diagnostics and Restoration

This stage helps in repairing the drives that go undetected or not responding. This solution can also be used for drives that can be accessed but produce null data. Being the primary stage of the DR flow, another use of it is to carry out all-round diagnose to the drive and decide which stage to go.

### 2. Disk Data Extraction

This stage deals with drives that have read inability problems because of physical/ logical bad sectors on SA and/or user area.

### 3. File System Rebuilding and Data Retrieval

This stage involves rebuilding the file system, retrieving the user data and verifying the integrity of the file.

### 4. Mechanical Component Exchange

This stage deals with physical damages of hardware components such as head stack & spindle motor, which can't be repaired but the only solution is to replace it with a working one.

### Agape Offers Products & Services

- Cyber Forensic
- Mobile Forensic
- Cyber Law
- Professional HDD Cloning Services
- Data Security
- Fraud Management
- Consultancy

#### Head Office :-

"Agape House", Pooja Apartment, 1st Floor, Duttawadi, Nagpur-440 023, Maharashtra, India.

Contact Rahul at :- 9765560676 and Vikas at :- 9765560677

Tel :- +91-7104-222812, Fax :- +91-7104-223971

Email:- [info@agapeinc.in](mailto:info@agapeinc.in)

SMS AGAPE to 54646



23-03-2009, 04:54 PM

#1

**BULLZI**

nirav soni  
Live off the  
Edge!!Join  
Date: Mar 2009  
Posts: 3

Hi,  
I m thinking of buying dell studio  
1555 laptop having following config-  
uration:  
Processor Intel® Core™ 2 Duo  
Processor P8600 2.40GHz/ 1066 FSB/  
3MB Cache)

Display  
15.6" 720p WLED (1366x76 Display

with TrueLife™ and Built-in 2.0MP  
Web CamMemory3GB (1X1GB +  
1X2GB) DDR2 SDRAMHard Drive  
320GB SATA Hard Drive  
Video Card 256MB ATI Mobility  
Radeon HD 4570

Price 47900 RS.

Will i be able to play games like

Crysis ,Gears of War , Fifa 09 or GTA  
4 on it?

Can u suggest any other notebook in  
similar price range have same conf?  
are their any issue in this model of  
dell?

Thanks in advance....



23-03-2009, 05:08 PM

#2

**BULLZI**

desibond  
Human Spambot



Join Date: Oct 2007  
Location: Bangalore  
Posts: 3,744

double okay

don't expect to play games like  
Crysis with full eye candy. You need  
9600M GT atleast

AMD 3000+ @ 2.3Ghz, 4x512Mb ddr400, gigabyte  
GA-K8n51GMF-9, 512MB HD2600XT, Dell 198WFP,  
160 Gb+250Gb seagate sata2, sony 20x dvdwr, pctx  
110i tuner card, vista home premium



Yesterday, 09:59 AM

#1

**BULLZI**

Sumeet\_naik  
Alpha Geek



Join Date: Oct 2005  
Location: KWR, KA  
Posts: 542



Max Payne 3

Rockstar has confirmed  
Max Payne 3 which is  
gonna release in winter  
2009.

Max Payne 3 is sequel  
to Max Payne 2. In this  
sequel Max is away from  
his city, New York. He's a  
few years older than he  
was in previous game.

Source - http://multiplay-

erblog.mtv.com/2009/...  
ly-developers/

Official Page - http://  
www.rockstargames.com/  
maxpayne3/

Twitter-Sumeet  
Digg-SumeetNaik  
Last.fm-SumeetNaik  
Blog- http://sumeetnaik.blogspot.com  
Lenovo Y410 775787Q.

Last edited by Sumeet\_naik; Yesterday at 01:04 PM.  
Reason: Automerged Doublepost



Yesterday, 10:37 AM

#2

**BULLZI**

utsav  
kidnapped



Join Date: Sep 2006  
Location: in your heart  
Posts: 1,764

Re: Max Payne 3  
The main character looks like  
leonidus from the movie 300

E7200 @3.4GHz|MSI8800GT @720/2050/1780|2GB  
TRANSCEND 800@900MHz|WD640GB+Seagate80GB|AS  
US 18x lightscribe sata|N82 Black 8GB|N73 ME  
|Sennheiser CXL 400  
www.techjunkiez.com



Yesterday, 11:22 AM

#3

**BULLZI**

zyberboy  
rā ānāāī kīñg



Join Date: Feb 2006  
Location: kerala/calicut  
Posts: 826

Re: Max Payne 3  
Good news,Maxpayne one of  
the finest action games ever  
created

Amd X2 5200+@ 3.0Ghz ,CM GeminII S,Asus M2N-  
E,Transcend 2Gb 800Mhz,Asus EN8600GT,WD320,Dell  
SE198WFP,  
Sennheiser HD201,Zeb 500W Plati,Zeb Antibiotic.





## Recycling incentives...

**N**Magazines like ours maintain lists of possible subjects for articles, and during the last few weeks I noticed two suggestions from our team that seemed to me should fit together – an article on the science of climate change and one on the general topic of green computing or green tech. This thought occurred to me just as I had become aware of the recycling campaign of Nokia. Being a Sony Ericsson user, I hold no brief for Nokia, but the company's efforts seem certainly to be genuine and not just PR mush – which is my opinion of much of the green PR hype that I hear. The result is the article in this issue that takes a critical look at green technology.

Another incentive to tackle this subject was my experiences with meeting hardware companies here in India (and elsewhere). Many of them tout green benefits of one kind or another, and I have this very annoying tendency to want to know what is meant by such claims. The answers have mostly been rather weak, and suggested to me that these companies were simply jumping onto a bandwagon. Some have also been amusing. An IBM environmental specialist spokesman in Bangalore showed me a slide of the world on fire. When asked what this implied, he mentioned global warming, of course. When I challenged him with the simple fact that the world has recently been cooling, he told me that all the servers and hard drives we were using were warming up the atmosphere. It's so good to meet people with such sound logic and deep understanding of their subject!

On the issue of climate change I wrote a couple of years ago to the leader of the opposition in the UK. I expected him not to agree with my views, but that was not to my mind the most important thing that came out of this; I would have enjoyed a well-informed debate, if he had been willing. Instead, the answer that I received showed an appalling lack of knowledge of the subject and a seriously simplistic approach. If all our politicians are so badly informed, then we really are doomed. If this chap ever becomes Prime Minister of the UK, I think I shall publish his reply on the internet.

Are politicians equally badly informed when it comes to considering other issues, such as genetic modification of foods, cloning and embryonic research, terrorism and security, licensing of medical practices, car safety legislation, energy security, food safety standards, etc., etc.? It's a worrying thought.

The local government in the area of my London flat started a recycling scheme about fifteen years ago, for paper and glass. Each flat can request a box that you can fill, and

these will be emptied once a week. I was one of the first to sign up, and I noticed that the takeup was very slow, and even now many of the local homes do not bother. There is no incentive, and governments are now thinking of creating punitive incentives to force people to recycle. And as for e-waste...

The situation here in India is a little different, with the rag-picking economy that had an equivalent back in Europe many years ago. There is no incentive to stop just throwing things away because somebody else will come along and collect it and sell it. Others do recycle, but because of the same incentive - if you hoard your newspaper, old clothes, plastic bags, and so on, you can go and sell these.

What is actually needed, both here and in the rest of the world, is for people not to need an incentive, but to be careful with waste and to recycle relevant materials because they see this as a good thing to do. Make the odd buck or two if you can, by all means, but we need to kill of the throw-away society, completely.

There are two sides to this. The obvious one is to be careful with items that are no longer needed, and instead of just throwing them away, make sure that they are properly recycled. The other side to this concerns the decisions we make when purchasing new products. It would help apply pressure to the industry if we all made recycling a major criterion. It may be impossible simply to refuse to buy any product when the manufacturer or dealer has no recycling scheme, but that is the direction in which we should head. Will I buy a Nokia when my beloved Sony Ericsson finally stops working? Well, Nokia will certainly be high on my list, and I shall enquire about recycling from whatever manufacturer I do consider. I would encourage everybody to act in this way, and apply good old market forces on the industry and try to bring about a proper recycling culture.

For my part, I shall certainly continue to ask every single hardware vendor that I meet just what provisions they have made for recycling, and this is an issue to which Digit will often return.

The only problem left unresolved in my mind, is this. How on earth do you recycle Al Gore...?

edward.henning@9dot9.in



Edward Henning, Editor-in-Chief

*"What is actually needed, both here and in the rest of the world, is for people not to need an incentive, but to be careful with waste and to recycle relevant materials because they see this as a good thing to do"*