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# Editorial

## Gaming Can Heal

IN SEPTEMBER 2005, a news item appeared on the Net about a study conducted by Dr Bryan Raudenbush of the Wheeling Jesuit University in the US, indicating that video games can be used effectively to distract from pain, if not actually relieve it. Raudenbush's study, called *Effects of Video Game Play on Pain Threshold and Tolerance*, examined the psychological effect of games on pain sufferers. Six genres of games—action, puzzle, arcade, fighting, sport, and boxing—were used in the study, where participants played games of each type for five minutes for practice, then a longer session for 10 minutes. Raudenbush concluded that playing games increased players' pulses, as well as their tolerance for pain.

Some of us might have read that news bit and rubbished it as yet another piece of quirky research—by, possibly, a gaming evangelist—or even as an industry-sponsored study determined to project the positive effects of gaming. So much has been written about the ill-effects—the negative psychological and physiological impact of games — on kids, that we look with suspicion upon any positive news on this front.

But it turns out that a piece of news from Reuters corroborates Dr Raudenbush's study. It highlights the use of video games to help sick children manage pain and anxiety during hospital stays. Nine-year-old Ethan Myers was declared brain dead as a result of a car accident in 2002. Doctors had said at the time that Ethan would never again eat on his own, walk or talk.

Now, due to neuro-feedback training on the CyberLearning Technology LLC system, often used to play car racing video games, Myers has caught up with his peers in school, and can even read out a speech to a large group of students. He has also re-learned to walk, and his memory now allows him to remember peoples' names. More importantly, Myers can now also fully open his right hand, which paralysis had curled closed. "In the last year, we've seen the Ethan we knew before the accident," says Howard Myers, the teenager's happy father.

CyberLearning's SMART BrainGames system, which was used by Myers, targets symptoms arising from brain injuries, attention-deficit hyperactivity disorder (ADHD) and learning disabilities.

Neuro-feedback treatment has been around for decades, but its use of video games is a new development that tries to capitalise on the younger generation's fascination with animation and electronics to sweeten often frightening, lengthy and tedious medical treatments. Some schools in the US are even using



**Deepak Ajwani** Associate Editor

**"A study highlights the use of video games to help sick children manage pain and anxiety during hospital stays"**

video games to combat obesity and have made it part of their curriculum.

All this research, I'm sure, has brought cheer to gaming enthusiasts—and also the gaming industry. Young gamers will now cite this research to their parents and justify their never-ending gaming sessions and the endless hours spent in front of the computer or gaming consoles. Sceptics, however, still question the efficacy and cost rationale behind this treatment. Despite the demonstrated benefits of neuro-feedback, paediatrics demand better-designed studies to help parents of children with ADHD make informed decisions.

It all does seem intuitive, though. Laughter is the best medicine because it's a stress buster—it's a momentary burst of release, so to speak. The gaming experience is similar: it's a brief period of escapism, of total release from the shackles of the world; it's "re-creation" in the true sense. And that is, naturally, good for you.

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#### 17-inch LCD monitors

Acer AL1717  
 Asus PM17TU  
 BenQ FP71E+  
 BenQ FP72V  
 CMV CT-712A  
 Gigabyte GD-1703BP  
 INTEX IT-1703

LG FLATRON L1730S  
 NEC AccuSync LCD72V  
 NEC MultiSync LCD1770NX  
 NEC MultiSync LCD1770NXM  
 NU QL-711V  
 Philips 170S  
 Samsung SyncMaster 740N  
 ViewSonic VA712

#### 19-inch LCD monitors

Acer AL1916W  
 Asus PW191  
 BenQ FP91V  
 CMV CT-937A  
 LG FLATRON L1950SQ  
 NEC AccuSync LCD92V  
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 Lexmark P4350 All-in-One  
 MSI MEGA 533 MP3 Player  
 Q2 Xda Atom  
 Discreet Combustion 4

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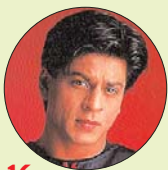
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## Enter



**16** Turns out everyone's favourite Khan likes tech toys!

**17** Looks as though soon, nothing tech will be secure—it's been proved that RFID tags can get infected by viruses

**24** Google has released their much-awaited OS! A brief look

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### 29 Renovating The Office

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### 40 ...And You Call Yourself a Gamer?

You're looking to buy a console. You're hunting for must-have games for your PC. Whatever it is, here's a compilation of the best games ever. IOHO, of course

## 34 Tech Transcends Tongues

Machine Translation is more far from perfect than you would imagine! Fun with online translators apart, here's a look at why Machine Translation is hard, and what the most promising approach for the future is



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## Digital Tools

### 51 Fandom Of The Opera

Many of you have heard the following: "Opera is the best browser out there." Is that true? If so, why and how? We get into how using Opera can significantly enhance your browsing experience

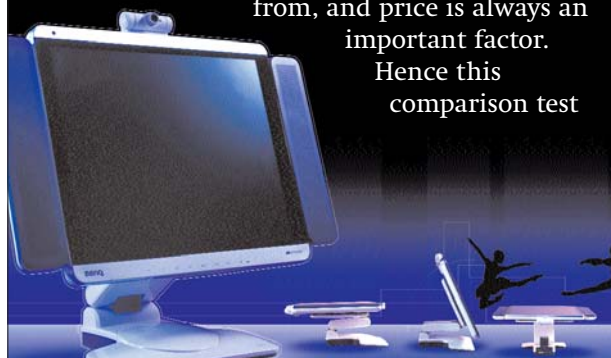


### 71 Know More About

Did you know you can view a Web page offline using Adobe Acrobat? Or that you could create a radio button within a document to link to another? Here's about some lesser-known pearls Acrobat offers

### 56 Flat Out!

Many of you are probably contemplating (finally!) making the switch to LCD. There's a reasonably wide variety of models to choose from, and price is always an important factor. Hence this comparison test



### 74 New & Notable

Apart from a great 'n' cheap MP3 player, the Video iPod, and an MFD, this month's New & Notable sees an in-depth look at the O2 Xda Atom—one of the most desirable PDA-phones out there—and at Discreet Combustion 4, which, as we say, "can do for video what Photoshop can do for images."



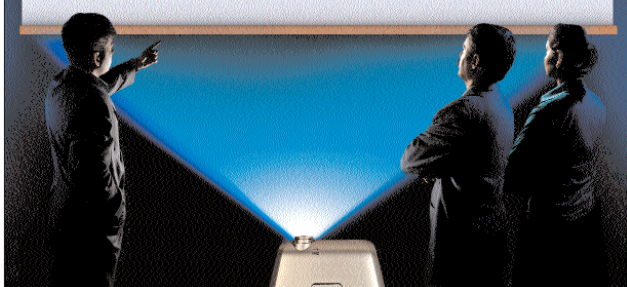
## Digital Business

### 99 A Step in Time...

Overclocking and recompiling kernels is tech for tech's sake. Here's a look at one shopowner who's actually used tech to the max, with the highest productivity returns per paisa spent—from a basic calculator to full-fledged databases on Pentium 4s

### 106 The Brightest Bulbs In Town

An LCD or DLP projector? And what make and model? A projector is a serious investment, and it's important you make the right purchase decision. Here's a comparison test that's sure to help you



### 120 Life @ 24 FPS

A career in animation is a much-hyped thing. Is it for you? What is it actually like? Is it about software expertise? We paint a realistic picture of the scene in India



### 102 Life In A USB Nutshell

We realised you don't really need to wait for the advent of widespread on-demand computing: you already can carry everything you need—your data as well as your programs—on a USB stick, and compute the way you want, where you want! Here's a guide on how to go about setting up your "USB rig," as it were

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A kiosk-based information system for villagers in Andhra Pradesh has seen tremendous response



### 130 Game On

Win money with *TrackMania Nations*, blow friends up in *Crashday* and cower in fear with *Call of Cthulhu: Dark Corners of the Earth*

### 126 Is Piracy Good?

No, we're not telling you that cracking WinZip is good! We're taking a broad view of the piracy phenomenon, and who benefits from it



### 152 Tabloid tech

The iPod has found its way to the Vatican. And you can now talk to Penelope Cruz—and other celebrities—via Skype, if a certain eBay auctioneer is telling the truth

### Escape



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Did Konrad Zuse "invent the computer"? Apparently

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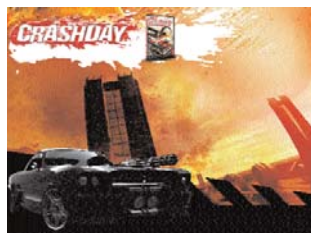
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## Crashday Demo



Crashday puts you in the world of stunts, dents and adrenaline: whether you prefer to smash your vehicle into pieces with breath-taking stunts or better still compete with your enemies in highspeed races on custom tracks

## TrackMania Nations ESWC Full Version



This special version features a brand new environment, the Stadium, and a revolutionary new gameplay designed for Nadéo's own custom cars

GAME  
Knights of the Temple II

## LINUX

- ▢ Byzantine OS
- ▢ Gentoo 2006.0
- ▢ Puppy Linux 1.0.8r1
- ▢ Epiphany
- ▢ Evolution
- ▢ Galeon 2.0.1
- ▢ GNOME Baker
- ▢ XFCE4
- ▢ Ubuntu 5.10



## MAC

- ▢ Audacity X 1.3.0b
- ▢ Christmas Super Frog 1.7
- ▢ JAlbum 6.2
- ▢ LimeWire 4.10.5
- ▢ LiveQuartz Image Editor 1.5
- ▢ Opera Browser 8.51
- ▢ Poisoned 0.519
- ▢ Transmit 3.2.1
- ▢ VLC Media Player 0.8.4a
- ▢ Data Rescue II 1.0.1
- ▢ Readerware 2.97

## DEV TOOLS

- ▢ Aurora XAML Designer for WinFX 8.3 beta
- ▢ JDDM (Drop Down Menu) 2.1
- ▢ NetBeans IDE 5
- ▢ Navicat 7.1.12
- ▢ NetBeans IDE 5.0 + Application Server
- ▢ 8.2 Bundle Installer



A Test Build of the Digit Software Archive was accidentally included on the March CD in Digital\_Tools/Essentials. If you've installed it, please stop using it - the interface is far from what it's intended to be, and the database included is an inaccurate collection of junk we used when testing the archive. We apologise for this error. You will find the newest version of the Digit Software Archive on this month's CD.

## DIGITAL TOOLS

## Adobe Audition 2.0



Record, mix, edit, and master digital audio files with powerful tools that bring flexibility and control to your desktop studio. Easily create music, produce radio spots, and restore imperfect recordings

## Corel DRAW Graphics Suite X3

With this comprehensive graphics suite, you can confidently tackle a wide variety of projects - from logo creation and Web graphics, to multi-page marketing brochures, or eye-catching signs



## Macromedia Fireworks 8

Fireworks 8 lets you balance maximum image quality with minimum compression size as you create, edit and optimize images for the web with precise control



## MULTIMEDIA

- ▢ ACID Music Studio 6.0
- ▢ Audio Cleaning Lab 10
- ▢ Movie Edit Pro 10
- ▢ ULead DVD Movie Factory



## INTERNET

- ▢ AceFTP 3.72
- ▢ BitComet Acceleration Patch 3.5
- ▢ DSL Web Hosting 2.5
- ▢ Fastream NETFile FTP/Web Server 8.1.5
- ▢ ICQ 5.04
- ▢ MSN Messenger 7.5
- ▢ SmartFTP Client 2.0.995.10
- ▢ Yahoo! Messenger with Voice 7.5 (Beta)

## PC-cillin Internet Security 2006

Trend Micro PC-cillin Internet Security 2006 combines award-winning antivirus security and a personal firewall—for comprehensive protection against viruses, worms, Trojans, and hackers



## SYSTEM

- ▢ NVIDIA Forceware Drivers v81.98 (WinXP) (February 2006 release)
- ▢ ObjectDock 1.2
- ▢ Style XP 3.16
- ▢ Download Acronis Disk Director Suite 10.0
- ▢ Virtual CD 7.1
- ▢ WindowBlinds 5

## DIGITAL BUSINESS

## ABBYY FineReader Professional Edition 8



Ideal optical character recognition (OCR) application for users who demand the highest level of recognition accuracy and format retention. FineReader allows you to convert and edit a variety of paper and electronic files, including magazines, newspapers, faxes, and PDF files

## PRODUCTIVITY TOOLS

- ▢ Adobe Acrobat 3D



- ▢ 3i Asset Information Management 1
- ▢ ResiGo 4.1.2250
- ▢ Adobe Acrobat 7.0 Professional
- ▢ BillQuick Lite 6.0.124
- ▢ MDAemon 8.1.4
- ▢ Microsoft OneNote 2003



## PORTABLE SOFTWARE

- ▢ Portable Firefox 1.5



- ▢ Crazy Browser
- ▢ Essential PIM 1.7
- ▢ Miranda v 0.4.0.3
- ▢ MPUI
- ▢ Portable AbiWord 2.4.2
- ▢ Portable Thunderbird 1.7 Beta



- ▢ PStart
- ▢ Portable OpenOffice.org 2.0.1



## MOBILE APPS

- ▢ Calc98 (Windows CE) 5.3
- ▢ Nokia PC Suite Version 6.7 release 22
- ▢ Photogather for Palm 7.0.3
- ▢ Handy Tools 2005 for Sony Ericsson 1
- ▢ MAGIX Ringtone Maker
- ▢ PocketPC Sport Games Pack 1.1
- ▢ Mobiledit Lite 1.99



## DIGITAL LEISURE

## SMALL GAMES



- ▢ Bejeweled 2 Deluxe



- ▢ Chuzzle Deluxe



- ▢ Igggle Pop
- ▢ Big Money
- ▢ Alchemy Deluxe

## MOBILE GAMES

- ▢ PopCap Game Pack 1 - Palm, Pocket PC and Windows Mobile

## VIDEOS

- ▢ ATL



- ▢ Ice Age 2 - The Meltdown
- ▢ She's The Man



- ▢ Stay Alive





## DIGITAL PASSION

### NetBeans Mobility Pack

The NetBeans Mobility Pack can be used to write, test, and debug applications for the Java Micro Edition platform (Java ME platform) technology-enabled mobile devices



### VistaDB Suite 2.1.4.4

VistaDB is a 500KB footprint embedded SQL database for building robust, small



to midsize database applications under .NET, .NET Compact Framework and Win32. VistaDB is the #1 alternative to Jet/Access, MSDE, and SQL Express 2005

## DEVELOPER TOOLS

- ▀ Absolute Color Picker 3.0.2
- ▀ ActiveX Control Pad 1.0
- ▀ AIOCP (All In One Control Panel) 1.3.001
- ▀ Basic4ppc Desktop 2.05
- ▀ Blasm IDE 1.08.09 build 0032
- ▀ Blockstar Website Builder 2.3
- ▀ JXHTMLEdit 4.0.005
- ▀ Klorofil Platform 0.2
- ▀ RSS Wizard 2.4
- ▀ Splash Screen Component 1
- ▀ SQL Packager 1.4
- ▀ Windows AMD64 Platform - J2SE(TM)
- ▀ Development Kit 5.0 Update 6

## LINUX

### Damn Small Linux



DSL has a nearly complete desktop, and many command line tools. All applications are chosen with the best balance of functionality, size and speed. Damn Small also has the ability to act as an SSH/FTP/HTTPD server right off of a live CD

### Kplayer

KPlayer is a KDE media player based on MPlayer. With KPlayer you can easily play a wide variety of video and audio files and streams using a rich and friendly interface that follows KDE standards

- ▀ Amarok
- ▀ Drupal 4.6.x
- ▀ Flubox
- ▀ GNOME Sensors Applet
- ▀ Icewm
- ▀ Kbear (Graphical FTP client)
- ▀ Kconfigure
- ▀ Kplayer
- ▀ MailScanner 4.51.4
- ▀ Musicman (music manager for KDE)
- ▀ Opera 8.52

## DIGITAL TOOLS

### 3B Browser 2.1.1



A wonderful new way for broadband users to experience the Web, 3B is a free, downloadable browser that renders the Web as a 3D city of display windows, each showing a different site

### Macromedia Shockwave Player 10.1.0.11

Flash lets designers and developers integrate video, text, audio, and graphics into effective experiences that deliver superior results for interactive marketing and presentations, e-learning, and rich Internet applications



## MULTIMEDIA

- ▀ AdvancedDVDPlayer 1.34
- ▀ AV MP3 Player-Morpher Basic 2.0.112
- ▀ Unreal Media Server 4
- ▀ QuickTime Alternative 1.68
- ▀ Zortam Mp3 Media Studio 5.95
- ▀ DivX Create 6.1

## INTERNET

- ▀ Ares Galaxy 2
- ▀ BitMeter 3.5
- ▀ Crazaa 0.16
- ▀ CrazyTalk For Skype Video Lite 2
- ▀ Drazie Toolbar with Anti Spyware 4.6
- ▀ DVD Cover Searcher Pro 3
- ▀ Limewire Pro 4.10.5
- ▀ Serence KlipFolio 3 beta C
- ▀ Turbo Internet Booster 1.1

## SYSTEM

- ▀ DigiCat 1.03h
- ▀ ExamDiff 1.6n
- ▀ Intel Graphics Media Accelerator Driver 14.4
- ▀ Partition Logic 0.61
- ▀ Realtek AC97 audio driver package a3.84
- ▀ SendTo Commander 1.2
- ▀ SysJewel - 2.1
- ▀ TaskPatrol Personal 2
- ▀ TightVNC 1.2.9
- ▀ TweakNow RegCleaner 2.6.7
- ▀ SafeIT Desktop Security Suite 2006
- ▀ ZipRecovery 1.5

## ESSENTIALS

- ▀ .NET Framework 1.1
- ▀ Avast Home Edition 4.6
- ▀ Digit Software Archive 2006 Beta
- ▀ Irfan View 3.98
- ▀ Kazaa Lite Mega Codec Pack 1.40
- ▀ ZoneAlarm 6.1.737
- ▀ Opera 8.53
- ▀ Spybot Search & Destroy 1.4
- ▀ Winamp 5.2
- ▀ WinRAR 3.51
- ▀ Adobe Reader 7.0.7
- ▀ VLC Media Player 0.8.4



## DIGITAL BUSINESS

### Trend Micro OfficeScan 7.3

Trend Micro OfficeScan is normally used to protect business computers from viruses and spyware but TRV Security offers its unique TRVProtect managed service to home and business customers



### nPOP

nPOP is a small and fast POP3 email client. When you first connect using nPOP, only the headers are downloaded. From the header list, you can select the emails you want to download for viewing



### Portable NVU

Nvu is a web authoring system (like FrontPage or DreamWeaver) that features WYSIWYG editing of web pages, integrated file management via FTP and tabbed editing that makes working on multiple pages a snap



## PRODUCTIVITY TOOLS

- ▀ AceMoney Lite 3.8.3
- ▀ ChoiceMail Free 3.1
- ▀ GeSWall 2.1.4
- ▀ In/Out Board Agent 2.0.2248
- ▀ Remote Queue Manager Personal 3.12
- ▀ 602PC Suite 4.2
- ▀ Trend Micro OfficeScan 7.3
- ▀ WinOrganizer 3.0

## PORTABLE SOFTWARE

- ▀ µTorrent
- ▀ ClamWin Free
- ▀ Foxit PDF Reader
- ▀ GreatNews
- ▀ i.Ftp
- ▀ i.Scribe
- ▀ MyZipppa
- ▀ nPOP
- ▀ Portable NVU

## MOBILE APPS



- ▀ Microsoft ActiveSync 4.1
- ▀ Mobile PhotoPleasure 1.7
- ▀ ACDSee Mobile for Palm OS 1.2
- ▀ Mobile Tangrams 1.0
- ▀ MiM Lite B (Eng) 1



## DIGITAL LEISURE

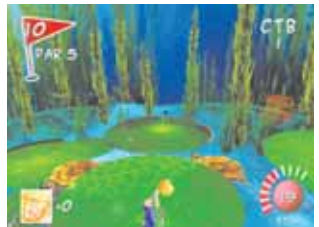


## SMALL GAMES

### Gianas Return

Giana's Return is based on a game called "The Great Giana Sisters. Try to solve each level in time, collect diamonds to get an extralife and try to gain extra items such as the Stonecrusher, the lightning or the pineapple

### Putt Nutz DX Demo



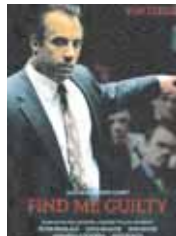
Putt Nutz is a fast paced, over-the-top 3D Miniature Golf game for 1 to 4 players

### Race Cars The Extreme Rally



Drive the super fast race cars and see if you could have been or perhaps still can become the world's best racer. This fabulous 3D game will put you to a test of speed and skill

## VIDEOS



- ▀ Find Me Guilty
- ▀ Take The Lead
- ▀ Slither





## By Demand

You get to choose what goes in *Digit* Interactive. This month, you chose:  
**Autodesk 3ds Max 8**  
**Ulead DVD Movie Factory**



## Digit Patrons

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## Digit Reader Poll

## This Month's Question

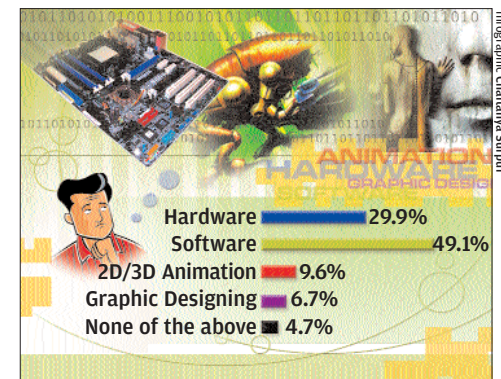
What do you most look  
 for in a cell phone?

- ☐ Camera
- ☐ Music Playback
- ☐ Screen Size
- ☐ Form Factor
- ☐ Music Playback
- ☐ PDA Capability
- ☐ Battery Life

Log on to **www.thinkdigit.com**  
 and vote!

## Last Month's Question:

What career would you like to pursue?



Total votes **5,869**

Due to technical errors the February poll results published in March 2006 issue were illegible. Here are the results:

**Q. Where do you primarily get your news from?** ☐ Television **44%** ☐ Newspapers **44%** ☐ I don't follow the news **4%** ☐ Visiting Websites **5%**  
☐ Feeds and e-mail newsletters **3%**

Total votes **3,483**

taste technology at **www.thinkdigit.com**

There's something for everyone on the Digit Forum [www.thinkdigit.com/forum](http://www.thinkdigit.com/forum)

The time now is Fri Mar 24, 2006 11:18 am

View unanswered posts

Share your views with the Digit Community, exchange tips and tricks, look for previous Digit issues, etc.

Forum	Topics	Posts	Last Post
<b>Feedback</b>			
<b>IMPORTANT: Forum Rules</b> All members are REQUIRED to read the rules mentioned in here before registering or posting!	1	2	Mon Feb 28, 2005 2:00 pm Reaabo
<b>Digitized</b> Interact with Team Digit members. Tell us what you think about the magazine (articles / sections), DVD contents and Web site. What you liked, what you didn't, and what you expect to see in the future... Moderators: Moderators, Administrators	51	4653	Fri Mar 24, 2006 9:42 am vignesh
<b>News</b>			
<b>Latest News</b> This forum is for members to share the latest technology news with others. Make sure to post the SOURCE at the beginning of every post. Moderators: Moderators, MemberMods, Administrators, Trusted Members	393	2708	Fri Mar 24, 2006 10:56 am QuertyManiac
<b>In General...</b> Anything that doesn't fit into the other sections—from upcoming technology to personal anecdotes—should be posted here Moderators: Moderators, MemberMods, Administrators, Trusted Members	2252	36695	Fri Mar 24, 2006 11:12 am garv4gar
<b>Across The Board</b>			
<b>Open Source</b> A place where you can talk to like-minded people about the fastest growing software movement today!	1314	10403	Fri Mar 24, 2006 11:15 am



## Gates Mocks \$100 Laptop

Bill Gates has mocked Nicholas Negroponte's \$100 Linux-based, wind-up powered laptop: "Geez, get a decent computer where you can actually read the text, and you're not sitting there cranking the thing while you're trying to type." Gates says cell phones are what will popularise computing in developing nations.



## Wire-Free And Free

Skype is going wireless! Netgear plans to soon introduce a Wi-Fi phone that can handle Skype calls from any wireless hotspot. Developers for Skype are also working on new versions of their software that can work on the OSes of regular cell phones.



# Enter

## Shahrukh Khan

Actor

**S**elf-confessed geek, The Khan hardly needs introduction.

### How much do you surf?

I'm not a "casual surfer"—I don't surf for the sake of surfing. At the point where it just started out, when we had telephone lines and the strange sounds—that was the time I was excited about surfing. Now I just use it for research.

### What are your favourite gadgets?

I always roam around with a couple of laptops, and I always have a digital camera—stuff which I normally use. The whole idea of gadgets, I think, has been demystified by the laptop—you just need to have one and everything is at your beck and call.

### Do you tinker with video editing?

I do edit my home videos, but very, very slowly. I won't get a job as an editor, but I do know my way around Final Cut Pro and use it quite often.

### Do you think it's time for movies to be shot in the Digital Video (DV) format?

No, I really don't. I think we still need the grainy quality that film cameras give us. I'm not questioning movies like *The Phantom Menace*—I think it's outstanding—but as a film viewer, I wouldn't want to watch something that's so... bland.

### Gaming?

I play games with my kids, hardly on my own. We have a PS2 and an Xbox, and we are waiting for the PS3 to release.

## HOPPING ON THE BANDWAGON

# Intel To Debut Ultra-Cheap PC

**C**hipmaker Intel will soon pitch a very low-cost PC at the developing world. The proposed machine will be priced at "meaningfully lower" than \$300, and an announcement should follow in some weeks, according to William Siu, Vice President and General Manager of the Channel Platforms Group at Intel.

In an interview with CRN (Channel REseller News), Siu said the proposed system would provide full PC functionality to "take advantage of all the software and content" on the Internet. Past attempts to develop a \$100 PC have "missed the point,"

according to Siu: he said they're too limited and that they can't be loaded with extra software. Siu claimed they're more like PDAs than PCs.

Remember AMD's PIC—the Personal Internet Communicator? It was launched back in 2004, and the specs went AMD Geode GX500 CPU, 128 MB of memory, a 10 GB hard disk and an inbuilt modem—running

Windows CE. The idea was to bring Internet access to much of the third world. There are suppliers in several countries for the PIC, but the PIC hasn't been too much in the news after its launch.

Better known than the PIC is, of course, Nicholas Negroponte's \$100 laptop. The One Laptop Per Child (OLPC) organisation hopes to have it out late this year or early next year. It has had more than its fair share of criticism, and we'll have to wait to see if the project does deliver even a laptop per 10 children.

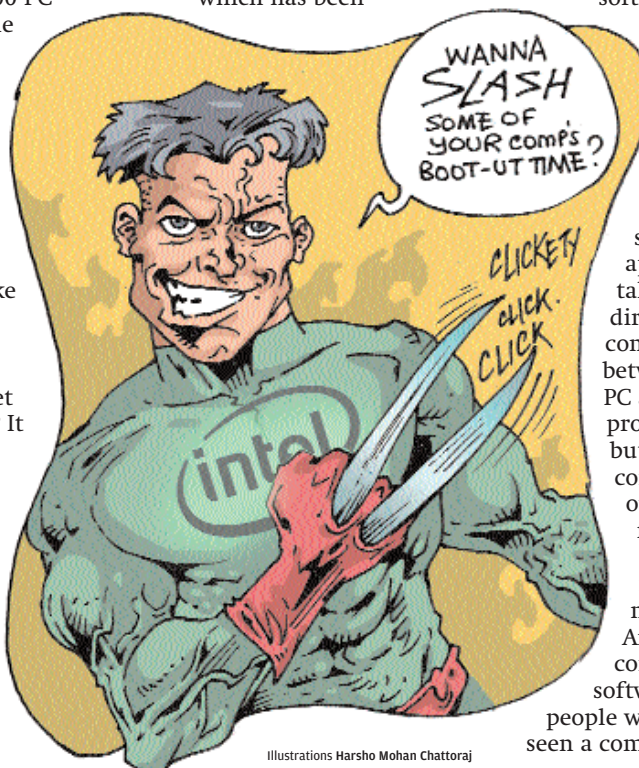
Then, of course, we have our home-grown Simputer, which has been

around for a long while now—too long, actually: it's always waiting to take off. Other flopped attempts have been made in the past, as well, to bring "low-cost computing to the masses,"—the much-banded phrase. But will Intel go where no company has gone before?

"The purpose of owning a PC is to be able to access content and to utilise the software available out there," said Siu. "So giving me a product that is under-served does not address the reason why you want to even own the product... what I've described is a full-function PC that can take advantage of all the

software and content."

In the rural Indian context, \$100 (Rs 4,500) and, say, \$250 (Rs 11,000) are significantly far apart. We're not talking about a direct competition between the \$100 PC and Intel's proposed offering, but it comes to content, what our villages need is basic connectivity, not streaming multimedia. And when it comes to software, are people who haven't ever seen a computer likely to



Illustrations Harsho Mohan Chatterraj





## Security Watch

### Flash And Shockwave Vulnerabilities

#### The Problem

There is a security vulnerability in older versions of Adobe's (formerly Macromedia's) Flash and Shockwave players.

If you use Windows, you are more or less sure to have Flash on your system—whether or not you recall having installed it.

The program was redistributed with XP Service Packs 1 and 2, and with Windows 98.

The problem affects Flash Player versions 8.0.22.0 and earlier. To see what version you have installed, go to [www.macromedia.com/software/flash/about/](http://www.macromedia.com/software/flash/about/).

Shockwave versions 10.1.0.11 and earlier also have the problem. To check what version you have, go to [www.macromedia.com/shockwave/welcome/](http://www.macromedia.com/shockwave/welcome/).

#### The Damages

This is a critical update. If you have an older version installed, and you click on specially-crafted Flash or Shockwave links, a malicious attacker could hijack your browser and even take complete control over your computer.

#### The Solution

Update Flash Player by visiting <http://www.macromedia.com/go/getflashplayer8/>. To update your Shockwave Player, visit [www.macromedia.com/shockwave/download/](http://www.macromedia.com/shockwave/download/).

want much beyond what is available on OLPC's laptop, which includes a browser, e-mail client, word processor, IM, image viewer, media player, a programming tool, ...? Also, the fact that the \$100 laptop is hand-cranked cannot be dismissed.

Intel must have a good reason for getting into this market; how do they see the situation? What will dominate—the need for more software and content, or the price point? And most importantly, of all the offerings on hand, will any succeed in empowering the last billion?

#### POTENTIAL FOR HAVOC

### RFID Tags Virus-Prone!

A group of Dutch researchers has discovered—and warned—that RFID tags can indeed be infected with viruses. A group under the guidance of Andrew Tanenbaum at the Amsterdam Free University made the world's first RFID malware publicly available for analysis. In a proof-of-concept paper presented at the IEEE Conference on Pervasive Computing and Communications on 15 March, the researchers warned that infected microchips could corrupt RFID databases and cause "major chaos" at airports and supermarkets.

It was widely presumed that RFID tags could not

become infected with a virus, because they only have a limited memory capacity. The group of researchers discovered that if certain vulnerabilities exist in RFID software, a tag can be purposefully infected with a virus by a prankster or criminal, which could infect the backend database used by the RFID software. From there, it can easily spread to other RFID tags.

In one scenario outlined by the researchers in the paper, the RFID-augmented labels used to expedite baggage handling can be targeted by a malicious person to cause chaos in busy airports.

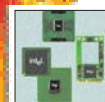
"Consider a malicious traveller who attaches a tiny RFID tag, pre-initialised with a virus, to a random person's suitcase before he checks it in. When the baggage-handling system's RFID reader scans the suitcase at a Y-junction in the conveyor-belt system to determine where to route it, the tag responds with the RFID virus, which could infect the airport's baggage database," the researchers explained.

"Then, all RFID tags produced as new passengers check in later in the day may also be infected. If any of these infected bags transit a hub, they will be rescanned there, thus infecting a different airport."

And thus, within a day, hundreds of airport databases all over the world could be infected! An RFID

#### HOT

#### Centrino Duo



Two cores are better than one, and the Centrino Duo has, well, two cores! The second core results in a performance increase of 30 per cent, and the processor features very efficient power-saving thanks to the lower operating voltage

#### Centrino

Why would you invest in technology that is three years old



and that has no deep sleep state—as in Centrino Duo? The old Centrino also consumes more power for the same workload compared to the Duo edition CPUs

virus could also carry a payload that damages the database and, for example, helps drug smugglers or terrorists hide their baggage from airline and government officials.

The findings mentioned above are controversial right now, and there might not be reason to get panicky. The trade association for automatic identification and mobility, AIM Global, has attempted to refute the key findings of the Dutch researchers.

"Many of the basic assumptions in the paper overlook a number of fundamental design features necessary in automatic data collection systems and good database design," asserted Dan Mullen, president of AIM Global.

Mullen suggested that



## One Silly Question

### "What would you exchange your computer for?"



"Definitely designer clothes"  
Tanvi Ambavi



"A nice sports bike."  
Madan Bangale



"Loads of jewellery"  
Shruti Parekh



"Nothing short of the Sony Ericsson w800i"  
Asim Narsinh



"Three wishes?"  
Raveena Uchil





## The Digital World

A Round-up Of Technology News From Across The Globe

## UNITED STATES

San Francisco hopes to have a city-wide Wi-Fi system up and running before September. Libraries, retail stores and hotels throughout the city provide Wi-Fi to patrons, but cyber-café make up the majority of the city's hotspots

## ISRAEL

National Internet Safety Day was celebrated on March 9. The Day is aimed at raising awareness about the dangers of the Internet and how one can avoid them. Thousands of parents participated in the event, which highlighted the dangers the Internet posed to children

## CHINA

US tech companies eyeing China face a dilemma: while keen to tap a market that could soon eclipse America's, they must also worry about the perception that they're helping China harass dissidents. US companies must satisfy a government that fiercely polices Internet content

## JAPAN

Older customers have found the Nintendo DS user-friendly. The latest titles let players study English, raise a virtual puppy, or converse with animals in an imaginary village



## NIGERIA

Africa is turning into a digital dump. Recycled computers have the potential to help bridge the digital divide. African countries are a robust market for such equipment. But experts in Lagos say as much as 75 per cent are "junk," which is accumulated or burnt in dump sites



## AUSTRALIA

Australian Internet users are crawling along the Internet compared with other developed nations. Per head of population, Australia's broadband Internet speed was just over 1 Mbps. This compares to Britain (13 Mbps), France (8.4 Mbps), Germany (6.85 Mbps) Canada (6.8 Mbps) and the US (3.3 Mbps)

the researchers built a system with a weakness and then proceeded to show how the weakness could be exploited. "(It's not surprising that) poor system design, whether capturing RFID tag information, bar code information or keyboard-entered data, will create vulnerabilities," he said.

We must stress that the findings by the Dutch researchers are under the microscope. This may turn out to be just another research paper, and this piece of news might just be forgotten a few months from now. But we'll have to wait and watch.

## VERSUS MICROSOFT

## Google Adds Online Word Processor

Apart from the fact that Microsoft has revved up its search engine, the latest in the Google vs. Microsoft saga is that the former has added another tool to its

growing online-services repertoire with the purchase of Upstartle, a Silicon Valley startup that makes an application called Writely.

Writely is basically a word processor embedded into a Web browser. It's still in beta form. The Writely application lets users compose and edit documents online. Amongst the formats supported by Writely are Word, OpenOffice, HTML, and plaintext. One can view a document's revision history and roll back to earlier iterations. In addition to basic document-creation features, Writely gives users the ability to collaborate online—one can grant access to a document by adding people to the document's list of contributors; one can also publish to most of the popular blogging sites. Visit [www.writely.com](http://www.writely.com) for more details.

Writely beta was launched in August 2005 and is "far from perfect," according to a blog posting by Jen Mazzon, formerly of Upstartle and now a



## Three Incredibly Useful Sites

IM, Radio, Career Skills

## meebo



## www.35.meebo.com

Meebo is where you should head for if you don't have any popular messengers installed on your system and still wish to chat. Yahoo!, Hotmail, or AIM—this site allows you to chat freely from within your browser. You can chat even if IM ports have been blocked! Messages are transmitted from port 80, which cannot be easily restricted.

## MindTools



## www.mindtools.com

"The Internet's Most Visited Career Skills Resource," the site calls itself. Here, you can learn the practical skills needed to excel in your career. The site covers the most common skills—from time and stress management, information skills, memory improvement, problem solving and decision making to creativity and more. All these sections are covered in-depth, with practical examples.

## LIVE365.COM



## www.live365.com

If you're a music buff with a broadband connection, here's a Web site you must tune into! There are thousands of Internet radio stations listed here with different bitrates to suit your connection. Tune into stations based on genre, search for music, and listen to Podcasts. Access costs \$9.95 (Rs 440) per month, but it could be worth it.



# Beat That!

## Digit Caption

"Microsoft download centre?"

## Last Month's Winner!

Om Awasthy, Deeptinagar,  
Bhagalpur, Bihar

"Gramophone XP"



E-mail your caption with the subject 'Beat That', and your postal address, to [beatthat@thinkdigit.com](mailto:beatthat@thinkdigit.com) and win

**Computer Security**  
by Ditter Gollmann  
Published by

**WILEY-INDIA**



We Came across this amusing pointer at the recently held CeBIT 2006 in Hannover, Germany

Each month, *Digit* will carry a caption for a photo. Come up with something funnier, and beat the *Digit* team at their own game! Entries accepted by the 15<sup>th</sup> of this month.

Photograph Deepak Ajwani

spokeswoman for Google's Writely team.

As of now, Google plans to offer individual access to Writely for free, but the company will probably roll out extra features that require a paid subscription.

Corporations will have to pay a licensing fee to access the service.

"This is an interesting addition to Google's collection of productivity tools," said Melissa Webster, program director with the Content

Technologies research group at IDC, a premier global provider of market intelligence. "They already offer e-mail, calendar options, and photo services, so it makes sense for them to add word processing for creating and managing Web content." The drawback, of course, is that more content has to be stored on Google's servers.

Also, as Om Malik, well-known blogger and the analyst who first reported on Google's purchase of Upstartle said, "Convincing the masses that their documents will be safe, especially with all that has been going on lately, may be quite challenging, even if it's free."

## FLASH-BASED BOOTUPS

# Intel Confirms "Robson"

Current hard disk access times mean we often have to sit staring at an LED waiting for a game to start up or for a system to boot up. And when it comes to notebooks, spinning hard disks mean power consumption. Both these issues could be resolved if, as Microsoft has proposed, hard disks had Flash memory inbuilt. But that means increased disk prices, of course. Intel's idea—of adding a Flash

memory cache to the system itself—is materialising.

The chipmaker is set to launch an industry-wide initiative to encourage the use of NAND Flash in computers in a bid to boost boot times and enable improved power savings. There are several types of Flash memory, but NAND Flash forms the core of removable USB drives.

Rumours of the Intel-developed technology code-named Robson have been in the air for some time, but Intel confirmed the technology in mid-April. Sean Maloney, Executive Vice President and General Manager of the Intel Mobility Group, has described Robson as a "NAND Flash-based platform accelerator."

Robson provides a standard module ready to slot onto a motherboard. The OS startup data is loaded onto the on-board Flash chips to reduce boot times: after the first boot, the only time the system would start up from the hard drive is when the startup code or





## GENDER



## BENDERS

Vidya vs. Ashwat

## Minesweeper: How fast can you sweep 30 mines?



After we'd explained the logic of Minesweeper to Vidya, she was game for the challenge, all eager and everything. As we'd expected, she began by clicking a box at random, and proceeded to guess them from around that box. After landing on a mine at every second click attempt (ouch!)-and realising she'd been doing something wrong-she attempted a sweep. Lady luck made up for Vidya's initial loss of time, and apart from the logic she'd seemed to have applied, a couple of random clicks took her safely home.



"Why not?" said Ashwat when we asked if he would play Minesweeper while being timed against Vidya. We set a target of 30 mines, and Ashwat started with a random sweep of clicks. His first two clicks opened up only a couple of boxes, but with his third click, his field was one-third cleared. He then turned cautious, and we could see he was going about the task logically! Ashwat reached a stalemate with 16 squares to go, but a lucky random click proved a saviour. A blink later, he was through.

procedure has changed. In such a case, an updated copy of the code would be written to Flash for the next time.

In a separate development, Intel is putting in place the Open NAND Flash Interface (ONFI) initiative, which will aim at developing a standard method of using and

implementing a Robson-like system in PCs. ONFI is supposed to take care of most of the details, allowing notebook manufacturers to easily implement the technique in a cost-effective manner.

Windows Vista is expected to support a very similar approach to chopping time off the

boot-up process. And by the way, Intel happens to be a player in the NAND Flash market.

## THE ULTRAMOBILE PC

## Microsoft's Origami: Still-Born?

Much hype surrounded the word "Origami" early March, and it was shrouded in much mystery. In fact, "origami" was the most-searched-for term on blog search engine Technorati for a while in March. Speculative photographs of Microsoft's latest device sprouted on several gadget sites. And finally, it was revealed that Origami is an ultramobile PC (UMPC). Most of the details are now in, and though it was expected to retail at between \$600 (Rs 27,000) and \$1,000 (Rs 45,000), Samsung is scheduled to ship the first pieces in April, with a model called the Q1. It will be priced much higher than initially reported, at \$1,200 (Rs 54,000). This will be followed by one from Asus in June. Others will be released in Asian markets later.

So what is a UMPC? It's something like a shrunken Tablet PC, offering most of the functionality of a full-fledged PC on a small package. Microsoft claims it can be carried around easily, but at 2 pounds and 7 inches, it's too large for a pocket: perhaps in the side pocket of a backpack.

Specs-wise, the Origami concept sounds OK: Samsung's Q1 will come

with a 900 MHz Celeron M processor, 512 MB of RAM, and a 40 GB hard drive. The touch screen has a resolution of 800 x 480. It also has a CF card slot, two USB ports, a single Ethernet port and stereo speakers. There's also Bluetooth 2.0 and Wi-Fi b+g. The bells and whistles you're likely to see on UMPCs include digital TV-Tuners, Web cams, SD card readers, fingerprint readers and GPS capabilities. All this in something in the range of eight inches. And for input, one can use the touch-screen or the stylus, or connect a keyboard via USB or Bluetooth.

As for the OS, UMPCs will feature new software called the Windows Touch Pack, which allows you to customise the interface and makes applications more touch-screen-friendly. What about Vista? According to a Microsoft FAQ, "UMPCs that meet the Vista hardware requirements will be compatible with the new operating system."

Essentially, the device sounds like a cross between a Pocket PC and a Tablet PC. Battery life is only 2.5 to 3 hours. If the price is, say, \$800, folks are likely to find it too high—because it's not as small as a PDA, and it's not big enough to be, for example, a "proper" gaming device. Who needs this when you can have a PSP? What kind of market would it find? Perhaps as a wireless Web surfing device. Perhaps as a portable movie player, like the Video iPod, only larger. But why not a laptop if laptop functionality is what you want? Well, there's a ton of opinions out there. For

## AM2

Socket AM2 is an upcoming platform that supports new 940-pin Athlons, the highlight being support for DDR2 running at 667 MHz and 800 MHz. This platform breaks the limitations that socket 754/939 had, and supports more than 4 GB DDR DIMMS.

AM2 promises to increase working memory frequency and bandwidth, which in turn will enhance overall system performance. Though the socket AM2

platform supports 940 pins, it is incompatible with older 940-pin Opterons. AMD is expected to launch two dual-core CPUs for Socket AM2 on June 6, 2006: the Athlon 64 X2 5000+ and Athlon 64 FX-62. AM2 technology with the supported processors is expected to reduce power consumption and also heat dissipation, which AMD has been aiming to achieve for some time now.

**Buzzword**  
of the MONTH



**GHOST****What is GHOST?**

GHOST is the new OS from Google. It has been released to select Gmail users in the United States by special invitation, since the 'Rest Of The World' is not important to Google. (Just kidding. Google wants to take over the world, even the part of the world outside the United States.)

**When will GHOST be available?**

It's already available in the US. As for when it will be available in India, how are we supposed to know? We suppose it depends on when real "broadband" comes to India.

**Why the silly name?**

You can pronounce it as either "gee-host," or just "ghost." It's not a silly name, anyway: the word "GHOST" is an acronym for "Google Has an Operating System, Ta-daa!"

**How does GHOST work?**

Like everything Google, GHOST is very easy to use. It's something like grid computing. All you need is a ridiculously fast (by Indian standards) broadband connection. All your files, details of all your interactions with the system, and so on, will be stored on Google's servers. You just start a GHOST session and compute what you like, when you like. Google even has plans to host free pornography on its servers.

**Where will GHOST be used?**

Dumb question. It will, obviously, be used all over the world, including in the Democratic Republic of Congo, which, for the geographically challenged, is in South America.

**Who is reading this?**

If you've read thus far and gotten excited, you're obviously the butt of many practical jokes! Going by guesses on the Web, a Google OS is not expected anytime this year. It could be next year, though. Stay tuned to this space, and you might see something interesting next year. To ensure that you are the first to know, we suggest that you get yourself a *Digit* subscription. Oh and by the way, "Nyaaah nya nyaaaaaah nyaaa nyaaaaaahh, April Fool!"

example, if a corporate IT buyer needs their workers connected, a BlackBerry is probably a better option.

BlackBerry, cell phone, iPod, laptop, all rolled into one—and then shrunk. Is this a different kind of MFD? Unfortunately, no. It doesn't do any of those functions properly—it's not small enough, not large enough, not specialised enough. We're hard pressed to think of what kind of individual would want a UMPC.

**"SPREADING CULTURE"**

## File-sharing Embedded In Swedish Mindset

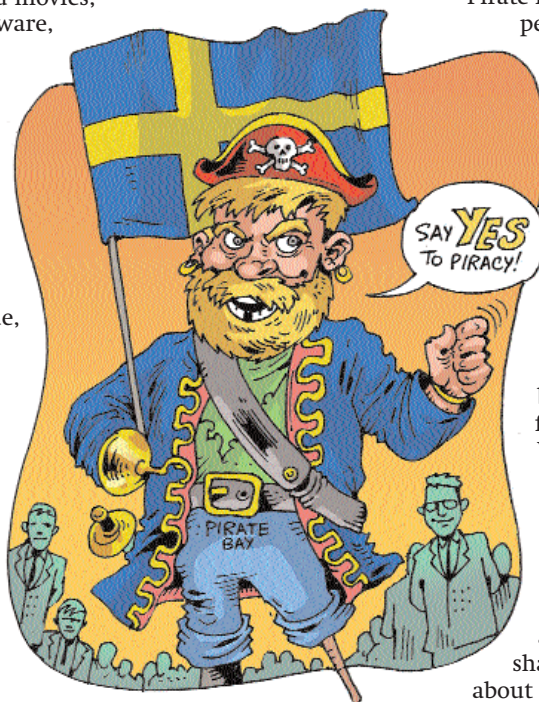
The Pirate Bay ([thepiratebay.org](http://thepiratebay.org)) is the world's best-known source for (illegally) traded movies, games, music, software, TV broadcasts, and anything else you might care to add to that list. A BitTorrent client is all one needs to tap into the grid, and much of the world's broadband community is doing it. As an aside, we reported some time ago in this space that Australians prefer to get their dose of American TV shows on time using BitTorrent, instead of waiting for them to be released on TV.

Sweden is file-sharing paradise, and the country is spreading the joy. According to an analysis on Wired.com, "All of us who run The Pirate Bay are against the copyright laws and want them to change," said "Brokep," a Pirate Bay operator. "We see it as our

duty to spread culture and media. Technology is just a means to doing that." That's so radical, we don't know if they really mean it, but The Pirate Bay repeatedly insists that that is their agenda.

The site today claims 1 million *unique* visitors a day. The Pirate Bay's legal adviser, law student Mikael Viborg, said the site receives 1,000 to 2,000 HTTP requests per second on each of its four servers.

In Sweden, The Pirate Bay is the flagship of a national file-sharing movement that is generating an intense national debate. The Bay's apparent immunity to threats by content providers and the MPAA is attributed to the structure of the BitTorrent protocol. The site's servers provide only "torrent files," which by themselves contain no copyright data, but only pointers to sources of the



content. Naturally, then, The Pirate Bay's activities are perfectly legal under Swedish law. "Until the law is changed so that it is clear that the trackers are illegal, or until the Swedish Supreme Court rules that current Swedish copyright

law actually outlaws trackers, we'll continue our activities. Relentlessly," Viborg is reported to have proclaimed.

The legality of the trackers is a topic of debate in Sweden. Polls indicate that more than 10 per cent of the population shared files in the last quarter of 2005.

The group that founded the Bay—*Piratbyrån*—is taking to grass-roots activism and political legitimacy. *Piratbyrån* today has 57,000 registered members committed to its belief that file trading is a means of sharing culture and making new art.

Now here's something way out: the Pirate Party has 1,500 members, and has gathered enough signatures to participate in the Swedish general election in September. The government estimates there are 1.2 million file sharers over the age of 18 in Sweden, and the Pirate Party needs only four per cent to get seats in the parliament. If elected, the Pirate Party promises to strengthen Swedish privacy protections, weaken copyright laws, and roll back government surveillance legislation.

Will Sweden become a precedent for other countries? When will the file-sharing-being-legal debate be resolved? Will the MPAA and other such groups formulate new strategies in the war against illegal file-sharing? And what about the current generation—10 years from now, will the broadband-enabled world think of file-sharing as essentially a good thing? Or is all this limited to Sweden with a population of only 10 million? The debates continue, and probably will for a long, long time. ■



For one week every year, this small town in Germany becomes Mecca for everyone who has any reason to care about technology - business or pleasure.

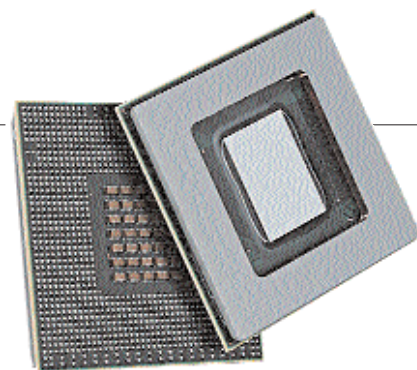
We took a walk through the twenty-seven ridiculously massive halls to bring you some of our favourites from CeBIT 2006



## Enter The Cell

A part from the very cool product name, IBM's Cell promises to leave current processors coughing dust in the near future. They've crammed about 234 million transistors in the teeny space of 221 square millimetres, clocked it at 4 GHz, and taken it to a peak performance of 256 GigaFlops. Compare that to the AMD X2, which can only manage 25 GigaFlops, and you'll understand what the fuss is about!

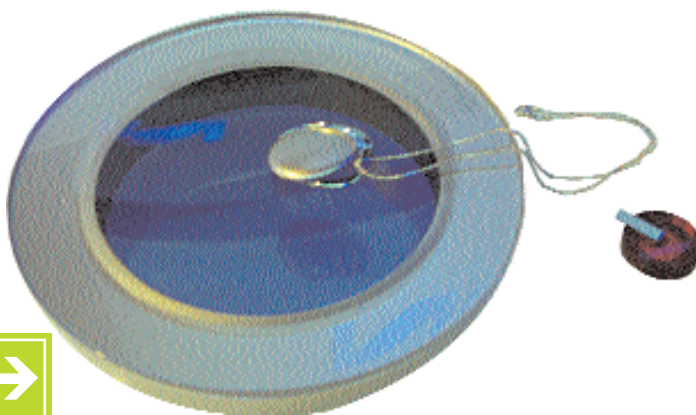
How does it do this? The Cell has - hold your breath - nine processor cores! One 64-bit PowerPC, helped along by eight Synergistic Processing Elements (SPEs), makes The Cell the ultimate processor for intensive gaming and mul-



timedia applications.

Just to show off its capabilities, IBM had it render a realistic human heart that visitors could view with 3D glasses and rotate it interactively. They could even make cross-sections of the heart as they pleased. All this -without even using a graphics card-

Bet Apple's feeling pretty silly for ditching IBM now! Welcome back ~Big Blue~, we've missed you!



## Nostalgia And RFID

Do you still look fondly at that watch you got for your birthday so many years ago? In their Resonantware display, NEC showcased a few visionary technologies for the future, including this neat concept called SALA. The idea revolves around the fact that the

many trinkets we own are associated with fond images from the past. So what did NEC do?

By embedding RFID tags in the said trinkets, each of them will be associated with its own set of images and videos, and by placing the object in a tray with an inbuilt display device will now bring up those memories. So if you were to bring in the old watch we mentioned you'd see pictures of the birthday



## Crap-tastic Product Of The Year Award



The Charming way of Communication", they called it. If you can't get enough for the good old phone headsets (the kind you only see in phone booths these days), and love your cell phone too, this one's perfect for you.

Retrostar's classic headset plugs into your cell phone's hands-free to give you the feeling that you're back in the 80s while still using twenty-first century technology.

You also get a version which plugs into your PC for VoIP calls.

Sensible people dismiss the idea with a cruel laugh, but for all its uselessness, we still want one!



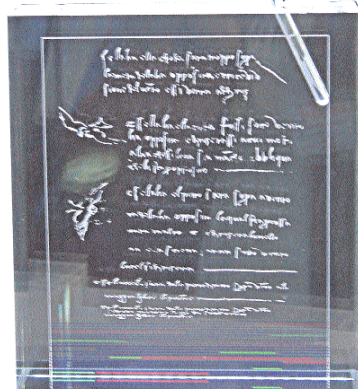


## Return To The Lost Art

Clearly disappointed with this age of anarchy and blasphemy where people don't even remember what their own handwriting looks like, NEC decided to bring back this ancient art with the Plume - a feather-shaped quill that combines the joys of handwriting with the security of digital storage.

NEC says "We used digital technology to design this tool to enjoy the beauty of writing and to rediscover the importance and wonder of taking time for contemplation."

After you have written to your fill and inserted the Plume into its main body, your information magically appears on its transparent display and gets stored in the digital format.



## Origami

The idea that folded and

Bill Gates' vision of an ultra-mobile device that costs less than \$500 runs multimedia and games and lasts a whole day on a single battery charge is finally here!

Microsoft partnered with Samsung to present the Q1 Ultra-Mobile PC (UMPC) at CeBIT this year. This very attractive device runs Windows XP tablet edition on a 7-inch LCD touchscreen and does everything it's supposed to - music, video, you name it. There's also an on-screen keyboard, designed to be used with your

thumbs.

There's one slight catch - price estimates for the Q1 place it at 1000 Euros (that's about Rs 54,000, which pokes Bill's vision in the eye), and instead of a battery that lasts the whole day, you'll be treated to this personal digital extravaganza for a whole three hours. It would still be forgivable if it did cool stuff like prepare your meals, but when it comes down to it, there's nothing in the Q1 that today's cheaper devices don't already have.



## Beyond The Ultimate

Think you're sitting pretty with that all-new SLI motherboard and all of 4 GB of RAM? Your rig is a mere calculator when pitted against Tyan's ultimate gaming PC. Sadly, they don't say much about this, preferring to bill their baby a "Server" - ugh.

The FT48 (for that is what it's called) can hold four dual-core Opterons and has sixteen DIMM slots, four 8x or two 16x PCIe slots and comes SLI ready. It guzzles power from four power supplies that supply it with a respectable 1350W. With the 4 GB memory modules that you can obtain today, this machine can hold up to 64GB of RAM!

Wonder what it would take to push this one to its limit - how do you test a machine that can make Doom3 look like PacMan?



## Snug And A Bug

James Bond wannabes will kindly assemble at the doors of Interactive Wear AG for their "Know Where Jacket" that can be tracked via GPS to any corner of the world - even inside buildings!

This surprisingly fashionable item of clothing comes with a cell phone, MP3 Player, headphones, a microphone and Bluetooth, and you can control everything from the keypad on the sleeve. The shoulder contains a GPS antenna which broadcasts your location in real-time, and will ensure that your boss always knows where you are.

Obviously not something you'll want to take with you on a stolen vacation.

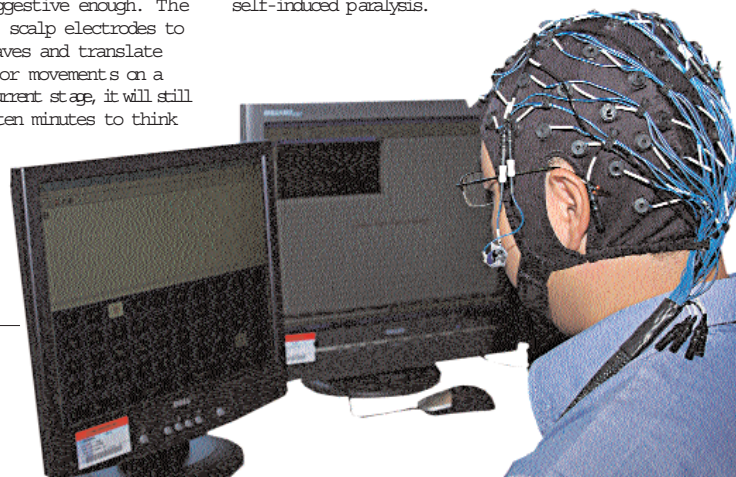


## Think it Type it

After countless sci-fi movies about them, thought-controlled devices are now more of a reality than ever. The brains at the Fraunhofer Institute for Computer Architecture and Software Technology have come up with the Brain Computer Interface - the name is suggestive enough. The device uses 128 scalp electrodes to analyse brainwaves and translate them into cursor movements on a screen. In its current stage, it will still take you about ten minutes to think out a sentence,

but at least the promise is there.

The researchers hope that this device will eventually help the disabled - even the completely paralysed - communicate with the world around them. And after this noble cause has been accomplished, the device will facilitate the descent of the lazy into a self-induced paralysis.





Cool Products that made  
their debut at CeBIT 2006



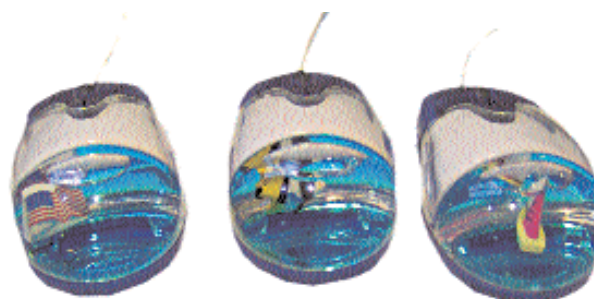
NVIDIA's SLI  
Notebook -  
The next step  
in mobile gam-  
ing



With big, obvious buttons, this mobile  
phone is perfect for the elderly



Is it a mouse? Is it an aquarium?



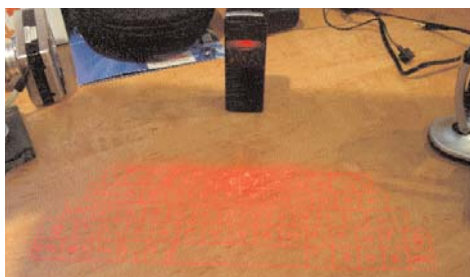
The new Freedom Mini  
Keyboard latches on to any  
device



NEC's Flask - the  
Fuel-cell cell phone  
(tongue-twisting, isn't  
it?)



Finally! Hama Electronics launched  
this much-anticipated virtual key-  
board



Samsung's humungous 82-inch LCD -  
the largest in the world







**34** Tech Transcends  
Tongues



**40** Must-have  
Games



**46** Nokia E61

# Digital Passion

Fuelling the pursuit of technology knowledge

In Sight

## Renovating The Office

Microsoft Office 12 Beta explored...

Ahmed Shaikh

How many of us have used Microsoft Word beyond the most basic of its features? Mail Merge, Citations, Watermarks, Themes, Cross-references, Hyperlinks, and Cover Pages—do you know what your favourite Word processor can do? The first version of Microsoft's seminal Word processor shipped with 100 features; Microsoft Office Word 2003 has a total of 1,500. One thousand and five hundred commands hidden behind a jungle of menus—it is very easy to miss the leaves for the forest. Indeed, by Microsoft's own admission, users consistently ask the software company to add features that are already present in the suite—just invisible to us common folks.

If there ever was a product that was guilty of feature overload to the detriment of productivity, it would be the current version of Microsoft Office. A look at the screenshot on next page—*The current version of Word with all toolbars enabled*—highlights this in a striking manner. And this is just the toolbars; let's not forget the layers upon layers of menus.

The solution isn't a pruning of features, but rather a smarter presentation of everything that Office can already do. Microsoft is aware of this, and has implemented, in Office 12, what it hopes is something that will expose the capabilities of its Office suite

in a clean and intelligent manner. Here, we take a look at what the solution entails and whether it is a step in the right direction. Note that this article is based on Beta software; as such, things are likely to change.

### Working In Tasks

Over the past few years, Microsoft has been experimenting with task-based interfaces. These are most visible under Windows XP's Explorer: browsing the My Pictures folder, for example, will allow you to do Picture Tasks and File and Folder Tasks. You can do tasks pertaining to an image—such as printing, e-mailing, or setting a photo as a desktop background. Such an approach allows you to print a photograph without the need to know which application

Illustration Chaitanya Surpur





Such an approach was also attempted with the introduction of the Task Pane in the 2003 iteration of Microsoft Office. The new interface of Office 2007 (or Office 12) builds upon this task-based groundwork. Let's say you're working with Microsoft Word. Over time, you will use certain elements of the software—you will work with fonts, play around with paragraphs, use the clipboard, or maybe the search feature, and so on. You might wish to insert a chart from Excel, or even a normal table. Finally, you might want to proof the document for spelling or grammar and then send it across to a colleague via e-mail.

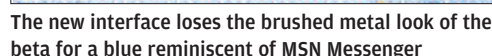


Menus have been largely eliminated: the Ribbon is now the replacement for menus as well as toolbars. The Ribbon is also what contains the tabs we talked about. Although the tabs are a very logical way of presenting options, you could very well spend some time hunting for a feature under tabs, rather than hunting under menus. However, a tab is infinitely easier to navigate

than a menu. A new “Office button” has taken the place of the File menu; what this adds is primarily collaboration tools.

In our experience, working with this tab-based, task-oriented user interface has certainly made the process of discovering features much easier than under the menu-driven regime. It also reduces the number of clicks and mouse movements needed to work a certain feature, which is indicative of friendly interface design.

Apart from fighting menus, previous versions of the Office suite have been guilty of throwing arcane bits of information at us users. What



exactly is a gutter, and why does my page need one? How does Mail Merge work? Don't throw a histogram at me, please; all I wish to do is reduce the contrast of this inserted image. You then have to wrestle with relics such as the Apply button. Not being able to see what an option does to your precious document's formatting without clicking on Apply is an exercise in frustration, and invariably involves hitting Undo at least once. You then have to dive back into the menus for yet another go at the fine science of word processing.

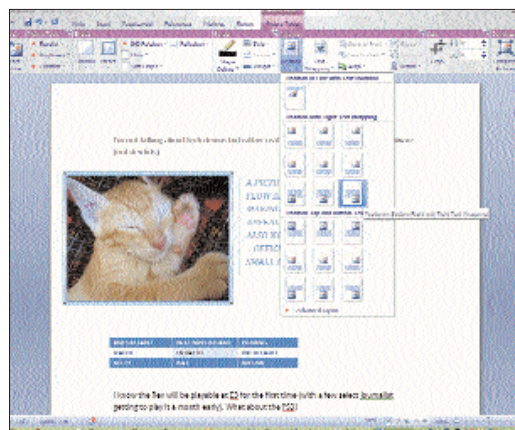
Office 2007 introduces a slew of features which go a long, long way in reducing some of this frustration. The most visible of them, pardon the pun, is the ability to see changes live. Office Word 2007, for example, allows you to view different paragraph styles by just hovering over the Quick Formatting stub under the Write tab. Selecting fonts is also a more pleasurable experience thanks to immediate visual feedback. An inserted image can similarly be tweaked for





brightness or contrast, with the changes immediately visible on mouse hover.

Office 2007 also introduces the element of Contextual tabs. Insert a picture and then click on it to reveal a Picture Tools tab in the Ribbon, which allows you to add a shadow or 3D effects to the inserted picture. Insert a table to trigger a Table Tools tab—in the Ribbon, of course—which offers live formatting options. Notably, each of these Contextual tabs comes in its own identifiable colours, which is a great touch.

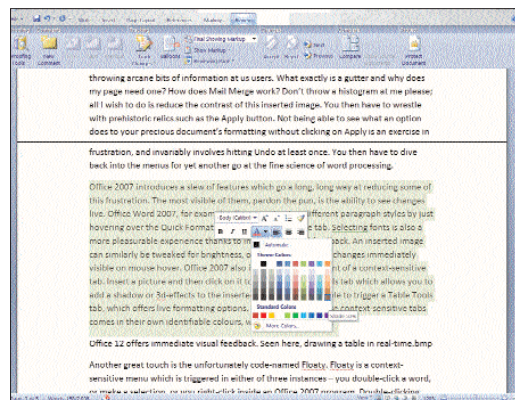


Contextual tabs such as Picture Tools in purple-pink here, are of great benefit to your current task

Another great touch is the Mini Toolbar. This is a context-sensitive menu triggered in any of three instances—you double-click a word, or make a selection, or you right-click inside an Office 2007 program. Double-clicking triggers a translucent Mini Toolbar that allows for quick format changes to fonts, bullets or alignment. The translucent window goes opaque when you bring your mouse cursor to it, and goes back to its ghost when the mouse moves away... it's an elegant and unobstructed path to frequently-used tools.

Right-clicking triggers an opaque Mini Toolbar attached to the regular right-click menu. Unfortunately, scrolling your list of fonts from within the Mini Toolbar does not reflect the choice live, thus diluting this feature. Perhaps the final version will incorporate this.

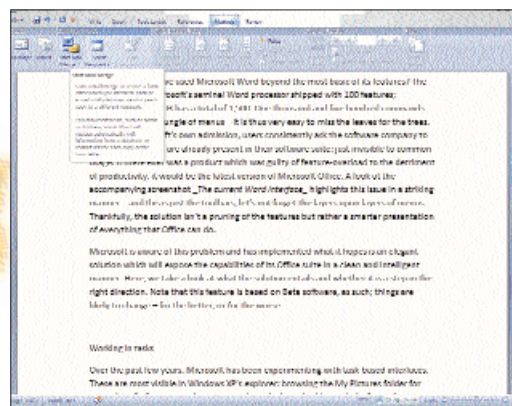
A problem with Mini Toolbars is that they are a bit intrusive. This is because it is triggered at random places within text, and we found



A Mini Toolbar triggered via a selection. Note the font tools offered

ourselves accidentally clicking it, especially while triggering it by making a selection. This can be solved by triggering the element a fixed distance away from the mouse cursor.

Another element that goes into making the suite's features more useful is enhanced Screen-Tips. A ScreenTip appears when you move your pointer over an item in the Ribbon. Most often, we rely on hovering over a button to understand what it might do, rather than delve into the labyrinthine Help system. Recognising this, ScreenTips in Office 2007 are quite verbose, often detailing how a feature works; sometimes suggesting why it doesn't, while simultaneously displaying relevant shortcut keys, and a direct link to associated articles in the Help.



Office 12 offers detailed ScreenTips. This entry is practically a help file for Mail Merge

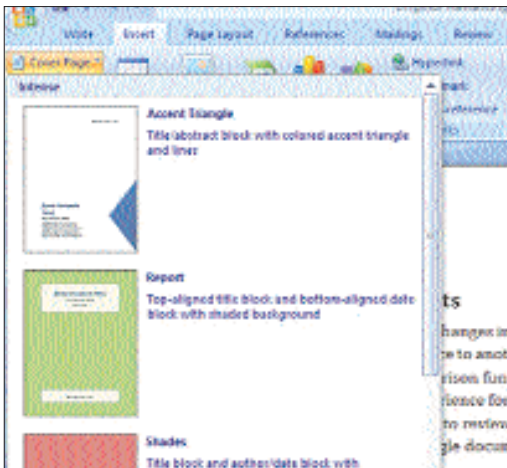
## Yes, But... What's New?

Interface tweaks are nice, but does the beta offer a taste of any new features? Feature additions are minimal, at least those immediately visible. Behind-the-scenes changes aim to make the suite more appealing to today's connected workplace. The most important implementation, with this in view, is a new Office document format. Yes, Office 2007 adds another bevy of document formats to a world that has surely had enough. The new kids on the block are called the Microsoft Office Open XML Formats and are open, not as in open source, but open as in "use these or else..."

At least, they are royalty-free. Moreover, being based on the XML markup language, they do offer some neat treats. Data interoperability, for example: any third-party application can, in theory, create an Office XML document without the need to use Microsoft Office. The formats will add an X to the usual .doc and the .xls files of today, giving way to .docx, .xlsx, and so on. Such an XML document will practically be a ZIP container holding the actual document, alongside XML files and folders that define the content of the document, its formatting, embedded images, etc. It is a very modular approach to

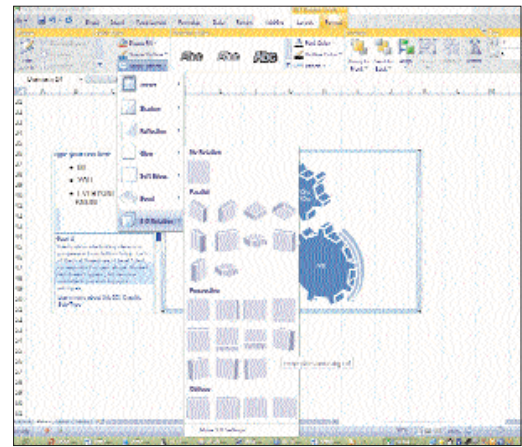


A view of the Ribbon with the tabs. A new Tab called View seems to have been added



You pick and click from Galleries to format your document

On the whole, what we took away from the Office 12 Beta was that it offers a new chassis on what is essentially the same engine



Office 12 offers 3D effects and rotation for several elements. This is a diagram tool for creating Venn diagrams and such

storing data and brings with it flexibility, data robustness, and of course, file compression, thanks to the ZIP format.

Data recovery is also improved under such a scheme: say an embedded image gets corrupted while the file is transferred over wires—you would still be able to recover the remaining data. The modular approach also offers an organisation flexibility, since elements can be added or dropped according to requirements. Finally, XML is data-driven. A workplace can thus leverage this document structure to enable content gathering from disparate sources, create documents based on the varied content, put up the document for data mining, and also reuse content.

Apart from this overarching change in Office 2007, there are minor additions made to each element of the suite. Outlook, for example, adds a To-Do Bar, which lists pending tasks and adds a calendar view. Creating tasks from an e-mail is now a right-click away: a created task is automatically added to the To-Do Bar. Also present is an improved Calendar view, RSS feed integration, and a better search tool.

Most of the feature additions are meant for large businesses. The Microsoft Enterprise Content Management offering in Microsoft Office SharePoint Server 2007, for example, offers Web content management, record management and document management. It also includes search



and workflow features to leverage all the data. Outlook can now mail calendars as HTML files such that non-Exchange users can be kept in the loop. The new OneNote 12 applies OCR to collected data such as images, thus enhancing the ability to scan for and collate data. The new suite also brings in tighter integration—among the constituent programs (such as Outlook, OneNote and InfoPath) as also between the PC and connected devices, such as cell phones and PDAs.

### Old Wine In A New Bottle?

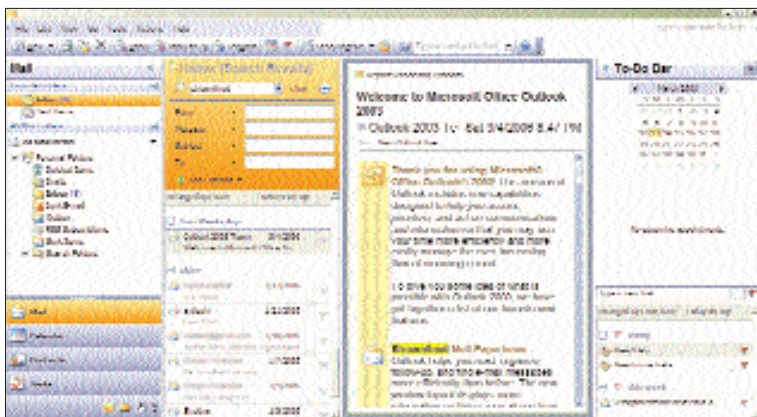
On the whole, what we took away from the Office 12 Beta was that it offers a new chassis on what is essentially the same engine. The new interface is very good, and will be a huge boon to those of us not very familiar with the inner plumbing of the current Office suite. To a power user, however, Office 12 offers little more than a prettier way to do things.

While on this point, the new interface leverages new hardware, particularly graphics accelerators. The interface worked almost flawlessly on an integrated nVidia platform, powered by a GeForce 6150 onboard chip. Almost, because it did display the occasional graphical glitch...

Notably, while Word, Excel and PowerPoint ran nice and stable, Outlook was a bit jittery and was prone to crashing.

But it's beta software; stability is bound to improve, system requirements apt to fall. As for feature additions, we don't think anything more will be added to the Office gene pool, and quite frankly, little needs to be. As it stands, Office 2003 is a very comprehensive package in terms of features. So would you be willing to invest the money and the relearning required to upgrade from the 2003 suite to the 2007 version? Should you even consider such an upgrade? We will answer these questions when we review the retail version of Microsoft Office 2007. For now, we can only report that the new interface is indeed an elegant solution, which ably exposes the expansive capabilities of the Office suite. Our congratulations to the Office team at Microsoft for delivering that. ■

readersletters@thinkdigit.com



Outlook 12's interface adds a new To-Do bar, support for RSS subscriptions, and search



# Tech Transcends Tongues

**Machine Translation remains a tough problem for Artificial Intelligence. Can we expect more accurate systems in the future?**

**Ram Mohan Rao**

“Data-oriented translation,” “Example-based and context-based processing,” “Syntactic parsing,” “Japanese morphological analysis,” and such is the stuff of machine translation (MT) research. But that’s exactly *not* what we’re going to talk about here, or even translate for you into English! Here, we take a gentle look at the potential of MT, and what we expect from it in the near future. Will you be able to shoot off an e-mail to a Spanish friend with it being translated in transit?

Your first brush with translation has probably been in the context of reverse translation using online translators such as Google’s and AltaVista’s. We’re talking about the forwards that go round saying something like “Translate the following to Spanish on Google and then translate it back into English! Have fun!” Reverse translation may be fun, but it’s unfair. Unfair, because it’s stressing the system too much, as it were.

But what about simple, one-way translation? We have the all-time classic of hilarious MT in the apocryphal story of a 1950s system that translated “The spirit is willing, but the flesh is weak” into Russian as “The vodka is strong, but the meat is rotten.” Now that might be a joke, or what, we don’t know, but let’s take a look at the state of the art: at [www.systransoft.com](http://www.systransoft.com), when you translate the German “Du Strahlenreiche” (You radiant one) into English, out comes “You jet realms.” And “Gleichnis” (likeness, or reflection) becomes “equalsneeze”!

## Rays To Riches

That’s a sad state of affairs, but a good starting point for an analysis. “Strahlen” means rays or beams—hence “jet.” And “reich” means “rich,” but “Reich” can also mean “rule,” or “domain”—hence “realm.” Now, “Du Strahlenreiche,” for us, is a combination of “rays” and “rich,” making for a literal translation of “You who are rich in rays,” which we understand as “You radiant one.” But how is the poor software to understand that we

meant “rich” and not “realm”? More importantly, we gather from the context, and from our world knowledge, that “rich in rays” can mean “radiant.” How on earth would the software know that there is even any such thing as radiance in the world, given only the words “realm,” “rich,” and “rays”?

An analysis of some ambiguous text shows just how much a program needs to know in order to be able to faithfully render a piece. Consider three sentences -

“I like the cat, I can drink milk.”

“I, like the cat, can drink milk.”

“I, cat-like, can drink milk.”

“I can drink milk like the cat.”

Even supplied with all three meanings of “like,” a machine would find it really hard to translate all four sentences properly! Then take the example of “The shirt is in the trunk.” The storage trunk? An elephant’s trunk? A tree-trunk? We know that it’s the first one; why? Because an elephant’s trunk is too small to shove a shirt into, and because a tree-trunk is a highly unlikely place to stash away a shirt in! And who is to take on the job of feeding all world-knowledge into a translating machine? Then there’s idioms: “Woe is me” will, in all likeness, get translated as “I am sadness” into other languages.

## We’re Tough Customers

As things around us develop at the proverbial mind-numbing pace, we’ve become impatient. We want IMs that translate, so you can type in English and your friend somewhere reads your text in Hebrew. We want a button on Web pages where we choose the language to view the page in. We want automatic speech translators, so we can speak in Hindi with our speech coming out in English through a mouthpiece.

Turns out something like that has already been developed, but more on that later. For now, have you realised how fortunate you are to be able to read this copy of *Digit*? You have access to more Web pages than most other people! Figures vary from source to source, but apart from the fact that Chinese is competing fast and hard, English is still by and far the most prevalent



Illustration: Shrikrishna Pakar



language on the WWW. Why, and for how long, need this imbalance exist? And remember, with all the attention to multimedia, one is apt to forget that text is still the mainstay of communication! The world needs automated translation—and soon.

### Artificial Imbeciles

The MT problem is, of course, within the domain of AI (Artificial Intelligence), amongst other disciplines. MT is very closely related to Natural Language Understanding (NLU)—where a computer attempts to understand what a spoken or written sentence means. Now “understanding” is something that’s been subjected to much philosophical, scientific and pseudo-scientific debate, so we won’t debate it here. But then, stated one way, the goal of AI—as far as the input side is concerned—is indeed to understand. In that light, we can say that MT will advance hand in hand with AI.

But when? MT hasn’t really seen any major breakthroughs since its beginnings in the 50s. In AI, promises have all too often been made and not delivered upon; MT is no exception. Some people say, “It’s all there: the hardware (fast machines), the software (neural networks and fuzzy logic), and it’s just a matter of time before we get good automated translations...” Problem is, it’s turning out to be a really long time.

Some people have noted, though, that other industries that do AI research—robotics, for example—could come up with insights and methods that would further the field. Then, there’s the possibility that since one of the biggest problems in AI is infusing common sense into systems, MT would benefit as bodies of common sense become bigger and better and can be easily “plugged in” to existing systems.

Common sense apart, there’s the problem of knowledge, as noted before. Unlike systems such as chat-bots that require a little knowledge and a lot of common sense, and unlike systems such as chess-playing programs that work on lots of knowledge and heuristics and not too much common sense, MT requires *both* lots of knowledge and lots of common sense!

Why knowledge? We mentioned earlier that a system needs to know that an elephant’s trunk is an unlikely place to shove a shirt into. Such things straddle the border between common sense and knowledge. But there’s pure knowledge to be considered, too: certain words do *not* occur in certain contexts, such as “glycogen” in

**The goal of AI—as far as the input side is concerned—is to understand. In that light, we can say that MT will advance hand in hand with AI**

the context of reportage (something on this later). “You” can be “*tum*,” “*aap*,” “*aap log*,” or “*tum log*” in Hindi, depending on context. Cultural and regional differences—both in terms of world reality and word usage—exist between regions and languages respectively.

The problem we’re pointing at is to decide how much knowledge needs to be put in the system, and how to encode it all so the machine translator can put it to good use. And that is going beyond even AI. It involves a collaboration between cognitive scientists, linguists, language and cultural experts, computer scientists, and more.

### Methods To The Madness

But talking about understanding, we’re led to one obvious way to try and translate documents, comprising the following steps:

- 1 Understand the source document
- 1 Put it in an intermediate format
- 1 Generate the output in the target language

This is a step ahead from the “direct” method of translation, which just takes a language pair, inputs dictionaries of both, and tries to generate translations without paying attention to context and other nuances. The intermediate-representation approach also has the advantage that once the intermediate “understanding” is generated, you could translate that into any language, not just one.

A third approach is called the “transfer approach,” consisting again of three steps. Here, the first stage converts the source language to an abstract representation; the second maps these representations to *representations* in the target language; and the third stage generates the translation. Note that the system doesn’t exactly try and “understand” what’s going on in the source language; there are abstract representations involved for both languages, which incorporate such things as context and real-world knowledge.

But what seems really promising now is the statistical approach, which we’ll soon talk about.

### Google Everywhere!

In August 2005, in a US government-run test, Google’s translation application beat technology





from IBM and from various universities. In the test, Google scored the highest amongst all competing software in Arabic-to-English and Chinese-to-English translation tests; these were conducted by the NIST (National Institute of Science and Technology). Each test comprised the task of translating a hundred articles from Agence France Presse and the Chinese Xinhua News Agency from December 2004 to January 2005.

How?

The answer lies in statistical analysis. It now seems increasingly likely that rather than have a system try to understand a piece of text, or formulate abstract representations taking context and other things into account, the most promising method of translation involves looking at ready translations. How this works is, the system would look at existing translations, and be trained on those. For example, if the German “reich” is often seen as being translated as “rich” in the context of money, the system would pick it up. And “Reich” gets translated as “realm” or “rule” in the appropriate context—as in “Die dritte Reich” (remember “The Rise and Fall of the Third Reich”?)—and the distinction would be made.

This means that the more the number of documents in the source and target languages available, the better the system would get at translating. And, of course, Google has a very large store of documents in various languages.

## Humans To The Rescue

Chess is an example of an AI endeavour that has succeeded remarkably well. Most others don't. Translation, like we said, is a hard AI endeavour, and it's unlikely we'll see a good automated translator soon. But there are three things to consider here. First off, to aid a machine in its job, the source text may have to be pre-edited, or “normalised,” to make it suitable for translation, as in the following:

I know I'm wrong.

I know, I'm wrong.

The two in English are similar, but the translations into German by free online translators result in two very different things! Someone who (a) knows the idiosyncrasies of the translation system, and (b) has a good knowledge of both

**Translation is a hard AI endeavour, and it's unlikely we'll see a good automated translator soon**

languages, could “format” text for the best results. Pre-editing is increasingly being seen as an important step. One can come up with several examples where pre-editing would be required—slang would need to be toned down, casual utterances would need to be formalised, missing words such as “that” (as in “I know *that* I'm wrong”) would be inserted, and so on.

## Experts In Their Field

The second thing we need to look at in the context of not ever getting good machine translators is that of domain-specific translation. “Domain,” here, refers to fields such as weather forecasting, physics, and so on. Why we mention weather in particular is that in Canada, the Météo system has been used to translate weather reports from English to French. It has worked well for decades now, and is still being used without anyone even noticing or complaining! How come? Simply because the system has been tailor-made for the field, and because the terminology rarely changes. There's no slang; the words always have a fixed meaning—for example, a “cold front” is always in the weather sense of the phrase.

Thus, instead of aiming at general-purpose translation systems, we could set our sights lower and think of developing several domain-specific systems. Thankfully, a lot of the material on the Internet that needs to be translated is domain-specific.

## Helping Hands

As a third point, we gather that in the face of the problem being hard for AI, the future might well see the machine translator working as an aid in the translation process. In the case of the latter, we can envisage someone with less-than-perfect knowledge of the target language being able to translate reasonably well with the help of a machine: the machine would do a lot of the dictionary searching and basic grammar construction, while the human would do the dirty work of supplying context, and re-consulting the machine in the case of an ambiguity. However, it all boils down to money: critics of this approach say it would be just as expensive as human translation, but proponents say it would be less expensive on account of the number of man-hours spent.

One other approach being seen as the future of translation is that human translators would proof-read machine translations. This, as in the former case, has the advantage of reducing the man-hours spent in the translation process. It has the added advantage of the final output having been read and verified by a human.

## Is This The Future?

We've painted a somewhat anaemic picture so far—that of MT not being up to speed, and fully automated translation not being possible in the near future. But here's an excerpt from post-gazette.com, dated 28 October 2005:

*“Stan Jou's lips were moving, but no sound was coming out. Mr Jou, a graduate student in language technologies at Carnegie Mellon University, was simply mouthing words in his native Mandarin Chinese. But 11 electrodes attached to his face and neck detected his*



### Some Online Translation Sites

Site	Comments
<a href="http://www.systransoft.com">www.systransoft.com</a>	Reasonably good; one of the oldest existing tools
<a href="http://www.google.com/language_tools">www.google.com/language_tools</a>	Probably the best one out there
<a href="http://babelfish.altavista.com/tr">http://babelfish.altavista.com/tr</a>	Quirky. Sometimes OK, sometimes pathetic
<a href="http://trans.voila.fr/voila">http://trans.voila.fr/voila</a>	Site is in French; works better for French translations
<a href="http://www.linguatrec.net/online/ptwebtext/index_en.shtml">www.linguatrec.net/online/ptwebtext/index_en.shtml</a>	Has an excellent feature: subject area selection for more accurate translation. Works better for German translations
<a href="http://translation2.paralink.com/">http://translation2.paralink.com/</a>	Poor, even at German translation, which is the site's speciality
<a href="http://www.reverso.net/text_translation.asp">www.reverso.net/text_translation.asp</a>	Very bad, even though the site seems to have won several awards



muscle movements, enabling a computer program to figure out what he was trying to say and then translate his Mandarin into English. The result boomed out of a loudspeaker a few seconds later:

*"Let me introduce our new prototype," a synthesized voice announced. "You can speak in Mandarin and it translates into English or Spanish."*

This might sound like we've reached what's needed in MT, but the fact is that electrodes, and the fact that speech is directly being translated into speech on the fly, do not make for a better translator! The article in the Post-Gazette goes on to say that when (he) announced he would take questions from reporters in Germany and America, the computer heard it as "so we glycogen it alternating questions between Germany and America." And, of course, things such as humour would be entirely lost in translation, to use the old phrase.

What's interesting about this system—of which several versions are being developed, by the way—is that it uses the statistical approach we mentioned earlier: a system learning from a body of texts in both languages, and how the translation was done between those texts. We can't stress enough that the statistical approach seems to us the most likely way to go for the future. And not just for the academic reason, but also for the fact that the mass of information (in all languages) on the Internet will increase with time, so machine translators will have that much more wisdom to draw from.

## MT In India

It's probably in the EU and in India that the need for MT most exists. We came across two Indian projects of note—the Tamil-Hindi Machine Aided Translation System, at [www.au-kbc.org/research\\_areas/nlp/demo/mat/](http://www.au-kbc.org/research_areas/nlp/demo/mat/), and "An English to Hindi Machine Aided Translation System: an ongoing project at IIT Kanpur," at <http://anglahindi.iitk.ac.in/>.

According to a document on the Anglabharti project—which aims at translating English into all major Indian languages, and of which Anglahindi is a subset—the system uses something like an interlingua approach (the one that converts sentences from the source language into an intermediate system). It analyses English sentences to create an intermediate structure with most of the disambiguation performed in this step. The intermediate language structure has the word and word-group order according to the structure of the group of target (Indian) languages. Note that word order is an important consideration, since English usually strictly follows the subject-verb-object structure, whereas Indian languages follow a relatively free structure. As an example, consider

I am going to the shop.

This sentence, like most simple English sentences, has the subject ("I") first, then the verb ("going"), then the object ("the shop"). Now consider that it can be translated into Hindi as

*Main dukaan ja raha hoon.  
Dukaan ja raha hoon main.*

**It's probably in the EU and in India that the need for Machine Translation most exists**



## A Universal Grammar?

A possible future direction for MT would be to take advantage of a linguistics theory called "Universal Grammar" (UG). From Wikipedia, UG postulates principles of grammar shared by all languages, thought to be innate to humans. It attempts to explain language acquisition in general, not describe specific languages. UG proposes a set of rules that would explain how children acquire their language.

According to UG, there is *only one method* of "diagramming" sentences; this method applies to all the languages of the world, and is universal because it is genetically encoded into the brain of every human child. This is a bold thesis, and a large number of linguists are working within this approach.

MT would benefit from a well-developed UG theory because the intermediate-language approach could easily be used to generate a representation of the meaning of the sentence, since there is only one way of diagramming it. Problems such as those of ambiguity resolution would remain, but the problems of syntactic and semantic parsing would be solved.

*Ja raha hoon main dukaan.  
Main ja raha hoon dukaan.*

Although one or two of these variants are more likely to be used, the fact is they're all grammatically correct. In contrast, there's no way of rephrasing the English sentence.

Therefore, converting the intermediate structure to each Indian language through a process of text generation is a relatively simple process. In fact, the authors of the paper say that the effort involved in analysing the English is about 70 per cent of all the work, while the text generation accounts for only 30 per cent. Part of the reason for this is the word order situation we've described.

If you speak Tamil and/or Hindi, try these out, and do remember to write in—we're especially interested in the bloopers!

## We Hate To Tell You, But...

MT is still in its infancy. Worse, it's been in its infancy since the 50s. Each researcher proposes a different scheme for "the MT system of the future," based on one or the other of the basic approaches. Some say we will *never* have completely automated MT, and sadly, that just could be true. In the foreseeable future, MT seems best focused at aiding human translators.

The most promising thing we can tell you is that the statistical approach based on large bodies of existing translation can only get better as the information on the WWW increases: we're putting our bets on Google, by the way! Which, reverse translated to and from German—even if that's unfair—becomes "We set our bets on Google, by the way!" And that's amazing... there might still be hope! ■

[ram\\_mohan@thinkdigit.com](mailto:ram_mohan@thinkdigit.com)



Without using a third-party tool, how would you display your company's logo on the Windows XP logon and shutdown screens?

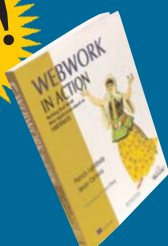
Write in with the subject 'Take a crack', and your postal address, to [takeacrack@thinkdigit.com](mailto:takeacrack@thinkdigit.com) with your solution

## Display a logo on the XP logon and shutdown screens



### LAST MONTH'S CHALLENGE

Win!



Take a Crack and win

**Webwork In Action**

by Patrick Lightbody  
Jason Carreira

Published by **WILEY-INDIA**

### LAST MONTH'S WINNER

**Debangshu Sen**  
P.O. Burnpur,  
Dist. Burdwan  
West Bengal

#### Rules and Regulations

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

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

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

## How would you hide one or more drives of your computer from appearing in your Windows Explorer?

There are two ways to hide drive letters that appear in My Computer: via the Registry Editor and via the Group Policy Editor.

### Method 1: Via The Registry Editor

Open the Registry Editor. Navigate to the string  
HKEY\_CURRENT\_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer

Create a new DWORD value and name it NoDrives. All drives will be visible as long as this value's data is set to 0. Set the value for NoDrives according to the following list: enter the decimal number corresponding to the drive(s) you want to hide as the NoDrives value data. When you right-click on NoDrives and choose Modify, make sure you select Decimal, not Hexadecimal.

Drive	Value
A:	1
B:	2
C:	4
D:	8
E:	16
...	...
Z:	33554432
All drives	67108863

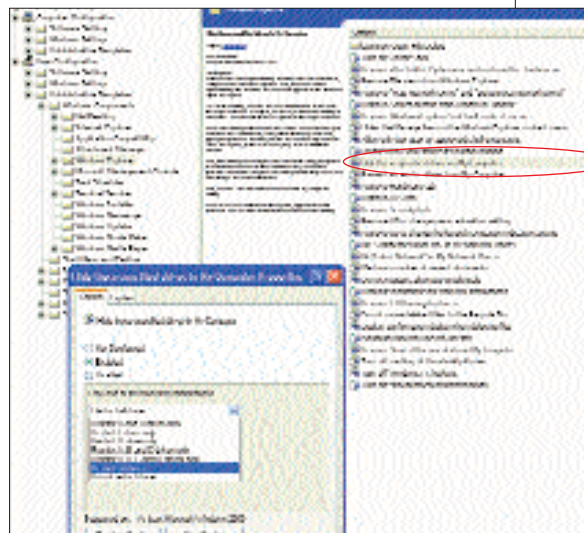
To hide multiple drives, just add the drives' values. For example, if you want to hide both drives A: and D:, the NoDrives value should be  $1 + 8 = 9$ .

Using the same decimal values, you

can arrange for a different behaviour that will leave a drive visible, while making it impossible for a user to view the contents of the drive. It will also prevent him from using the commands Run, Map Network Drive, or Dir to view the contents of folders on the drives. To do this, create a new DWORD value called NoViewOnDrive and use the same values as above.

### Method 2: Using The Group Policy Editor

This method can be used only on Windows XP Professional Edition. Open the Group



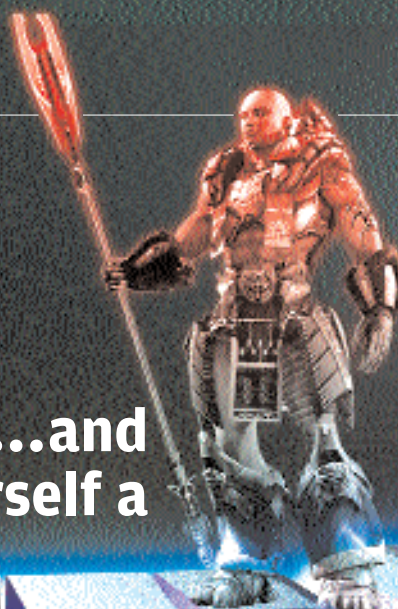
Editing the appropriate Group Policy Editor settings

Policy Editor (Start > Run, type in "gpedit.msc" and press [Enter]). Go to User Configuration > Administrative Templates > Windows Components > Windows Explorer. Here, you'll find "Hide these specified drives in My Computer" and "Prevent access to drives from My Computer".

The difference between the two settings is that "Prevent access" will allow the user to see the drive icon, but will give an error message when he tries to access it. "Hide" will remove the icon so the user won't see it, but the drive can still be accessed by using Start > Run and keying in the drive letter.

Under this setting, after you click the radio button next to "Enable", you'll see several options. Choose the one you want to apply, for example, "Restrict A and B drives only". You'll notice that the options here are restricted; you cannot, for example, choose to restrict drives A, B and D. ■





...and  
you call yourself a

# GAMER?

Not unless your eyes have bled in joy, and your fingers callused under the exuberant toil of playing these gems. PC or console, we call out the greatest titles ever to have graced gaming. Ever!

Ahmed Shaikh

A true gamer doesn't need an introduction to a gaming article. After years of stalking its love across message boards, the true gamer will tear off its beloved's shrink-wrap, throw away its manual, ignore its EULA pleas, download its no-CD crack, skip its cut-scenes, and proceed to have an ultimately-doomed carpal relationship, with veins a-throbbing! Does such a mortal need an intro-

duction? Perish the thought! Suffice to say, we shall reveal games worthy of such delicious hyperbole that even grammar will fail us! Nurse! More exclamation points! Stat!

## SONY PLAYSTATION 2

We begin with Sony's answer to organised religion—the PlayStation 2, aka the PS2. The console has sold more than 100 million units worldwide. Not owning one will bring shame to your family. Buy one, play these:

### Devil May Cry 3: Dante's Awakening—Special Edition

Who is Dante you ask? He is our very own Rajnikanth as imagined by the Japanese and molded in the image of an overzealous *Amrikaan*. He thus transcends boundaries and culture, and is like a god; except he is the son of a demon, and has to suffer through over-the-top action, an-independent-and-yet-

beautiful-woman-armed-to-the-teeth-with-guns, and one sibling rivalry straight from Bollywood. Much ass-kicking follows, with various firearms and *melée* weapons. *Dante's Awakening* also throws in some wild fighting styles to the mix. As a Gunslinger, for example, you can use two sawed-off shotguns as nunchuks, air-juggle a hellspawn, teleport to the other side of the room, use a downed baddie as a surfboard, and do nasty things to demon biology with oversized swords. The combat unleashed by this game is relentless and requires split-second timing to avoid counterattacks, and to chain deadly combos. This game will destroy your fingers, and its boss battles, your soul. But play it you must.

### God Of War

If Quentin Tarantino were a game designer, Kratos would be his Samuel L Jackson, except with blades of chaos chained to his arms; so much more effective than a purple lightsaber





anyway. In *God of War*, you play god-killer Kratos as he slices and dices his way through the entire Greek pantheon. The game unravels a rich tapestry of Greek mythology for you to spill blood on. Butt heads with every monster imagined therein, from a hydra to winged harpies. It's very satisfying to meet all this rich culture with a bloodied weapon. The combat is not very deep, though. Combos are simple to execute, and are unlocked by collecting red orbs to power up your weapons. Joining the blades of chaos are a bunch of spells and one obligatory oversized sword. *God of War*, however, balances good combat with a great production value and some challenging puzzles. It also uses mini-games to great effect: successfully hit a combination of keys shown on-screen, and you will shove your weapon down a Minotaur's throat, or tear off a Medusa's head. It's all very touching. How can you say no?

### Shadow Of The Colossus

Battle and fell mighty colossi in this epic action-adventure to save the love of your life. Journey on horseback through a vast empty world in which you have no enemies to destroy, no dungeons to pillage, nothing much to do but fight the game's sixteen colossi. You race



across silence and a barren landscape until you encounter these wonderfully-designed beasts. You then need to kill what is most alive in this strange, dead world. Each colossus is a behemoth—huge and threatening, with unique weaknesses and attack patterns.

The game explains little of motive or backstory, and you can't help feel a little deprived for the killing. *Shadow of the Colossus* is truly a unique experience.

### Guitar Hero

This game is a gift from rock-n-roll. It is an axe from heaven to cleave asunder the mediocrity that passes for music today. Ahem! With *Guitar Hero*, you can play tracks from Black Sabbath, Red Hot Chili Peppers, Queen,



Pantera, Megadeth, Judas Priest, Ozzy Osbourne, White Zombie, The Ramones, David Bowie, Jimi Hendrix, ZZ Top and more—for a total of 47 playable covers and indie tracks! The rocking is done to a custom game controller in the shape of a mini Gibson SG. The designers of this gem have clearly learned their rock and roll well: *Guitar Hero* takes you across six venues—from your basement to sold-out arenas, as you play using one of eight characters with unique looks and playing styles, and pick up from among 10 guitars that you can customise with 28 unlockable skins. *Guitar Hero* also lets you battle it out with one more player for the attention of a crowd, with only Rock and Roll as your weapon. You too can be a guitar god. Are You Ready To Roccceccccccccck?

### Katamari Damacy

Imagine yourself as a tiny green thing with an unfortunate head. Now imagine yourself holding a small ball that resembles a reject set-piece from *Johnny Sokko and the Giant Robot*. Imagine rolling that ball over a paper clip, then over an eraser, then a pencil, then a ruler, then a book, then a kitten, and so on, until you're rolling over the table, then the house, then the trees, the cars, some unfortunate onlookers—and you keep rolling and rolling and rolling... like a dung-beetle making an unfortunate statement on consumerism! You roll your *Damacy* over everyday objects in order to create balls of certain diameters, which can then be used to order to restore the stars and galaxies. Yeah. The game works because it is fun and has plenty of charm and personality. With an excellent presentation, a funky soundtrack, simple play mechanics, and challenging levels—*Katamari Damacy* is the hallmark of a good, fun game. It is also an ideal vehicle to bring that girl you fancy to your gaming frat house—chicks dig *Katamari*.

### Metal Gear Solid 3: Subsistence

*Metal Gear Solid 3* is difficult to pin down in 200 words or less. It is a stealth game, yes. It has you playing as a super-secret spy called Snake; stalking baddies through jungles, to stop suitably diabolical plans. Fairly typical fare on the surface, but the game is a master-



**ALSO ON The Sony PlayStation 2**

- 1 Amplitude
- 1 Virtua Fighter 4
- 1 Tekken 5
- 1 WWE SmackDown! Here Comes the Pain
- 1 Dragon Quest VIII: Journey of the Cursed King
- 1 Gran Turismo 4
- 1 And many, many, many more

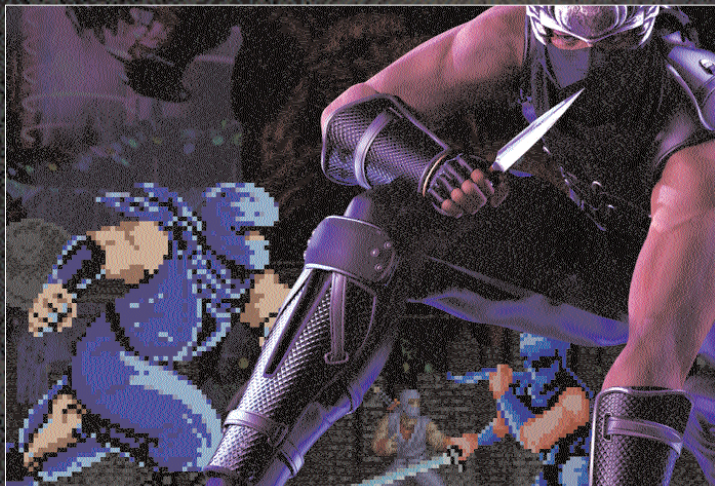
piece of complex stealth mechanics, and uses a cinematic presentation to tell a surprisingly atypical tale. It is at times self-deprecating, sometimes tongue-in-cheek, but *always* absorbing, peppered with intense boss battles against characters such as The Pain, The Fear, and The End. The game is set in a jungle and emphasises camouflage. To which end, MGS3 allows you to apply face paint and slip into various garbs. But even here, the game can't help poking fun at itself: it allows you to wear a fake crocodile head and even a Naked, err... skin, for *Rambo*-style gaming. The best bit is perhaps the Snake vs. Monkey mini-game, which pits the lead character against monkeys from the game *Ape Escape*—with an objective to capture all the monkeys using a stun gun.

**MICROSOFT XBOX**

It is difficult to recommend a game for the Xbox. Except for *Ninja Gaiden*, which is reason enough to own the console. The Xbox has few exclusive games, and fewer worth playing. Today, all the good titles on the Xbox are also available on the PC. So here's the deal: if you don't have a computer worthy of running current-generation games, buy an Xbox. Most of the multi-platform titles also look best on this console. Plus you can enjoy the few exclusives...

**Ninja Gaiden Black**

This game lets you play as a Ninja! Nay, as The Ninja—Ryu Hayabusa, who kicks derrières and takes names, and may or may not chew bubblegum while doing it. *Ninja Gaiden Black* is a game of such epic coolness that your fingers will numb to its manic button-dance, your tongue will wallow limply as you execute its savory combos, your eyes will pop



out with fear as yet another boss battle ensues, and you will dance in visceral joy at your victories. With a deep, satisfying, and varied combat system, an unforgiving range of battles and plenty of replay elements, *Ninja Gaiden Black* is the reason to own an Xbox. Yes, it *is* that good. Why are you still here, you ninja dog! Go scurry forth and buy this game, and then the console. Hyaaaaayah!

**FarCry Instincts**

*FarCry Instincts* takes the much-loved PC game over to the Xbox, and does so with style. With a completely revamped engine, the game is a *tour-de-force* on the Xbox: it is certainly one of, if not *the* best looking, game on the console. If you haven't played the game on the PC due to hardware limitations, do pick up this version. For those not in the know, *FarCry* puts you into a lush tropical jungle, and is a first-person shooter. The



pace of the action is impeccable—its tempo rises and falls: one moment you are all stealth, the next you are Rambo let loose. The game also mixes guns, jungle traps, special animal traits, and vehicles. You can control jet skis, hovercrafts, hand gliders and Humvees, for some drive-by shooting and for traversing the enormous levels that the game throws at you. Great levels, dual-wielding of weapons, varied enemies, vehicles, beautiful graphics, well-paced action—*Instinct* delivers!

**Forza Motorsport**

*Forza* is Microsoft's answer to the *Gran Turismo* series on the PS2. These are *not* the arcade driving games aimed at wimps, but are simulators of everything on four wheels. *Forza*, for instance, lets you drive more than 200 cars from 60 manufacturers. The game throws in a varied mix of tracks as well—from real-world racing tracks to tight street races to fictional courses. Though it's a simulator, the game balances skill well, and is accessible to both newcomers as well as veterans of car mechanics. Perhaps the best feature of the game is the level of customisation it allows on your ride through paint jobs, vinyls and decals. The game also features visible car damage, reflected in the performance of the vehicle. Finally, not only does the game look good, as any Xbox exclusive does, but also sounds great: the roar of your opponent's



engine to the backbeat of ZZ Top's *La Grange* or your own custom soundtrack—ripped to the Xbox's hard disk. The game is a stickler for detail for those who demand it, while being accessible for those just looking to burn rubber—a well-balanced addition to an Xbox owner's library.

## Fable

*Fable* used to be an Xbox exclusive, but is now also available on the PC as *Fable: Lost Chapters*, with extra content thrown in. Being a Lionhead creation, the game is obsessed with virtue and good, and the shadows an ego can cast, which passes for evil. The game marches to this good/evil beat, tracking every deed you do, no matter how small or seemingly insignificant, and logging it within its memory banks like some digital god. (It even tracks how far you can kick chickens. Yes, you can kick chickens in *Fable*.)

Unlike real life, *Fable* reflects your characters deeds visually—a bad avatar will grow horns, a good one will be beatific to behold. It's an interesting reflection on how our culture associates appearance with morality. The game is also laced with typical British humour; interacting with the world's inhabitants is also a joy. Women will fall in love with you, you will age and scar as time passes, you can tattoo your body and face, change your hairstyle, wear ridiculous or cool armour, walk around in your undies, go Conan with muscles if you use swords much, or bald if you cast too many spells... our most memorable experience was when one evening, our avatar got stinking drunk in the local tavern and then proceeded to get others just as drunk—while watching women throw up all over the place was nice, better was when the kids mimicked your drunken swagger and formed giggly beelines behind you. Oh yeah, the game also has a good story, a great combat and spell system, interesting quests and a unique style of presentation. Another must-have!



## ALSO ON The Xbox

- 1 Halo: Combat Evolved
- 1 Halo 2
- 1 Full Spectrum Warrior
- 1 Brothers in Arms: Earned in Blood
- 1 Burnout Revenge
- 1 World Soccer Winning Eleven 9
- 1 Def Jam: Fight for NY
- 1 Need for Speed Most Wanted
- 1 Unreal Championship 2: The Liandri Conflict

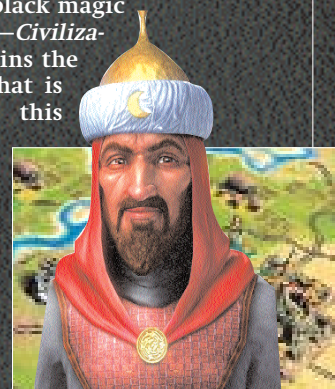
## THE PC

Consoles have certainly carved off a healthy chunk from our PC habit. With the release of the Xbox, every game went multiplatform overnight, sometimes to the detriment of our beloved computer. While console gaming has

its uses, some genres are still best experienced on the Pee Cee:

## Civilization IV

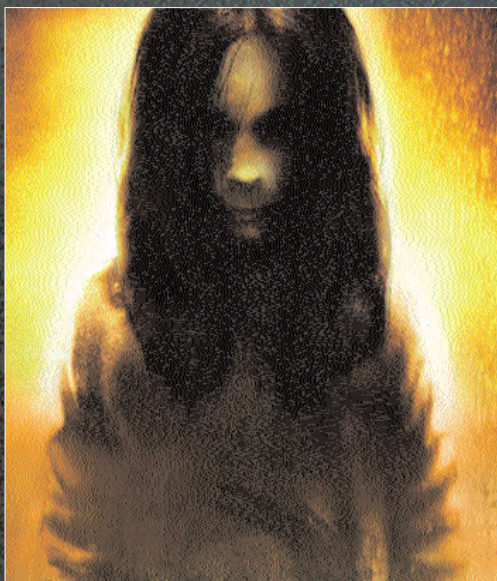
One more turn. Just one more turn. One more. Just another. Right through the night and on to dawn. It's the evil black magic of a Sid Meier game—*Civilization IV* (Civ IV) retains the addictive quality that is the hallmark of this series. If you on unfamiliar territory here, Civ IV is a turn-based strategy title that puts you in charge of the major civilizations of the world, with a view to dominate and emerge victorious.



Victory is possible through a range of tactics—from war, to cultural hegemony, to scientific domination; even religion is factored into this particular outing. Role-play a variety of leaders, from Gandhiji to Genghis Khan, alone or with friends—over the Internet, or on a LAN, or even via e-mail. The game can be a bit overwhelming at its onset but once you get familiar with its key concepts, prepare to feed yourself intravenously as you stay glued to your monitor for hours at end. As a bonus incentive to buy this insta-classic—it's voiced by Leonard Nimoy of Mr. Spock fame. Civ long and prosperous!

## F.E.A.R.

A game from Monolith is seldom wrong and *F.E.A.R.* just reaffirms the development studio's knack for creating games of the highest caliber. It is just as rare for a first-person shooter to



communicate the visceral horror that must ebb through a gun fight. This game talks the talk. You can feel the weight of each bullet as it leaves the muzzle of your gun, you can taste the fear as wood and brick inches away, turn up clouds of dust and dirt to enemy fire; bodies slump and tear, glass shards the air, one moment there is the rat-tat-tat and the thoom-thoom of guns blazing and the next instant it's all over. Silence, bodies, dust,

you live. The name of the game also points to a supernatural plot that adds a psychological weight to the *F.E.A.R.* motif. Let's just say bullets and bombs won't be the only thing you would be afraid of while playing this game.



## Digital Passion | Lead Feature

### The Chronicles of Riddick:

#### Escape From Butcher Bay—Developer's Cut

This was one of the must-have titles for the Xbox prior to its recent release on the PC. The PC edition features a few extras though, including commentary from the game designers on the game's levels and scenarios. *Escape from Butcher Bay* is one of the few games that immediately connect you to your on-screen persona: the beautiful graphics and a first-person view help here, but so does Vin Diesel's wonderful voice-acting, a great combat system and some truly memorable action sequences, excellent

dialogue deliveries and Riddickisms (like Sidhuisms, but much cooler). The combat is truly noteworthy, especially the bits where your character relies on old-fashioned fists-fights and neck-breaks to communicate

his point of view. The game is a perfect blend of stealth, action and black humour which you must play, either on the Xbox or on the PC. After you have, watch *Pitch Black*, then *The Chronicles of Riddick*, and finally the animated short *The Chronicles of Riddick: Dark Fury*—from the same people who gave us MTV's *Aeon Flux*. Then, build a Riddick shrine, and pray for a sequel.

### Galactic Civilizations II: Dread Lords

eXplore, eXpand, eXploit, and eXterminate: the 4X genre is back with a big bang in this epic space-strategy. *Galactic Civilizations II* has everything that makes a 4X game a joy to play: the ability to customise a play session to your liking, a deep research and technology tree, and of course a variety of ways in which to skin the proverbial cat. You begin as one of ten available races, each with its own strengths, or you can create your own mixed-breed, customised to your liking. You then pick a galaxy, small or big—the size of the map determines whether the gaming session is a quickie or a long-drawn space trilogy with prequels. Gameplay can span genres—you will build, you will research, and you will try diplomacy, or guile, treats to appease, and every dirty trick that you can conjure up to get an upper hand over competing races. The AI is very challenging as well, and will always keep you on your toes. If, like us, you have been clamouring for some good old-fashioned 4X action, give this game a go.

### Star Wars: Knights of the Old Republic

If you have never played a Bioware game before, you owe yourself this experience. If you are a *Star Wars* fan, but haven't played this game, correct that oversight right away. This is it, the quintessential *Star Wars* game. Beautiful graphics, great character models, excellent animations, amazing party characters, the best story in a PC game, (outside of *Planescape Torment*), and possibly the only



game which lets you live the *Star Wars* experience. Saber fights, force powers, battle droids, princesses, Millennium Falcon, and all. You can choose to follow either the Light Side or the Dark Side of the force, and are awarded force powers accordingly. You can also choose from a variety of body armour and light sabers—which can be dual-bladed or single, and can be dual-wielded; furthermore, special crystals can be used to change their damage properties and colour. This epic adventure takes you across the *Star Wars* worlds—from Dantooine, to Kashyyyk—and will leave you wanting more. Fortunately, there is more in the form of *Star Wars Knights of the Old Republic II: The Sith Lords*. The Force is strong with them both.

#### ALSO ON The PC

- 1 DOOM 3
- 1 Half-Life 2
- 1 Quake 4
- 1 Black & White 2
- 1 The Movies

### SONY PLAYSTATION PORTABLE

At first an object of desire, then a portable movie machine (wink, wink), and now the Sony PSP finally got game(s):

#### Mega Man Powered Up

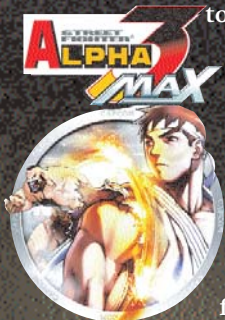
Enjoy a well-balanced side-scrolling mayhem in this update of the first *Mega Man* game. Beautiful graphics, fast-paced action, cool enemies, plenty of weapons and that Capcom touch.

#### Street Fighter Alpha 3 MAX

Street Fighter to go! Faithfully ported to the handheld, you have to own this seminal 2D fighting game which is packed with 40 fighters, and comes with ad-hoc multiplayer. Tournaments on the go!

#### Burnout Legends

You can never play enough *Burnout*—fast, frantic racing, and fast, fitting crashing, two of our favourite things. This version packs in elements from the first three console outings to offer crunchy, juicy delight in each yummy bite. Mmm, now we are hungry. For *Burnout Legends*!





**SOCOM:****U.S. Navy SEALs Fireteam Bravo**

*SOCOM* delivers intense online and offline shooter action. With impressive map sizes, and a good control system, this outing on the PSP is a must-have for fans of *SOCOM* and strategic shooters alike.

**Lumines**

For many months, *Lumines* was PSP—the sole reason to own the Sony portable. The title is an ingenious, fiendish, mesmerizing puzzle game which blends falling blocks, with good visuals and perhaps the funkiest, grooviest music on a handheld. Puzzle fans, look no further.

**Grand Theft Auto: Liberty City Stories**

The same great *GTA* experience, now on the pot or at the bus stop. *Liberty City Stories* offers the same freedom, wanton destruction and mayhem that makes for a *GTA* experience. This game is so good, in fact, that Rockstar is porting it to the PlayStation 2.

**X-Men Legends II: Rise Of Apocalypse**

A must-own, role-playing game for a fan of the X-Men series. In *Rise of Apocalypse*, you can recruit not only from the band of Xavier X-men, but also from the evil forces of the Brotherhood. Muwahahaha. Cyclops, Wolverine and Juggernaut in the same team, you know you want this!

**Wipeout Pure**

Perhaps the best racer on the Sony PSP. Not just because it is good to look at but because it has tight controls, great tracks, awesome music and is regularly updated with extra content. If you have a PSP, you need *Wipeout Pure*.

**NINTENDO DS**

With two screens, one of which is a touch screen, Wi-Fi, and a mic, the DS seemed to be the product of the kind of insanity that only the genius possess. It is now the fastest-selling gaming console in Japan, and has sold more than 13 million units worldwide in just over two years.

**Phoenix Wright: Ace Attorney**

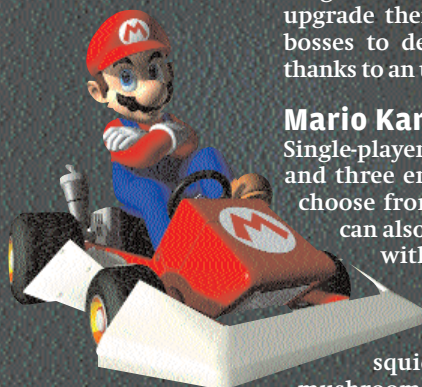
*Ace Attorney* is part adventure game, part detecting (think *Police Quest* of old), part whacky Japanese characterisation, and all funny and fun! How can you resist a game which encourages you to shout "OBJECTION!" at the DS? You can't, and you shouldn't. Unless you wish to miss out on one of the best gaming experiences of the past year.

**ALSO ON The Nintendo DS:**

- 1 Advance Wars: Dual Strike
- 1 Nintendogs: Dachshund and Friends
- 1 Kirby: Canvas Curse
- 1 Meteos
- 1 Super Mario 64 DS
- 1 Electropunkton
- 1 Resident Evil: Deadly Silence
- 1 Viewtiful Joe: Double Trouble!
- 1 Ultimate Spider-Man
- 1 Mario & Luigi: Partners in Time
- 1 Star Wars Episode III: Revenge of the Sith

**Castlevania:****Dawn of Sorrow**

This *Castlevania* experience is arguably the best yet. As a 2D exploration, action and adventure game, nothing beats this title. With a rudimentary role-playing element, the game offers a range of weapons, the ability to customise and upgrade them, a vast castle to explore, huge bosses to defeat, and excellent replay value thanks to an unlockable mode and a level editor.

**Mario Kart DS**

Single-player grand prix races across 32 tracks and three engine classes, eight characters to choose from, each with multiple karts. You can also race against seven of your friends with only a single copy of the game.

Or head online. With zany items such as lightning bolts to shrink your opponents, ink-squirting squids to obscure their vision and mushrooms for boost, the game is a blast offline or on.

**Tony Hawk's American Sk8land**

A *Tony Hawk's Pro* skating game that goes back to its roots to deliver the goodness which recent titles have floundered with. With a great cell-shaded 3D world, slick presentation, an excellent soundtrack, online multiplayer, and great skate mechanics, the game is just gr8!

**Age of Empires: The Age Of Kings**

The PC game we all love spawns a turn-based avatar on the Nintendo DS. Although turn-based, the game retains everything that made the PC version great. With five playable factions and more than 20 hours of gameplay, *Age of Empires* will satiate your portable strategy needs.

**Sonic Rush**

Once upon a time, Sonic was loved. Then Sega did such vile, dreadful things to our favourite hedgehog and broke our heart. We would sulk some more but in *Sonic Rush*, Sega's penance is at hand. This DS outing brings back everything that made Sonic so much fun—speeeeeeed and crazy looping, jumping levels. The game makes great use of the DS' two screens to maximise the verticals and enhance the sense of speed. If you're a Sonic fan, you must not miss this game! ■

readersletters@thinkdigit.com



**A business smartphone this may be, but it's cool enough for any of us to drool over**

The E61 is the first QWERTY business smartphone from Nokia, and has been touted as the Blackberry killer. It's optimised for e-mail, and has special features for e-mail such as an Inbox shortcut key, an indicator for incoming mail, and so on. With the E61, Nokia has departed from their notebook designs to an elegant, executive one.

The brilliant 320 x 240 active matrix display lends the phone a Palm-ish feel. Its screen supports 16 million colours. There is the 75 MB of onboard memory, which can be expanded via the miniSD card slot. Expect Nokia to bundle at least a 64 MB card with the phone—that's a goodish bit of memory for a business phone!

The phone not only supports quad-band, but is also WCDMA-enabled—and so can be used anywhere in the world.

The Nokia E61 comes with attachment viewers and editors for features of MS Word, Excel and PowerPoint. Then there's MS Outlook contacts and calendar. It also supports Adobe Reader and Zip manager, as well as several third-party e-mail clients including Blackberry Connect.

The phone plays MP3 and AAC, and can stream 3GPP and RealMedia content. The connectivity spectrum spans Bluetooth, Pop-Port and IR. There's no camera inbuilt, but this can be a virtue since many corporate offices ban the use of camera phones.



# Nokia E61





April 2006

# A PDA-Phone

Sanket Naik

It feels like an eternity since I've been using my Nokia smartphone, and was lately itching for a new experience. I'd been toying with the idea of attempting to use a phone with a stylus and a touch-screen. With the Motorola A768i, I got my chance. What follows is 30 days of leaving behind the old and embracing the novel.

## Day 1

Accustomed to my Nokia 6630, the Motorola A768i feels foreign. Motorola phones in general are notorious for their clumsy interface and this played on my mind, but it was not to deter me from using the phone.

The A768i looks brilliant in its sedate silver grey outfit, and is so executive's phone. The clamshell design and the build quality are great.

The phone can be worked on without a SIM card—when switched on, it says "No SIM card found," but once you click OK, you can proceed to use other features on the phone—a must for a PDA phone. I spent some precious hours understanding the interface sans the SIM.

## Day 2

You cannot potter around with a phone for long without a SIM card and in it went, the next day. The interface is miles ahead of the earlier Motorola phones, and the menu structure is neatly arranged. The stylus was testing my patience as I tried to enter notes and fiddled around with other features. However, it allows single-handed operation without the use of the stylus too.

## Day 4

None of the three themes on the phone were interesting, so I decided to customise them. Adding a home screen was quite easy. The phone offers customisation of text size, message alerts, and more. I didn't like the camera, though; the pictures are grainy.

## Day 6

My enthusiasm is increasing with experience. Came across the Pictel browser on the phone. This excellent utility, apart from browsing the Net, allows opening and reading of .doc and PDF files. The interface is sleek and permits

zooming and panning.

## Day 9

I did not expect any hiccups when transferring data from the PC to the phone, and I was right! The CD bundled with the phone contains many more ringtones and multimedia.

## Day 15

Decided to use the audio recorder on the A768i for an interview. but I realised that I might pay dearly for using a feature I was unsure of, but the results were quite satisfactory. The volume level was low, though.

## Day 18:

Issues have begun cropping up. The SIM card—which I've had for three years—created a problem when sending messages, and I had to get a new SIM. And then there was the episode with the settings: features within the message and voice settings are difficult to locate. Charging takes unusually long, and the battery indicator is unreliable.

## Day 22

Tired of using the default Web browser, I decided to install the Opera mini. It has a much better interface, and the site rendering is an out-of-the-world experience.

## Day 27

My initial concerns of a quirky Motorola OS are quickly disappearing. I'm fast at the stylus now, can browse the phone with one hand, and can easily get to any hidden menu. Using the stylus is addictive, and I almost despise my Nokia 6630 for not having one!

## Day 30

Most people, loyal to one brand of phone or the other, easily take a dislike for alternatives. All it takes is a little getting used to. I've had a relatively good experience, but the Motorola A768i needs improvement to match up to the likes of the PDAs by Sony Ericsson and Nokia.

sanket\_naik@thinkdigit.com







**56** Flat Out!



**94** The Perfect Pixelator



**96** Parental Control Software

## Digital Tools

Technology For Personal And SoHo Productivity

Enhance

# Fandom of the Opera

**We take our opera glasses to the coolest Web browser out there and come away with a treasure trove of tips, tricks and a sneak peek at its future**

Ahmed Shaikh

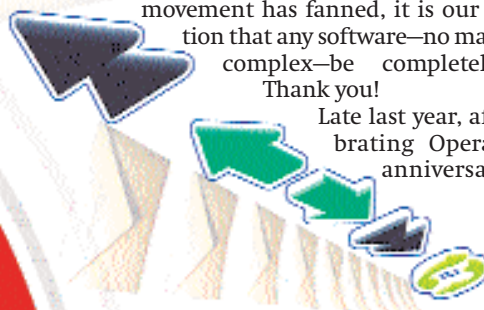
Over the past year or so, the online community has hit the reload button on The Browser Wars. 2005 witnessed the rise of Mozilla Firefox after years of sulking in Netscape's shadow. Today, the open source Firefox is a force to be reckoned with, drawing in a healthy sum of money for the Mozilla Foundation. For a free browser, that's quite a feat. It has also captured a good chunk of the market share, forcing Microsoft to rev up its Internet Explorer team and

launch a preliminary counterattack in the form of a beta release.

Hurrah for Firefox and all that, but amidst the din of Mozilla vs. Microsoft, the world seemed to have forgotten—or worse, ignored—a little gem from Norway called Opera. Historically, this was because Opera wasn't free as in beer. The unregistered version was marred by text and banner ads, and if there is one ill the open source movement has fanned, it is our expectation that any software—no matter how complex—be completely free.

Thank you!

Late last year, after celebrating Opera's 10th anniversary, the



Imaging Pradip Ingale, 3D Inputs Vikram Kathare



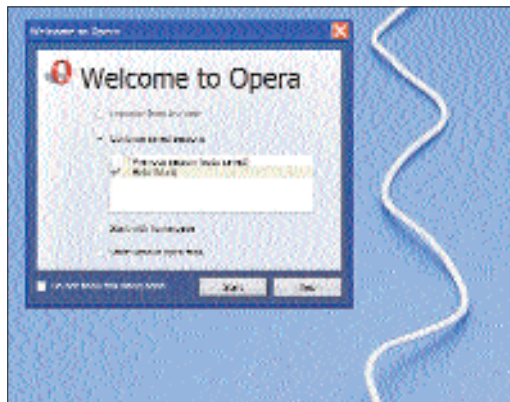
Norway-based Opera Software decided to remove the hurdles of banner ads, waived the licensing fee, and thus freed the browser. Which is where this article comes in: there is little reason for you not to be using this browser. Opera is as comprehensive a package as you'd want to take you online. Much more than just a Web browser, Opera comes with an e-mail client, a contacts manager, an IRC chat client, an RSS feed reader, a download manager, and a pop-up blocker; it offers tabbed browsing, visual themes, mouse gestures, keyboard navigation, smooth zooming of both fonts and images, a trash can that holds all the pages you've closed, a session feature that lets you resume browsing from where you left off in the event of a crash and much, much more. All in a free, 4 MB package.

The upcoming release (which you can download as a technology preview) adds BitTorrent support, widgets, a content blocker, thumbnail preview of tabs, and follows only Konqueror to pass the Acid2 Web compatibility test—which essentially tells a Web designer whether the browser is compatible with W3C standards.

So let's take a look at what this Web platform can do for you, starting with some good old-fashioned browsing.

## Web Browsing 2.0

Each time you fire up Opera, you start what is called a session. You can launch a separate session by pressing [Ctrl] + [Alt] + [N]. Since Opera supports tabbed browsing, each session can have multiple tabs. Two features emerge from the concept of sessions: you can save a session and launch it with Opera, and you can resume a session in the event of a system crash. Saving a session is a great way around having to bookmark all the sites you're

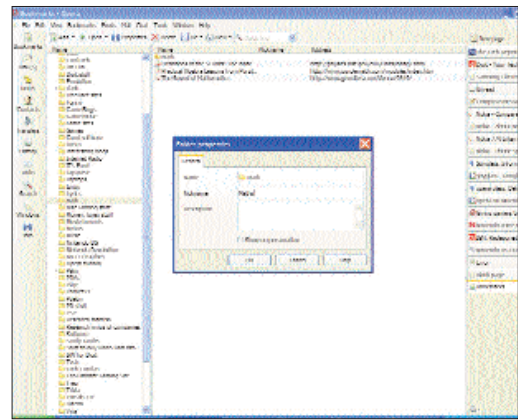


You can load a saved session when Opera loads or you can ask Opera to auto-load the session every time it starts

browsing. To do this, open up the sites in new tabs—[Ctrl] + [N] opens a new tab—then go to **File > Session > Save this session**. Note that you can choose to auto-launch your selection of sites when Opera launches. On a related note, to change the launch behaviour, go to **Tools > Preferences** and choose an option from the Startup drop-down list.

You can also launch a group of bookmarks from the address bar for similar functionality. In our example, we have a bookmark folder called Math, which contains three Web sites pertaining to mathematics. Say we want to launch the three

**The upcoming release of Opera adds BitTorrent support, widgets, a content blocker, thumbnail preview of tabs, and follows only Konqueror to pass the Acid2 Web compatibility test**



You can launch a bunch of bookmarks by typing one nickname in the address bar

in Opera using a single keyword. To do this, go to **Bookmarks > Manage Bookmarks**, right-click on the Math folder, click on Properties, and then type in an appropriate nickname—we choose "maths" here, and typing in "maths" in the address bar will launch the three bookmarked Web sites.

Opera offers spatial browsing, which in essence enables traversing a Web site solely via the keyboard. For example, hitting the arrow keys while keeping [Shift] pressed will ask Opera to cycle through all the links on a page, and any form elements:

Navigate links and form elements	[Shift] + [Arrow keys]
Cycle through headers	[S] and [W]
Cycle through elements	[D] and [E]
Cycle through frames	[3] and [Shift] + [3]

Opera lets you search for text or links within a page, displaying results live as you type. Trigger a text search via the full-stop key—[.]. Similarly, you can search for any links in a Web page via the comma [,].

One of the most useful features of Opera is its integration with the Answers.com online service. No longer do you have to wonder about the meaning of a word—whether it's pertaining to simple usage or something technical, the service tells you everything you'd need to know, and even suggests correct pronunciation via audio. To trigger this, just double-click on the word in question and click on Dictionary. Opera will take you to the relevant Answers.com page, which collates information from a variety of sources including dictionaries, thesaurus, encyclopaedias, translations, and real-time data such as weather reports, currency converters and stock tickers. The selection need not be limited to just a word—phrases, too, can be selected in this manner. A very useful feature, especially if you are a researcher or student.

While using this feature, you might have noticed the Translate option on the right-click menu. As the name suggests, the feature uses different engines to translate a block of text in a variety of language pairs including French to English, German to English, Italian to English and Japanese to English. It beats having to separately visit Babelfish or the Google online translator.

Another nifty feature for the data collectors

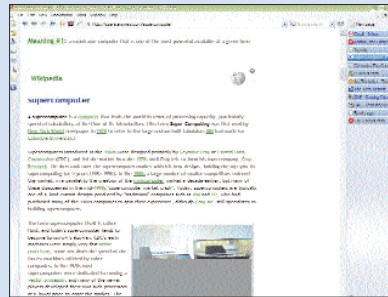


## Concept Mapping

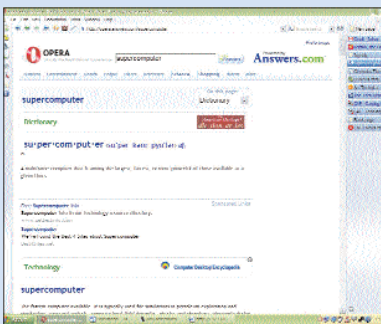
Opera's integration with Answers.com is excellent for research purposes. Here, we search for "Supercomputer." Note the speaker icon denoting spoken pronunciation under the dictionary entry



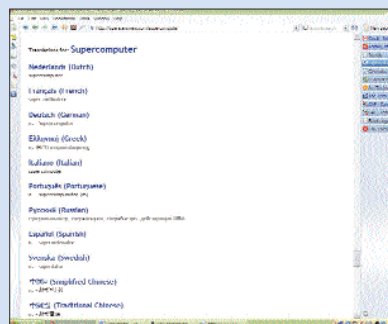
Triggering an Answers.com search based on the word "Supercomputer"



The Wikipedia entry for supercomputer, on the same page as the dictionary



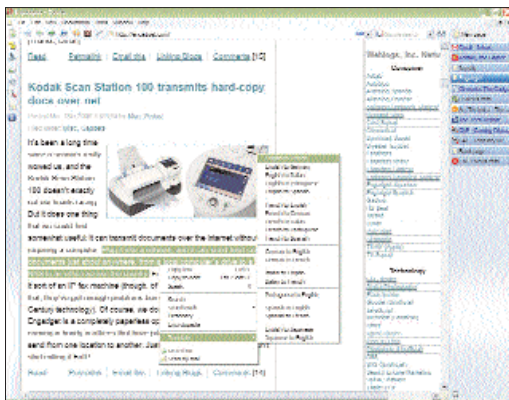
The entry for "Supercomputer" under Answers.com, here the dictionary entry



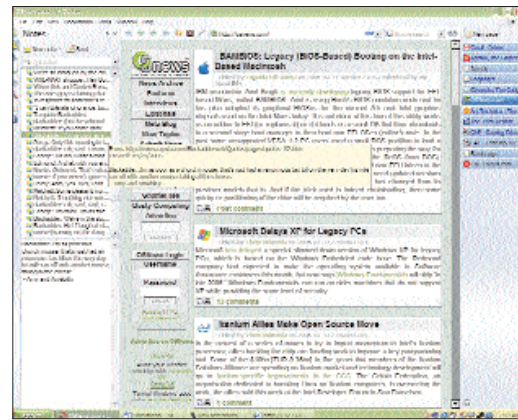
The word "Supercomputer" translated into various languages, also on the same page

is Notes: Opera can collect any selected text and store it as a note. Collected notes are searchable in their entirety via the Notes panel, triggered by pressing [Ctrl] + [6] or via the left panel. You can copy selected text to a note by [Ctrl] + [Shift] + [C], or you can copy the contents of the clipboard to a note via [Ctrl] + [Shift] + [V]. You can e-mail a note via a right-click; Opera will use either its inbuilt e-mail client or an external program, depending upon your configuration.

Opera can read out a page for you. To enable voice, double-click on some text and select Speak. Unfortunately this requires an additional 10.5 MB download. After the download, you can select



Translating selected text into various languages is just a click away



Notes are a great way to collate varied bits of information from the WWW, like the Blackadder quotes here

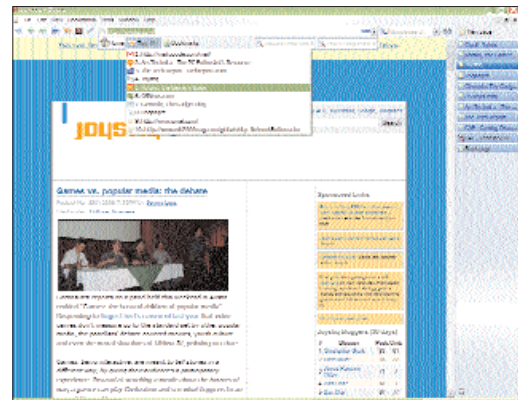
any text and then hit [V] (or select Speak) to ask Opera to read the selection out to you.

Voice commands, too, are supported in Opera. To enable voice control, go to Tools > Preferences, click on the Advanced tab, and select Voice from the left-hand pane. You can command the software by pressing the [Scroll Lock] key and prefixing a command with "Opera"—thus pressing [Scroll Lock] and saying "Opera Exit" will exit the application.

Opera's Start Bar is one of those elements which at first might seem frivolous in an interface, but once you use it, you'll wonder how you ever did without it. To access the Start Bar, click anywhere in the address field, or press [F8]. The most important element here is the "Top 10" button, which lists the 10 Web sites you frequent most. Also notable is the Amazon.com search engine, but less so, because you can trigger a search in nine search engines right from the address bar. For example, press [F8] to highlight the address bar, then type in "g thinkdigit" to trigger a Google search on "thinkdigit." Here are some other search engines you can use:

TO USE THIS SEARCH ENGINE	PRESS THIS KEY
Google groups	[R]
Google News	[N]
Download.com	[W]
Amazon.com	[Z]
eBay.com	[E]

Opera has perhaps the best implementation



Opera's Start Bar lists the Top 10 Web sites you visit most frequently



of tabs amongst current browsers. You can open a new tab by middle-clicking your mouse on any empty area of the Page Bar, or via [Ctrl] + [N]. You can also close an open tab by middle-clicking directly on the tab. Middle-clicking on a link will open the link in a background tab. To close a tab, press [Ctrl] + [W]; to close all tabs, press [Ctrl] + [Alt] + [W]; to close all tabs but the one you're in, press [Ctrl] + [Alt] + [Shift] + [W]. This might seem like an awful lot to remember, but you'll get used to it once you start using it regularly!

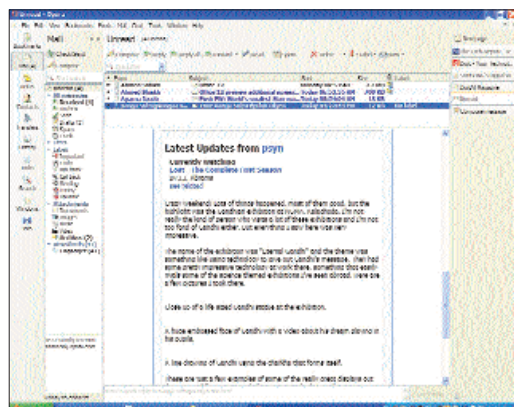
You can cycle forward through open tabs by pressing [Ctrl] + [Tab]; this can also be done by keeping the right mouse button pressed and rolling the scroll wheel. Incidentally, using the scroll wheel while keeping the *left* mouse button pressed will zoom in and out of the page—note that this zooms both the fonts and the images. You can maximise a tab by pressing [F11]; pressing [Ctrl] + [F11] will fit all text to the horizontal size of the window, thus eliminating the dreaded horizontal scroll in a Web page.

Mouse gestures are a novel way to navigate Opera. Those of you using Firefox might be familiar with mouse gestures if you have the extension that enables it. When you first use a gesture—perhaps accidentally—Opera will ask if you wish to enable the feature; click on [Yes]. For example, you can hold the right mouse button and draw an “L” onto a Web page to tell Opera to close it. Here are some other gestures you can use (with right mouse button):

MOUSE GESTURE	ACTION
Move down	Open new window
Move up and down	Reload
Move up, then right	Restore or maximise window
Move down, then left	Minimise window
Move down, then up	Duplicate window
Move down, then right	Close window

## Communication 2.0

Opera comes with a very capable e-mail engine called M2 that allows for quick searches both on the subject and the content of an e-mail message. Moreover, the engine is flexible enough to be used as an RSS feed reader. To enable the mail client, go to **Tools > Mail And Chat Accounts**. Opera will then take you through the setup process. You can now open the e-mail panel by pressing [Ctrl] + [3]. The M2 mail client auto-



Opera's e-mail client; note that the two mails with attachments are automatically filtered under Archives in the left Mail panel

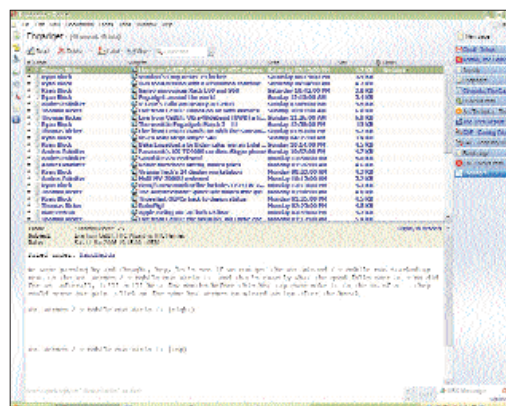
**Mouse gestures are a novel way to navigate Opera. For example, you can hold the right mouse button and draw an “L” onto a Web page to tell Opera to close it**

matically filters your e-mails into preset categories. For example, all incoming mails with attachments will be found under the Attachments heading in the Mail panel. Moreover, there is further filtering into documents, image, music, video, and archive attachments. You can use this feature to quickly track down a particular mail.

Also note the Label field here. As you can guess, you can label each message with a particular tag—say Important, Mail back, Funny, or whatever. This helps in managing your mail, and is a feature similar to the Star feature in Gmail. Speaking of which, much like Gmail, Opera can send a quick reply to a mail. This is done simply by typing in some text in the Quick Reply field that accompanies each mail and then hitting the button. A quick reply quotes the original mail and appends your entered text to the beginning.

You can change the default signature while sending mails: go to **Tools > Mail And Chat Accounts**, select your e-mail account, and click on Edit. Now head to the last tab, titled Outgoing—you can use a custom signature by typing it in here. If you have a back-and-forth communication ongoing, the M2 mail client will track the conversation under the Active Threads heading. Moreover, M2 can track the contacts you converse with. Such contacts will be listed under the Active Contacts heading. You can also manually add a contact by right-clicking on an e-mail ID and choosing “Add to contacts.”

The mail engine is also capable of fetching your RSS feeds and mailing lists. Subscription to an RSS feed works much the same way that it does under Firefox—if a Web page has Atom or RSS feed subscription, a feed icon will appear in Opera's address bar. To subscribe, click on the icon. RSS feeds are listed in the Mail panel under Newsfeeds. Once again, the best thing about M2 is that it is searchable in its entirety—you can therefore search the contents of an e-mail and of



Reading RSS feeds under Opera

all your RSS feeds using the same Start Search window in the e-mail panel. Note that you can also search for a contact using [Ctrl] + [4] and search through your notes using [Ctrl] + [6].

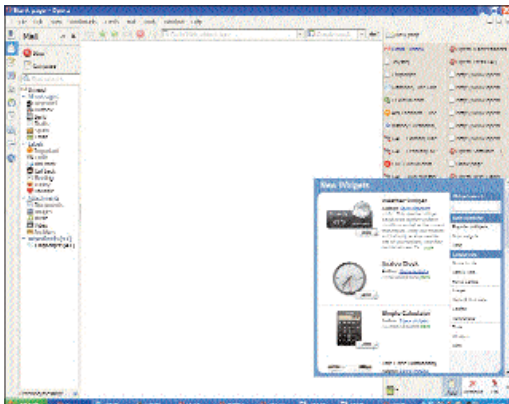
The M2 mail client has a spam filter that functions on a whitelist. This means that it will tag suspicious messages as spam unless you manually tell it not to. You can also create fil-



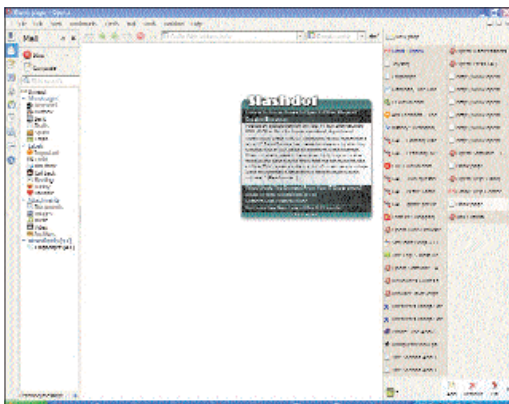
ters based on To, From, Subject, and other fields. To do so, right-click on the Mail panel and click on New Filter; name the filter, click on the Rules tab, and then on New Rule to add rules based on the listed criteria. For the highest efficacy, select the "Learn from messages added..." checkbox.

Finally, Opera can also serve as your IRC chat client. You can surf your favourite DALnet and Undernet channels using Opera. Each chat window is treated as a separate tab, and downloads are handled via the same Transfers window that is used by the rest of the browser. To enable this client, go to **Tools > Mail And Chat Accounts**, then New, and then Chat (IRC).

With a comprehensive e-mail client, an RSS/Atom reader, a contacts manager and an IRC chat client, Opera ably offers a comprehensive package for staying connected to the WWW. Notably, the new version of Opera—version 9.0—is also set to introduce BitTorrent support and introduce widgets to the browser—applets that brings in information snippets from the Net. These could be news, RSS feeds, stock prices, and so on.



The upcoming version of Opera adds desktop widgets to the mix



This widget lets you view the latest Slashdot posts. Note that the widget is visible even if the browser is minimised

## Issues 2.0

Opera's Web rendering engine is second to none. It's fast and accurate, and is especially great in a low-memory, dial-up setup. It's not all rosy in the Opera camp though. Although the browser strives to be 100 per cent W3C compliant, Web developers are far from getting there. Every now

and again you will stumble upon a site that doesn't render quite right under Opera. For example, the Gmail/Google Talk integration does not work. You can report a problematic site with a few simple clicks, though: to do so, go to **Help > Report A Site Problem**.

The so-called Web 2.0 era is fast approaching. AJAX Web sites already offer desktop-quality software online, as is evident when using sites such as Writely, Gmail, and Flickr. The Web browser, then, is poised to become an even more important element in our software repertoire. Little wonder then that Microsoft is scrambling to blur the lines between its desktop and online offerings, via both its upcoming Windows Vista as well as online services such as Live.com. The Mozilla Foundation also has great plans for Firefox, as does the Konqueror team which has risen to prominence thanks to Safari's use of the KHTML rendering engine.

The team behind Opera has done wonders with this little package. The browser is winning market share in the mobile market—it can be found on Symbian and Windows-powered cell phones, PDAs, and the Nokia Internet Tablet, and will soon be available on the Nintendo DS handheld gaming console. There is competition in the air, and that's a *Good Thing*. ■

*readersletters@thinkdigit.com*

1/4 th pg AD



**Take your pick! We've tested 33 LCDs—from compact 15-inchers to 19-inch monsters**





Jayesh Limaye and Anup Nair

**W**ith their sleek lines, thin profile, light weight and flat screens, LCD monitors have always caught one's fancy. Their high costs limited them to niche segments, though, but due to several factors, prices of LCD screens are plummeting. The smaller ones have now come within the reach of home users, and LCDs seem poised to replace CRTs for good.

There is a variant in the LCD space which must be talked about here. Regular CRT monitors and LCD panels come in what is termed the 4:3 aspect ratio. Your television set, for example, has a 4:3 display screen. Some displays, however, come in a 16:9 screen ratio, which means the width of the screen is significantly more than its height. Such a display is called a "widescreen," and makes for a better movie-watching experience.

While the widescreen aspect is another positive on the LCD's side, viewing angles have been a problem: an LCD tends to appear darker and discoloured when viewed beyond a certain angle. This is undesirable when the screen is being viewed by number of people seated at different positions—as would be the case if they were watching a movie. Some displays today apply a special coat to their LCD panels, which goes a long way in increasing the viewing angle and the image contrast ratio (more on contrast ratio later).

Before you pick an LCD monitor, we must point out another

potential roadblock to its enjoyment. It might have a slow response time, which can lead to the appearance of trails, or what is known as "ghosting" of images. Ghosting is generally visible as trails behind fast-moving objects. It is a somewhat subjective effect—some people can see it, others cannot. It is thus a good idea to try out a movie or a game on an LCD panel before purchasing it.

We must tell you that LCD monitors aren't yet perfect for movies or games. Thankfully, at least one issue seems to be resolved: buyers were often told to beware of dead pixels before picking an LCD screen. (A dead pixel is one that is either always on or off, and is thus useless in general, everyday use.) With better quality control, however, dead pixels are rarely seen on LCD panels today.

Here, we compare a range of available LCD monitors. We received a total of 33 monitors for this test. Of these, the 15-inch category consisted of seven units from seven brands, the 17-inchers consisted of 15 from 12 brands, while there were 11 19-inch monitors from nine brands. NEC sent in the highest number of LCDs at seven. Our effort here has been not to help you make a well-informed purchase decision.

### A Look At Features

Let us first take a look at some of the key features to look at before you zero in on an LCD. These are by no means the only features there are, but are certainly the most important aspects of such a display unit.

### Pixel Pitch

The distance between two white pixels or two sub-pixels of the same colour is known as the pixel pitch of the monitor. A white pixel is made up of three sub-pixels—one red, one green and one blue. All the categories saw pixel pitches of 0.29mm and 0.26mm. Pixel pitch varies with monitor size, and is generally fixed across a size category. Needless to say, the individual size of each sub-pixel is smaller than the pixel pitch.

### Native Resolution And Screen Aspect Ratio

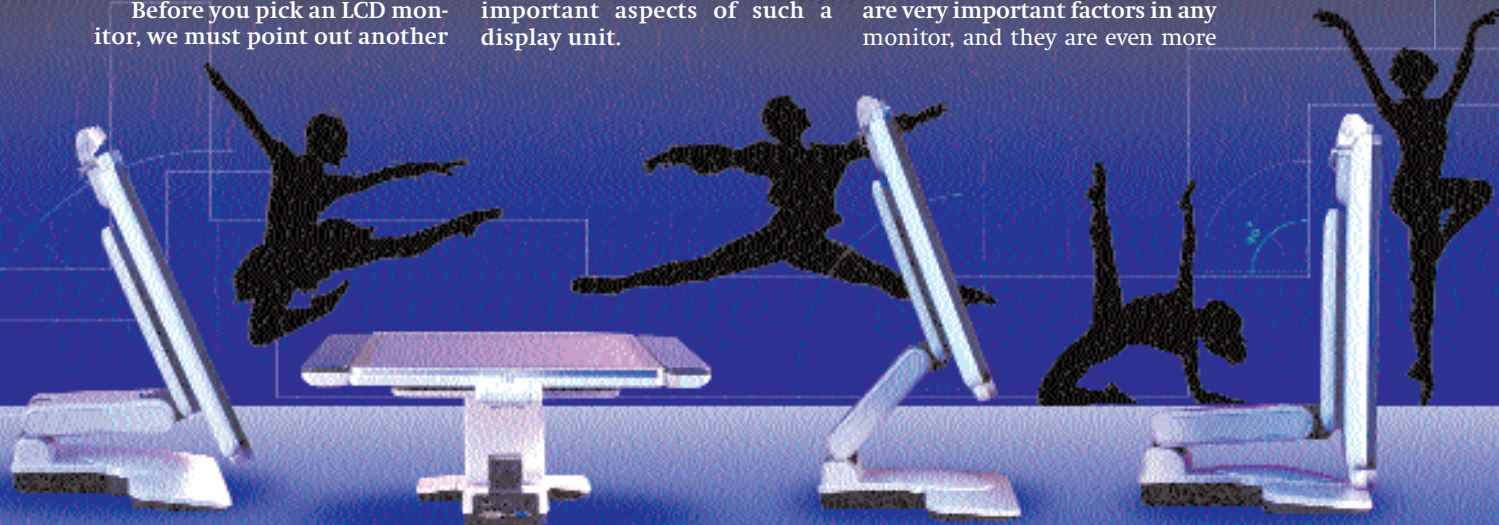
LCD monitors have what is called a "native resolution," and cannot display crisp images at a resolution other than this resolution—unlike CRT monitors. If you change an LCD's native resolution, you will see a badly focused image, and hard-to-read fonts with blurred edges.

The 15-inch and 17-inch models we received had native resolutions of 1024 x 768 and 1280 x 1024 respectively. The 19-inch monitors had a native resolution of 1280 x 1024 when the aspect ratio was 4:3, whereas it was 1440 x 900 when the aspect ratio was widescreen, at 16:9.

The widescreen aspect ratio was only seen in the 19-inch category. The monitors with a wide aspect ratio were the Acer AL1916W, Asus PW191 and the CMV CT-937A. A wide screen is especially good when you're viewing wide-screen movies.

### Luminance

Luminance and contrast ratio are very important factors in any monitor, and they are even more





important for an LCD. Unlike CRTs, in which these depend on the phosphor screen, LCDs have a fluorescent lamp built into the LCD monitor's casing. The brighter the lamp, the higher the luminance, and the better the monitor. The lamp rating is what determines the brightness level the monitor can achieve. A higher luminance means the LCD is easier to view in a bright room and from a distance.

In the 15-inch category, the NU L511E had the highest luminance rating at 300 cd/m<sup>2</sup> (candelas per square metre). The rest of the 15-inch category had a luminance of 250 cd/m<sup>2</sup>. Under the 17-inch category, the Asus PM17TU had a luminance rating of 500 cd/m<sup>2</sup>—the highest we've seen amongst all the LCDs featured in this test. Note that this is a vendor-specified rating, and a rating of 500 means that the LCD can look bright even in a fully-lit room. The CMV CT-712A, with a luminance of 400 cd/m<sup>2</sup>, had the second-highest luminance rating. We were surprised to see that the highest luminance in the 19-inch category was 330 cd/m<sup>2</sup> of the CMV CT-937A,

while most of the LCDs in this category had luminance ratings of 300 or less. The lowest luminance rating was seen in the 19-inch Philips 190V—240 cd/m<sup>2</sup>.

### Contrast Ratio

The ratio of the brightness of pure white versus pitch black that the monitor is capable of displaying is known as its contrast ratio. Monitors with a higher contrast ratio display images with better visual depth. A monitor with a higher

contrast ratio also allows you to fine-tune its contrast settings to suit different lighting conditions.

As a rule of thumb, a contrast ratio of 120:1 is enough to display most colours. When the contrast ratio is even higher, the LCD is able to display more levels of grey. What this means is that with an LCD with a high contrast ratio, you will be able to see more shades of colour.

The NU L511E and the Samsung SyncMaster 540N claimed the highest contrast ratio of 500:1 amongst the 15-inchers. The others had contrast ratios of 450:1 and 400:1. In the 17-inch LCDs, the BenQ FP71E+ boasted of a very high contrast ratio of 1000:1—the highest of all LCDs in the test. This means the user has a wide range of contrast and brightness to play with. Most others in this category had a contrast ratio of 600:1 or 500:1. The ViewSonic VA712 had the lowest contrast ratio of 350:1, leaving little room for tweaking.

In the 19-inch models, the highest contrast ratio—800:1—was seen on the NEC MultiSync LCD1920NXp, followed by the Acer AL1916W with 700:1.



Samsung SyncMaster 540N

## How We Tested

**T**he monitors were tested keeping in mind performance, features, and value for money. Before running the tests, the monitors were placed perfectly vertically in order to eliminate any uniformity issues, and were auto-calibrated. All the monitors were set to their native resolutions, and the drivers were loaded for best performance.

**The Test Bed:** Both the reference and the test systems were running on an Intel Pentium 4 3.0 GHz with 1 GB of DDR SDRAM, and were powered by an nVidia 5950 Ultra graphics card. The test rigs had a 120 GB 7200 rpm SATA hard drive. Windows XP Professional SP1 was loaded, along with the latest version of DirectX and other device drivers.

**Features:** In the Features tests, we looked for value-additions and other aspects that increased the user-friendliness of a display. The features noted varied in significance—some were simple, like the user-friendliness of the OSD (On-Screen Display); some were important, such as power consumption, depth and weight. One important thing we looked at was the monitor base, which decides the tilt the monitor is capable of—the more the better. Some LCDs can be rotated vertically for both landscape and portrait orientations. A portrait orientation is especially useful while reading a long Word file or a PDF document, as it reduces the need to scroll off a screen. We also rated additional features such as Web camera, additional inputs such as DVD-D, USB, etc.

**Performance:** We used the DisplayMate benchmarking software to gauge the LCD monitors' performance. This software uses images to test a monitor for criteria such as Point Shape and Visibility. For example, this test can be used to determine how accurately the LCD

can display a fine point, and whether or not it is able to retain the round shape of a dot.

In the colour and greyscale set of tests, we checked for colour reproduction, the level-shift problem, and the streaking or ghosting effect. We ran the 16-intensities and 64-level primary and secondary colour intensities tests to see how well the monitors could display shades.

In the miscellaneous tests within DisplayMate, we checked for screen uniformity. We also tested the Reverse Video Contrast. The Pixel Persistence Test was run to check for jerks or image blurring.

We used the Passmark Monitor Test to check for image persistence at the edges. This is a measure of the LCD's response time.

For the viewable text angle test, we used a protractor placed in-line with the LCD panel, and the screen was viewed from either side. A document containing different fonts was viewed from various angles, letting us determine the angles at which the text still looked sharp. Similarly, for the viewable movie angle test, we viewed a movie from various angles and determined the angle at which discolouration of image began.

**Price:** We took the price of each monitor into account before assigning it a final score.

### How We Awarded

The features, performance and price scores were given relevant weightages, and an overall score out of 100 was calculated.

The product that scored the highest was adjudged the winner of the Digit Best Buy Gold award for its category, while the second highest got the Digit Best Buy Silver award.



## Response Times

The response time is the time it takes for a pixel to change its state from on to off or from off to on. These times for LCD monitors have traditionally been slower than those of CRTs. The effect of this can be seen in the form of trails following bright, fast moving objects, and also leads to blurry images. This spoils the movie-watching or gaming experience.

Newer LCDs have a lower response time, so their pixels switch much faster—allowing you to view movies and play games without the problems that were previously associated with LCDs.

At 12 ms, the BenQ FP51G had the fastest response time amongst the 15-inch LCDs. The ViewSonic VX922, which is touted as the world's "fastest" LCD monitor, boasted of an incredibly low 6 ms response time which, using proprietary techniques, they claim to boost to 2 ms, making it good enough for any purpose, gaming included. Similarly, the Asus PM17TU in the 17-inch category also claims to achieve a low response time of 3 ms using a proprietary technique. 8 ms was the lowest response time in the remainder of the 17- and 19-inch monitors. A response time of 8 ms is fine for watching movies, but may not be good enough for fast-paced games.

## Dimensions

When you talk about an LCD monitor, you instantly think of a compact device with sleek dimensions—so much more attractive than a bulky CRT monitor!

In the 15-inch category, the BenQ FP51G had the smallest dimensions: 330 x 337 x 134.6 mm. In the 17-inch category, the LG FLA-TRON L1730S had the smallest dimensions. The NU L921G had the lowest dimensions and footprint in the 19-inch category, making it the sleekest 19-inch panel.

## Weight

It's not often that you change the physical placement of your monitor. The weight is therefore not that important as far as a monitor is concerned. But it is always nice to have a lighter monitor, isn't it? Interestingly though, heavy monitors tend to be steadier on their feet—more stable on a table.

Of the 15-inch monitors, the Acer AL1515sm was the lightest at 3 kg, whereas the Samsung Sync-

Master 540N was the heaviest at 4.5 kg. The CMV CT-712A was the lightest at 3.4kg, while the BenQ FP72V was the heaviest at 7.5 kg in the 17-inch category. Amongst the 19-inch LCDs, the CMV CT-937A weighed in at just 4.7 kg which is quite light for a 19-inch monitor, while the NEC Multi-

Sync LCD1980FXi was the heaviest of the lot.

## Flexibility

Height adjustment allows you to set the monitor at a level that is most comfortable for viewing. This feature is very useful as far as ergonomics and comfort is concerned. If the monitor does not allow for this, you might need to adjust the height of your chair, which is not always possible.

Height adjustment was entirely absent in the 15-inch category. Amongst the 17-inchers, the BenQ FP72V and the NEC MultiSync monitors supported height adjustment. In the 19-inch category, the Asus PW191 and NEC MultiSync had this feature.

A few LCDs also have the horizontal and vertical swivel feature, which is an added bonus. This lets you adjust the monitor's angle to suit your comfort levels.

All the monitors supported vertical tilt, a feature missing in many monitors in our last LCD test. There were quite a few monitors that also featured horizontal swivel adjustment; prominent amongst them were the Asus PW191, the LG 1950SQ and the NEC MultiSync LCD1970NXp in the 19-inch category. Amongst the 17-inchers, the NEC MultiSync LCD1770NX and the NEC MultiSync LCD1770NXm featured swivel.

## Other Features

Most graphics cards today, even entry-level ones, feature a DVI interface. DVI provides a pure digital video signal, and if your monitor supports the input, then the necessity of conversion between analog and digital signals is eliminated. The result is a lossless transfer of the video signal, and the overall image quality being better than with the D-sub interface.

This interface was not found in any of the 15-inch monitors, but was featured on a few 17-inchers and on most of the 19-inch models.

The 17-inch BenQ FP72V also featured two side-panel speakers and a USB Web cam on top, making it a good integrated solution. The 19-inch Asus PW191 was the only LCD monitor with feather-touch controls, but as we found out, it was difficult to use—the controls were unresponsive most of the time. Also, it was difficult to view the controls in a moderately lit room with the monitor turned off.

The NEC AccuSync LCD 1770NXM was the only monitor that sported a USB hub, providing a convenient way to connect multiple input devices to your PC.

## Power Consumption

One of the better known pluses of LCDs is their low power consumption. However, it is also true that their power requirements are often not substantially lower than those of CRTs. 15-inch LCDs need anything between 25 W and 36 W. 17-inchers need between 40 W and 60 W of power, and the power requirements of 19-inch LCDs are similar to 17-inch units. You should check the

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BenQ FP51G

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NU L511E





## Looks Matter

This year we have seen remarkable improvements in the design of TFT-LCD monitors. Dual-toned, double-hinged, adjustable heights, pivots and touch sensors, were some of the features we encountered in this comparison test.

Along with performance and features it is important to consider appearance and build quality. Since beauty lies in the eye of the beholder, you can get an idea about the “looks” of every monitor we tested from the thumbnails placed under our comparison table. As for their build quality, you have to actually see one to best judge it. Some models paid attention to such design aspects and some of them were just plain, and there is thus nothing better than touching and feeling a unit personally. Let’s take a look at the striking models in each category.

### 15-inch

There was very little variance in appearance under the 15-inch banner. Most of the models were the generic single hinge type, meant for tilting the monitor screen about the horizontal axis, with a simple black-silver colour combination. The LG Flatron L1520B stood out as the better-looking 15-inch monitor with its aesthetic design. The heavy, steel circular base assured that the monitor stayed put on the desk. The NEC AccuSync LCD52V

was the only single-tone (dark grey) LCD monitor in the lot.

### 17-inch and 19-inch

This is where all the *masala* was to be found. Many of the design features, such as double-hinge and pivot, were common to both 17- and 19-inch displays; as such, we have clubbed these together.

BenQ, with its FP72V 17-inch unit, steals the limelight in its category. Its combination of ivory-white and grey exteriors along with speakers, a double-hinge mechanism and an integrated Web cam make it the most stylish monitor in its class.

None of the other 17-inch monitors had a double-hinge like the BenQ FP72V, but they differed in styling. For example, the New Universe (NU) monitors had a thin metal border as the frame to its screen, and others such as Acer, Gigabyte and LG retained the slim, bezel appearance. The Asus PM17TU sported a glossy or mirror-finish on its front face.

At first glance, you can easily pick apart the Asus PW191 from its 19-inch brethren. Its black piano-finish casing, enclosing the touch sensor panel, and its WXGA widescreen was very striking indeed. Its heavy base and stand made up of aluminium exemplifies superb build quality. Thanks to a pivot head

located at the back of its screen, you can rotate it by 90-degrees to portrait mode. If you are impressed by the description so far, we advise you to read our full review as appearance is only the first impression.

The Acer AL1916W and the CMV CT-937A were other 19-inch widescreen monitors. The latter has a design that resembles the Nokia 7610 mobile phone with one sharp corner and the other rounded. We also liked the ViewSonic VX922 for its simple yet classy design.

Usually, the stand is made up of double-hinge (such as the one found in the Asus PW191 and the BenQ FP72V) by which the screen of the monitor can be moved up and down as a height adjustment feature. But NEC engineers have intelligently managed space by employing adjustable height without the use of second hinge. Two concentric rectangular box form the stand of the screen. The outer box moves up and down while the inner one is fixed to the base of the stand. A click is heard when the maximum height is reached. A user can choose any height between the maximum and minimum, and the screen will rest in that position until forcefully moved. Apart from this unique feature, the NEC monitors were plain-looking, with a dark-grey exterior.

power rating of the LCD you plan to purchase, and note whether there is a substantial power saving to be had with a different model. This might not make much of a difference to a home user, but in an office where a lot of monitors are deployed, the power costs will add up and most certainly make a difference.

In the 15-inch category, the NEC, NU and Samsung had a power consumption rating of 25 W each—the lowest in this group. The Philips 170S had the lowest power consumption in the 17-inch category. Even amongst the 19-inchers, the Philips 190V boasted of the lowest power consumption—34W—closely followed by the ViewSonic VX922, at 35W.

## A Look At Performance

The monitors were tested using display benchmark utilities—DisplayMate Video Edition and the Passmark monitor test utility, along with several real-world tests. These included the viewing angle test and looking for the ghosting effect under movies.

## Sharpness And Resolution

We checked for the sharpness of images using the Point Shape and Visibility screen in DisplayMate. This test displays fine white dots against a black background. We observed the screen for pixel bleeding, and found that most monitors had some amount of bleeding at the edge. Bleeding results in a red, green or blue

tinge at the edge of a pixel dot. We found the Samsung SyncMaster 740N in the 17-inch category the best in this test.

In the video bandwidth test, a fine white line is drawn on a black background. This test is used to see how accurately the lines are drawn, and whether there are any discrepancies in their geometry or characteristics.

In the 15-inch category, the Gigabyte GD-1503B displayed blue tinges running across the length of the line at the edge. This was also the case with the NEC AccuSync LCD72V under the 17-inch category and the NU L921G and the NEC MultiSync LCD1970NXp in the 19-inch category. This test is important for people who use imaging software, where accurate reproduction of finer elements is of prime importance.

The Samsung SyncMaster 540N in the 15-inch category, the Samsung SyncMaster 740N in the 17-inch category and the BenQ FP91V in the 19-inch category were found to be the best in their class. We must stress that we did not find



BenQ FP72V



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NU QL-711V

too much difference between the monitors in this test.

### Ghosting

Ghosting, or streaking, is a major drawback of LCD monitors. It typically occurs during fast-moving scenes in movies, or while playing fast-paced games. This puts a strain on the eyes.

To check for ghosting, we ran four different ghosting screens in DisplayMate, and found that most monitors returned good results, with the exception of the Gigabyte GD-1503B, the NU L511E and the Samsung SyncMaster 540N in the 15-inch category, as also the NU QL-711V in the 17-inch category, which displayed a higher amount of streaking in the colour streaking test.

We also ran an additional test that involved watching a movie clip that showed fast-moving objects, in order to confirm our observations.

### Level Shift

In this test, we looked for white and black level shifts, which happen when two adjacent areas differ greatly in contrast. This results in the spillage of the dark colour into the adjacent white area. In this test, most of the LCDs fared well with very little shift visible. Level shift was not noticeable in any of the LCDs at any kind of alarming levels. Level shift, if high, can be a big problem in Photoshop-like applications, where there are often light and dark areas adjacent to each other.

### Text-Colour Combination

Here, we checked for how the monitors reproduced coloured fonts on backgrounds of different colours. LCDs have red, green and

blue sub-pixels that make up a pixel. When coloured text, say magenta, is displayed on a grey background, you can easily identify the black space between two magenta dots, making the font look serrated. We checked for the readability of the text and also if the surrounding colour spills off the text.

Of the 15-inchers, the Gigabyte GD-1503B returned the worst results—it showed colour spillage problems with fonts of almost every colour. The NEC AccuSync LCD52V returned the best scores in this category. In the 17-inch category, the CMV and Intex monitors were the worst performers, whereas others that performed better were almost on par. There were not many variations in the LCDs in the 19-inch category—they all did well.

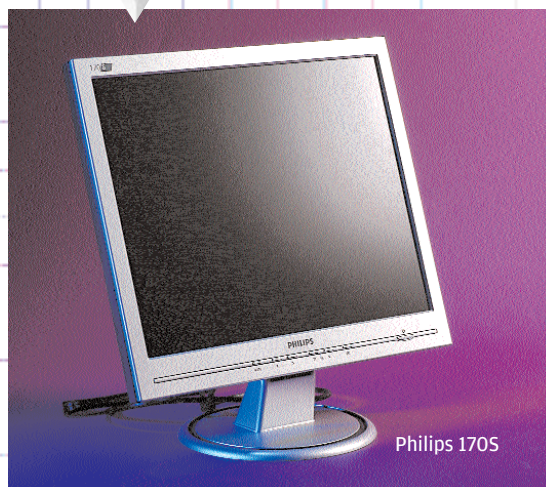
### Intensity Levels

In this set of tests, we looked for how well the LCD monitors could display 16, 64 and 256 shades of grey. Most LCD monitors cannot display more than 64 shades correctly; as such, the 64-intensities test with secondary colours and the 256-intensities tests are especially important.

In this, contrast and brightness play an important role—an overly bright screen will not display shades of grey in the light region, and a dark screen will merge shades on the darker side. We found that in the 15-inch category, the BenQ, Gigabyte and the LG fared better than the others. In

the 17-inch category, both the BenQs, the LG, the Philips and all the NEC monitors were found to excel under this test, indicating that these had a better contrast ratio.

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BRAND	Acer	BenQ	Gigabyte	LG	NEC	NU
MODEL	AL1515 sm	FP51G	GD-1503BP	FLATRON L1520B	AccuSync LCD52V	L511E
Features	15.65	15.71	15.06	14.60	15.24	16.28
Pixel Size (mm)	0.297	0.297	0.297	0.3	0.297	0.297
Luminance (cd/m²)	250	250	250	250	250	300
Contrast Ratio	450:1	450:1	450:1	400:1	400:1	500:1
Maximum Resolution (H. Pixels x V. Pixels)	1024 x 768	1024 x 768	1024 x 768	1024 x 768	1024 x 768	1024 x 768
Screen Aspect Ratio (Normal/Wide)	Normal	Normal	Normal	Normal	Normal	Normal
Response Time (ms)	16	12	16	25	25	25
W x H x D (mm)	345 x 353 x 160	330 x 337 x 134.6	408 x 400 x 140	363.8 x 330.7 x 220	344.6 x 352.7 x 165	366 x 357 x 163
Weight (kg)	3	3.8	3.3	3.2	3.3	3.2
USB Hub (Y/N) / Number Of Ports	6	6	6	6	6	6
Inbuilt Speakers (Y/N) / Watts	4	4	4	6	4	6
VESA Wall Mount	4	4	4	4	4	4
Swivel Base Vertical / Horizontal Axis (Y/N)	4/6	4/6	4/6	4/6	4/6	4/6
Height Adjustment (Y/N)	6	6	6	6	6	6
Portrait Mode (Y/N)	6	6	6	6	6	6
Power Consumption (Watts)	30	30	36	28	25	25
Input Interfaces	D-Sub	D-Sub	D-Sub	D-Sub	D-Sub	D-Sub
Extra Features If Any (Web Cam Etc.)	None	None	None	None	None	None
Performance	45.09	47.00	44.09	44.74	46.22	45.89
Displaymate Video Edition (So5)						
Sharpness And Resolution						
Point Shape And Visibility	3.75	4	3.75	3.5	3.75	3.5
Video Bandwidth Test	3.5	3.5	3	4	3.75	4
Colour And Greyscale						
Streaking And Ghosting	3.75	3.75	3.5	3	4	3.75
Bar Streaking	3.75	3.5	3	3	4	3.75
Colour Streaking	3.75	3.5	3	3	3.75	3.75
Mid-Range Streaking	4	3.5	3.25	3.5	4	3.75
White-Level Shift	4	3.5	3.25	3.5	3.75	3.75
Black-Level Shift	3.5	3.75	3.75	3.5	3.75	3.75
RGB Purity	4	4.25	4.25	4.5	4.5	4.25
Text Colour Combination	3.25	3.5	2.5	3	4	3.5
16-Intensities Levels	4.5	5	5	5	3.5	4.5
64-Intensity For Primary Colours	3.5	3.5	3.25	3.5	3.5	3.5
64-Intensity For Secondary Colours	3.5	3.75	3.5	4	3.25	3.75
256-Intensities Level	3.5	4.5	4.5	3.75	3.75	3.75
Colour Scales	3.5	4.5	4.5	3.5	3.5	3.75
Miscellaneous Tests						
Reverse Video Contrast	3.5	4	4	4	3.75	3.75
Screen Uniformity	3.5	4	4	4.5	4	4
Passmark Monitor Test						
Pixel Persistence Test (So5)	2	2	1.5	2	2	1.5
Miscellaneous Tests						
Viewable Angle Test (Text) (Degrees)	150	155	155	160	155	155
Viewable Angle Test (Movie) (Degrees)	115	125	120	130	125	120
OSD Usability Test (So5)	4	4	3.5	4	4	4
Price Index	13.35	13.48	15.00	12.71	10.60	13.35
Price (Rs)	9,999	9,900	8,900	10,500	12,600	9,999
Overall Score	74.09	76.20	74.15	72.05	72.06	75.52



+ Low price  
- Low viewing angles



+ Good performance  
- None in particular



+ Low price  
- Below-average performance



+ Good viewing angles  
- Average performer



+ Good build quality  
- Expensive



+ Low price  
- Below-average build quality



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Almost all the 19-inch monitors performed very well in this test. If a monitor performs below satisfaction in this test, the user will need to manually calibrate the monitor for contrast and brightness rather than relying on the auto setting.

### Screen Uniformity And Reverse Video Contrast

In the Screen Uniformity test, a grey screen was used to check for odd colour patches, if any. In the Reverse Video Contrast test, coloured text on white and two different shades of grey was used. Most of the monitors in all the categories did just fine in this test. The exception was the NEC AccuSync LCD72V, which had many bad patches.

### Passmark Monitor Test

We used the LCD pixel persistence test in the Passmark monitor test to check for the pixel persistence problem with the panels. In this test, a bright white block moves at various speeds across the monitor, ranging from 100 pixels/second to 800 pixels/second. The entire set of monitors in both categories failed to display the slowest moving block without persistence—all of them therefore scored very low.

Our test results lead us to believe that none of the LCDs are at a stage where they could be considered good for games or movies. If you're into gaming, you're better off with a CRT. If you want to watch movies on an LCD panel, don't expect an exceptional viewing experience. For this reason, we also watched a movie clip with fast moving scenes to better judge the pixel persistence.

### Viewable Angle Test

Here, we used a text screen in DisplayMate, and a movie scene, to find the maximum viewing angle of each monitor. In the movie test, we looked for the point at which the centre of the screen just begins to get discoloured whereas in the text angle, we looked for the angle at which the text is just readable.

The LG FLATRON L1520B (15-inch), CMV CT-712A and LG FLATRON L1730S (17-inch) and BenQ FP91V, CMV CT-937A, LG FLATRON L1950SQ and NEC MultiSync LCD1980FXi (19-inch) returned the highest results in this test.

Of these, the NEC MultiSync LCD1980FXi was seen to have the highest movie viewing angle of 150 degrees, which is the highest we have seen—significantly more than its closest competitor at 135 degrees. We could not find any discolouration of the screen at all, even past this angle. Most panels returned a higher viewing angle in text mode—this was because of the bright

background. They suffered in the movie test because the movie was a mix of bright outdoors and dimly-lit indoors scenes.

### And The Winner Is.....

Thus far, we have compared the features and performance of LCD monitors. But there is one more criterion that decides the winners—price. And so, here's our final tally!

### 15-INCH LCD MONITORS

The BenQ FP51G had a good contrast ratio and brightness and was also the fastest LCD in this class with a rated response time of just 12ms. It was also the second-best performer in the category. It retails at just Rs 9,900, second only to the Gigabyte GD-1503B. Its lower price and overall good performance and features made the BenQ FP51G the Digit Best Buy Gold winner.

The NU L511E topped the features score because of better features such as its high contrast ratio and brightness. It was one of the lighter LCDs, weighing just 3.2kg. Though an average performer, its low price of Rs 9,999 makes it the Digit Best Buy Silver winner in the 15-inch category.

### 17-INCH LCD MONITORS

The BenQ FP72V scored the highest in Features, but it was also priced much higher, at Rs 23,900.

The NU QL-711V had low power consumption, a good contrast ratio, and a good brightness rating. But it scored average in Features and Performance. However, with a rock-bottom price of just Rs 11,970, the NU QL-711V secured the Digit Best Buy Gold.

The Philips 170S scored high in Performance

**BEST BUY**  
**digit**  
APRIL 2006



#### Samsung

#### SyncMaster 540N

16.11  
0.297  
250  
500:1  
1024 x 768  
Normal  
16  
337.5 x 264.5 x 160.2  
3.65  
6  
6  
4  
4/6  
6  
6  
25  
D-Sub  
None  
47.14

4

4

4

3.75

3.75

3.75

3.75

3.75

4.5

3.75

4.5

3.75

3.75

4

4.25

3.5

3.75

1.5

155

130

4.5

12.14

11,000

75.38

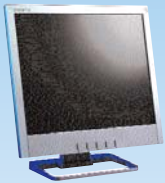







+ Sharp images  
- Expensive



Scoreboard		17-Inch LCD Monitors			
BRAND	Acer	Asus	BenQ	BenQ	CMV
MODEL	AL1717	PM17TU	FP71E+	FP72V	CT-712A
Features	14.21	15.71	14.22	15.27	14.66
Pixel Size (mm)	0.264	0.264	0.264	0.264	0.264
Luminance (cd/m <sup>2</sup> )	300	500	300	280	400
Contrast Ratio	500:1	600:1	500:1	1000:1	500:1
Maximum Resolution (H. Pixels x V. Pixels)	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024
Screen Aspect Ratio (Normal/Wide)	Normal	Normal	Normal	Normal	Normal
Response Time (ms)	12	8	8	25	8
W x H x D (mm)	377 x 393 x 182	390 x 416 x 180	385.8x375.4x201.2	502 x 452.1 x 230	395 x 414 x 208
Weight (kg)	4.6	4.5	4.69	7.5	3.4
USB Hub (Y/N) / Number Of Ports	6	6	6	6	6
Built-in Speakers (Y/N) / Watts	4	4	4	4	4
VESA Wall Mount	4	4	4	4	4
Swivel Base Vertical / Horizontal Axis (Y/N)	4/6	4/6	4/6	4/6	4/6
Height Adjustment (Y/N)	6	6	6	4	6
Portrait Mode (Y/N)	6	6	6	6	6
Power Consumption (Watts)	40	48	50	60	51
Input Interfaces	D-Sub	D-Sub, DVI-D	D-Sub, DVI-D	D-Sub, DVI-D	D-Sub
Extra Features If Any (Web Cam Etc.)	None	None	None	Web Cam	None
Performance	46.22	45.72	46.61	47.37	44.61
Displaymate Video Edition (So5)					
Sharpness And Resolution					
Point Shape And Visibility	3.75	4	3.75	4	4.25
Video Bandwidth Test	4	3.75	4	3.75	3.5
Colour And Greyscale					
Streaking And Ghosting	4	3.75	4	3.75	3.5
Bar Streaking	3.75	3.75	3.75	3.75	3
Colour Streaking	3.5	4	3.5	4	3.25
Mid-Range Streaking	3.75	4	3.75	3.75	4
White-Level Shift	4	4	4	4	3.5
Black-Level Shift	3.75	3.75	3.75	4	3.75
RGB Purity	4.5	4.5	4.5	4.5	4.5
Text Colour Combination	3.75	3.5	3.25	3.75	2.75
16-Intensities Levels	4.25	4	5	5	4
64-Intensity For Primary Colours	3.5	3.5	3.5	3.75	3
64-Intensity For Secondary Colours	3.5	3.5	3.75	4	3
256-Intensities Level	3.25	3	3.25	3.25	3.5
Colour Scales	3.5	4	3.75	4.5	3.75
Miscellaneous Tests					
Reverse Video Contrast	3.75	3.75	3.75	3.75	4.25
Screen Uniformity	4	4	4.25	4	3.75
Passmark Monitor Test					
Pixel Persistence Test (So5)	2	2	2.25	2.25	2.25
Miscellaneous Tests					
Viewable Angle Test (Text) (Degrees)	155	155	155	160	150
Viewable Angle Test (Movie) (Degrees)	115	135	125	145	125
OSD Usability Test (So5)	4	3.5	3.5	4	4.25
Price Index	13.81	8.76	12.38	7.51	13.81
Price (Rs)	12,999	20,500	14,500	23,900	13,000
Overall Score	74.25	70.19	73.22	70.16	73.08
<div>  <ul style="list-style-type: none"> <li>+ Low price</li> <li>- None in particular</li> </ul> </div> <div>  <ul style="list-style-type: none"> <li>+ High luminance, contrast ratio</li> <li>- Expensive</li> </ul> </div> <div>  <ul style="list-style-type: none"> <li>+ Above average image quality and performance</li> <li>- None in particular</li> </ul> </div> <div>  <ul style="list-style-type: none"> <li>+ Good performance, features and looks</li> <li>- Expensive</li> </ul> </div> <div>  <ul style="list-style-type: none"> <li>+ Low price</li> <li>- Higher power consumption</li> </ul> </div>					



Gigabyte	INTEX	LG	NEC	NEC	NEC
GD-1703BP	IT-1703	FLATRON L1730S	AccuSync LCD72V	MultiSync LCD1770NX	MultiSync LCD1770NXM
13.93	14.43	12.81	14.78	15.70	14.66
0.264	0.264	0.264	0.264	0.264	0.264
280	300	250	250	250	250
500:1	500:1	400:1	450:1	500:1	500:1
1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024
Normal	Normal	Normal	Normal	Normal	Normal
10	12	25	8	8	8
445 x 455 x 135	400 x 410 x 200	356 x 360 x 152	375.4 x 389 x 180	365.7 x 363.2 x 198.2	365.7 x 363.2 x 198.2
4.8	4.2	4	4.6	6	6.5
6	6	6	6	4/2	6
4	4	6	4	6	6
4	4	4	4	4	4
4/6	4/6	4/6	4/6	4/4	4/4
6	6	6	6	4	4
6	6	6	6	6	6
48	35	40	34	48	55
D-Sub	D-Sub	D-Sub	D-Sub, USB	D-Sub, DVI-D	D-Sub, DVI-D
None	None	None	None	None	USB Hub
45.17	44.64	47.40	43.88	47.61	48.45
4.25	4.25	4	3.5	4.25	4
3.75	4	4	4	4.25	4.25
4	4	4	3.75	4	4
3.5	3.75	3.75	3.75	4	3.75
3.25	4	4	3.75	4	3.75
4	3.5	4	4	4	4
4	3.75	4	3.75	4	4
3.75	3.5	4	3.75	4	4
4.5	4.5	4.5	2	4.5	4.5
3.25	2.5	3.25	3.25	3.5	3.75
3.5	4	5	5	5	5
3.5	3.25	3.5	3.75	3.5	3.25
3.5	3.25	3.5	3.75	3.75	3.25
3.5	3.25	3.5	3.75	3.75	3.5
3.25	3.75	3.5	4	4	3.75
4	3.75	3.75	4	3.75	4
4	3.75	4.5	2	3.75	4
2	2	2.25	2	2.25	2.25
155	155	160	155	150	150
125	135	135	120	125	120
3.5	3.75	3.75	4	4.5	4.5
11.23	8.55	12.83	11.60	9.07	8.31
15,990	21,000	14,000	15,480	19,800	21,600
70.34	67.62	73.03	70.26	72.38	71.42
					
+ None in particular - Below average build quality, above average price	+ Low power consumption - Expensive quality, above average price	+ Good performance - Slow response time	+ Low power consumption - Above average price	+ Good performance - Expensive	+ Good performance - Expensive





Scoreboard				
17-Inch LCD Monitors				
BRAND	NU	Philips	Samsung	ViewSonic
MODEL	QL-711V	170S	SyncMaster 740N	VA712
Features	14.52	13.70	13.71	14.64
Pixel Size (mm)	0.264	0.264	0.264	0.264
Luminance (cd/m <sup>2</sup> )	320	250	300	350
Contrast Ratio	500:1	500:1	600:1	350:1
Maximum Resolution (H. Pixels x V. Pixels)	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024
Screen Aspect Ratio (Normal/Wide)	Normal	Normal	Normal	Normal
Response Time (ms)	16	12	8	8
W x H x D (mm)	398.8 x 403.8 x 190.5	375 x 390 x 200	366 x 391.2 x 200	386 x 411 x 177
Weight (kg)	4	4	4.7	4.3
USB Hub (Y/N) / Number Of Ports	6	6	6	6
Inbuilt Speakers (Y/N)/Watts	4	6	6	4
VESA Wall Mount	4	4	4	4
Swivel Base Vertical / Horizontal Axis (Y/N)	4/6	4/6	4/6	4/6
Height Adjustment (Y/N)	6	6	6	6
Portrait Mode (Y/N)	6	6	6	6
Power Consumption (Watts)	35	30	34	42
Input Interfaces	D-Sub	D-Sub	D-Sub	D-Sub, DVI-D
Extra Features If Any (Web Cam Etc.)	None	None	None	None
Performance	46.56	48.24	46.97	47.12
Displaymate Video Edition (So5)				
Sharpness And Resolution				
Point Shape And Visibility	4.25	4	4.5	3.75
Video Bandwidth Test	3.75	4	3.75	4.25
Colour And Greyscale				
Streaking And Ghosting	4	4	4	4
Bar Streaking	3.75	3.75	3.75	3.5
Colour Streaking	4	4	3.5	3.75
Mid-Range Streaking	3.75	4	3.75	4
White-Level Shift	3.5	4	4	4
Black-Level Shift	3.5	3.75	3.75	3.5
RGB Purity	4.5	4.5	4.5	4.5
Text Colour Combination	3.25	3.75	3.25	3.5
16-Intensities Levels	4.25	5	4.5	4
64-Intensity For Primary Colours	3.5	3.5	3.75	3.25
64-Intensity For Secondary Colours	3.75	3.75	3.75	3.25
256-Intensities Level	3.5	3.5	3.5	3.5
Colour Scales	4	4	3.75	3.75
Miscellaneous Tests				
Reverse Video Contrast	3.75	4	3.75	4.25
Screen Uniformity	4	4	4	4
Passmark Monitor Test				
Pixel Persistence Test (So5)	1.5	2.25	2	2
Miscellaneous Tests				
Viewable Angle Test (Text) (Degrees)	150	150	155	155
Viewable Angle Test (Movie) (Degrees)	115	120	120	120
OSD Usability Test (So5)	3.75	3.75	4.5	4.25
Price Index	15.00	12.83	12.64	11.22
Price (Rs)	11,970	14,000	14,200	15,999
Overall Score	76.08	74.76	73.32	72.98
<div>  <p>+ Very low price - Below-average build quality</p> </div> <div>  <p>+ Good performance, low power consumption - None in particular</p> </div> <div>  <p>+ Sharp image quality - None in particular</p> </div> <div>  <p>+ Good performance - Pricey</p> </div>				











Scoreboard		19-Inch LCD Monitors			
BRAND	Acer	Asus	BenQ	CMV	LG
MODEL	AL1916W	PW191	FP91V	CT-937A	FLATRON L1950SQ
Features	15.01	19.74	14.40	16.26	14.32
Pixel Size (mm)	0.294	0.285	0.264	0.285	0.294
Luminance (cd/m <sup>2</sup> )	300	300	270	330	250
Contrast Ratio	700:1	600:1	550:1	600:1	500:1
Maximum Resolution (H. Pixels x V. Pixels)	1440 x 900	1440 x 900	1280 x 1024	1440 x 900	1280 x 1024
Screen Aspect Ratio (Normal/Wide)	Wide	Wide	Normal	Wide	Normal
Response Time (ms)	8	8	12	8	8
W x H x D (mm)	422 x 433 x 176	520 x 490 x 280	410.8 x 419.3 x 215.4	469 x 368 x 189	420 x 412 x 230
Weight (kg)	5	8.5	6	4.7	5.7
USB Hub (Y/N) / Number Of Ports	6	6	6	6	6
Inbuilt Speakers (Y/N) / Watts	6	4	4	4	6
VESA Wall Mount	4	4	4	4	4
Swivel Base Vertical / Horizontal Axis (Y/N)	4/6	4/4	4/6	4/6	4/4
Height Adjustment (Y/N)	6	4	6	6	6
Portrait Mode (Y/N)	6	4	6	6	6
Power Consumption (Watts)	60	48	60	43	43
Input Interfaces	D-Sub	D-Sub, DVI-D	D-Sub, DVI-D	D-Sub	D-Sub, DVI-D
Extra Features If Any (Web Cam Etc.)	None	Feather-Touch Controls	None	None	None
Performance	46.98	46.80	46.05	45.26	47.28
Displaymate Video Edition (So5)					
Sharpness And Resolution					
Point Shape And Visibility	4	4	4	2	3.75
Video Bandwidth Test	4.25	3.75	4	2	4
Colour And Greyscale					
Streaking And Ghosting	3.75	3.75	3.75	3	3.75
Bar Streaking	3.5	3.75	3.75	2.75	3.75
Colour Streaking	3.75	3.75	3.5	3	4
Mid-Range Streaking	4	3.75	3.75	3	3.75
White-Level Shift	4	4	4	3.5	4
Black-Level Shift	4	3.75	3.75	3.5	3.75
RGB Purity	4	4.5	4.5	4.5	4.5
Text Colour Combination	3.5	3.25	3	3.5	3.75
16-Intensities Levels	5	5	5	4.25	5
64-Intensity For Primary Colours	4	3.75	3.5	3.75	3.75
64-Intensity For Secondary Colours	4.25	4	3.75	3.75	3.75
256-Intensities Level	3.5	4	3.75	3.25	3.5
Colour Scales	4.25	4	4	3.5	3.5
Miscellaneous Tests					
Reverse Video Contrast	3.75	3.5	3.5	4.25	3.75
Screen Uniformity	3.75	4	4	4.25	4.25
Passmark Monitor Test					
Pixel Persistence Test (So5)	2.25	2	2	2.5	2
Miscellaneous Tests					
Viewable Angle Test (Text) (Degrees)	150	150	160	160	160
Viewable Angle Test (Movie) (Degrees)	120	125	130	135	130
OSD Usability Test (So5)	3.75	3	3.75	4.5	3.75
Price Index	13.50	9.31	11.25	13.50	12.27
Price (Rs)	19,999	29,000	24,000	20,000	22,000
Overall Score	75.49	75.85	71.71	75.02	73.88
<div>  <p>+ Wide-screen, good performance - None in particular</p> </div> <div>  <p>+ Stylish looks, portrait mode - Expensive</p> </div> <div>  <p>+ Sharp image quality - Expensive</p> </div> <div>  <p>+ Wide-screen - Below-average build quality</p> </div> <div>  <p>+ Good performance - None in particular</p> </div>					





NEC	NEC	NEC	NU	Philips	ViewSonic
AccuSync LCD92V	MultiSync LCD1970NXp	MultiSync LCD1980FXi	L921G	190V	VX922
13.62	16.78	16.85	16.00	14.11	17.16
0.294	0.294	0.294	0.294	0.294	0.294
250	250	270	320	240	270
450:1	800:1	600:1	600:1	500:1	650:1
1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024	1280 x 1024
Normal	Normal	Normal	Normal	Normal	Normal
8	20	18	12	8	6
418 x 427.8 x 199.5	412.5 x 386.5 x 220	402.3 x 361.5 x 200	448 x 447 x 193	425 x 419 x 235	431 x 370 x 66
6.5	8	9.7	5.3	5.4	6.7
6	6	6	N	6	6
6	6	4	4	6	4
4	4	4	4	4	4
4/6	4/4	4/6	4/6	4/6	4/6
6	4	4	6	6	6
6	6	4	6	6	6
40	38	48	50	34	35
D-Sub, DVI-D	D-Sub, DVI-D	D-Sub, 2xDVI-D In	D-Sub, DVI-D	D-Sub	D-Sub, DVI-D
None	None	None	None	None	None
46.94	46.77	46.58	46.52	46.43	46.17
3.75	3.5	3.75	3.5	3.75	3.75
4	4	4	3.5	4.25	4.25
3.75	3.75	3.75	3.75	3.75	4
3.75	3.75	3.75	3.75	3.75	3.75
3.75	4	3.75	4	3.75	4
4	3.75	3.75	3.75	3.75	3.75
3.75	3.5	3.75	4	3.75	4
3.75	3.75	3.75	3.5	3.75	3.75
4.5	4.5	4.5	4.5	4.5	4.5
3.5	3.75	3.75	3	3	3
5	4.5	5	5	4.5	4
3.5	3.5	3.75	3.5	4	3.25
3.75	3.75	3.75	3.75	4.25	3.25
3.75	3.75	4	4	4	3.5
4	3.75	3.75	4.25	4.25	4
3.75	4	3.75	3.75	4.25	4
3.75	3.75	4	4	4	3.75
2	2	2	2	2.25	2.25
155	155	160	155	155	155
120	130	150	135	125	130
4	4.25	4.25	3.75	3.5	4.25
11.54	10.00	4.29	15.00	10.80	10.80
23,400	27,000	63,000	18,000	25,000	24,999
72.10	73.55	67.72	77.52	71.34	74.14
					
+ Low power consumption - Expensive	+ Good features, low power consumption - Expensive	+ Good viewing angles, portrait mode - Very expensive	+ Low price, good viewing angles - Below-average build quality	+ Low power consumption - Expensive, no DVI-D input	+ Good viewing angles - Expensive



## The Advantages Of An LCD Monitor

**Luminance (Brightness):** An LCD can be made brighter by increasing the brightness of the backlight. In the case of a CRT, an increase in brightness also increases the beam spot size; this lowers the effective resolution, yielding a fuzzy image.

**Flickerless:** An LCD display does not flicker. In a CRT, an electron beam scans the phosphor screen in horizontal lines from top to bottom and this illuminates the screen. This must be done fast enough for the eye to not notice a flicker, which is not always achievable. The LCD has a constant source of light over the whole screen which means that once a pixel is on, it stays on until turned off, and vice-versa.

**Crisp And Sharp Image:** For a CRT screen, the electron beam is circular when aimed directly forward, but it becomes elliptical when aimed at any other direction. This may cause image clarity or focus issues at the screen edge.

An LCD has millions of pixels hard-etched onto the panel, each effectively independent from its neighbour. With no scanning electron beam, distortion is not an issue. Therefore, the image always appears crisp over the entire screen.

**Perfect Geometry:** LCD monitors provide geometrically-perfect and distortion-free images, which is a huge advantage for graphics artists and designers.

**Longer Life:** The life of an LCD depends on the life of the backlight, which is composed of one or more tiny fluorescent tubes. The typical life of a backlight is stated to be around 50,000 hours to the half-brightness point, which is the point at which brightness is one-half the original brightness. This is the industry standard measure for product life.

In case of a CRT, the age depends on the formation of oxide layer on the cathode of the electron gun, which decreases beam current. Also, the phosphor ages and becomes less efficient over a period. The typical CRT half-brightness point has been found to be between 10,000 and 20,000 hours.

**Power Consumption:** The power required to run an LCD is about one-half to one-third of that required for a CRT with the same screen area. In addition to this, LCDs generate considerably less heat than CRT monitors because of the technological difference. This indirectly leads to a lower load on air conditioning, thus reducing running costs. Similarly, the lower power requirements of an LCD

monitor make it easier to be used with an uninterruptible power supply, because the lower power required provides precious extra minutes to save important data and shut down the PC in the event of a power outage.

**Low Emissions:** A CRT monitor can generate electric, magnetic and even X-ray emissions due to the high-voltage power supply necessary to drive the CRT and the electron beam striking the phosphor screen. An LCD has no such issues because of the different technology.

**Better Ergonomics:** LCD monitors are smaller, more compact and lighter when compared to CRTs. Thus, they take up less precious desktop space. They can fit in locations where bulky CRTs just cannot. Those with VESA mounting can even be mounted on the wall. Some LCDs also have pivots to rotate horizontally, vertically and even from landscape to portrait mode, which makes them more versatile.

**Total Cost Of Ownership:** The prices of LCD monitors have been decreasing in recent years. When calculated, one can imagine the power-saving features of LCDs reducing the total cost of ownership over a period of a few years.

because of its overall better image quality. It was priced at Rs 14,000, which is just below the average price of a 17-inch monitor. The Philips 170S was awarded the Digit Best Buy Silver.

### 19-INCH LCD MONITORS

We found the NEC monitors to be a world apart from the others, due to their better features and quality. But they were also priced exorbitantly high, and remain beyond the reach of most.

The NU L921G had high brightness and contrast ratios, and a low response time, while weighing just

5.3 kg, scored good points under Features. It also fared well as far as performance was concerned. The low price tag of Rs 18,000 was the deciding factor in adjudging the NU L921G the winner of the Digit Best Buy Gold in the 19-inch LCD monitor category.

The Asus PW191 was in a class of its own with its wide-screen aspect ratio and unique looks. It scored the highest points in Features. We also found it to be a good performer. But with its heavy price tag of Rs 29,000, it had to settle for the Digit Best Buy Silver.

### In Conclusion

We'd like to confess that we had initially planned to carry out two separate shootouts of both LCD monitors and CRTs, but we were surprised at the very low turnout of CRTs. Manufacturers told us they are pushing for sales of LCDs over CRTs, hence the low turnout.

The wisdom behind this decision is debatable. If you recall our last LCD shootout, you would realise that the prices have not plummeted as much as we had hoped they would, and India is a price-sensitive market. People will still want to buy CRTs.

If you have noticed, there were many more 17- and 19-inch monitors than 15-inch ones. To us, it seems like manufacturers are bent on dictating purchasing terms.

We can only hope for a significant drop in LCD prices the next time round. Better technology should also bring in better response times. The transition from CRTs to LCDs would then be more likely. ■

jayesh\_limaye@thinkdigit.com  
anup\_nair@thinkdigit.com

Contact Sheet		LCD Monitors		
Brand	Company	Phone	E-mail	Web Site
Acer	Acer India Pvt Ltd	080-25213520	rajesh.aiyar@acer.co.in	www.acer.co.in
Asus	ASUSTek Computer Inc	022-40058923	mamta_bhataia@asus.com.tw	in.asus.com
BenQ	BenQ India Pvt Ltd	022-25705230	kamlesh.salunke@benq.com	www.benq.co.in
CMV	Cee Vision Technologies P Ltd	022-26733353	mumbai@chemoplast.com	www.cmv.com.tw
Gigabyte	Gigabyte Technology (I) Ltd	022-2652669	sales@gigabyte.in	www.gigabyte.in
Intex	Intex Technology (I) Ltd	011-41610224	info@intextechnologies.com	www.intextechnologies.com
LG	LG Electronics India P Ltd	0120-2560900	response@lgezbuy.com	www.lgezbuy.com
NEC	Shiba Comp P Ltd	011-26413437	shiba@del2.vsnl.net.in	www.nec.com
NU	Shiba Comp P Ltd	011-26413437	shiba@del2.vsnl.net.in	www.nu-global.com
Philips	Philips Electronics India Ltd	022-56912000	pcp.india.info@philips.com	www.india.philips.com
Samsung	Samsung India Electronics P Ltd	011-41511234	vineet.kanaujia@samsung.com	www.samsungindia.com
ViewSonic	Roop Technology Pvt Ltd	022-26681921	roop@vsnl.com	www.viewsonic.com



# Adobe Acrobat

**"There's more to Acrobat than the Reader," the tagline went. Acrobat's features are indeed endless**

Ram Mohan Rao

Everyone has encountered PDF files, and in all probability, you have Adobe Reader installed. Reader often urges you, on the top right of the screen, to get the full version of Acrobat. So what can you do with Acrobat apart from just converting documents to PDF? Actually, there's so much you can, it would require a tome to tell you. Here, we're just giving you a flavour for the variety of functions Acrobat is capable of.

## Capturing Content

Combining elements from different sources to create organised, searchable documents is one thing Acrobat can do for you, but that doesn't even scratch the surface.

A first example of how you can use Acrobat is Web capture. When you convert a Web page to PDF—simply by going to Create PDF > From Web Page—you supply the Web page address, and specify various parameters, including how deep (in terms of levels) you want to go. Acrobat will faithfully create a PDF of the site, with all images and links intact and in place. What's really cool is that each page header gets a convenient bookmark. And you can nest the bookmarks according to your convenience.

Want to move towards an office that uses less paper? OCR all your documents by going to Create PDF > From Scanner, and build up a collection of searchable documents. The OCR is reasonably accurate, and suspect words can be incorporated as bitmaps without being OCR'd! And there are plenty of options under "Image Settings," which let you tailor the capture according to the type and quality of documents being OCR'd.

You can capture in two modes—"searchable image" and "formatted text in graphics." The former is an image file of the document that retains searchability by cleverly keeping the OCR'd characters in a layer "beneath" the document. This format is useful if you want your PDFs looking exact-

ly like the original, while still being searchable. Remember, using either of these formats, you'll be building a searchable document collection—in Acrobat, you can search for all occurrences of a word in an entire folder.

## Modifying Content

After you've converted documents to PDF—whether by OCRing them or by converting them from other formats—there's plenty more to do. You can add headers, footers, and watermarks, all under the Documents menu. If a particular part of a document needs special attention, you can copy that section as an image using the Snapshot Tool on the standard toolbar. You can add list boxes, combo boxes, and more, all from the Advanced Editing Toolbar, under "Advanced."

You can, of course, take pages off one document and add them to another and so on, building up your document collection exactly as you want it. And you can export all images in a document to a folder, by simply going to Advanced > Export All Images. As another example of Acrobat's versatility, you can even do things like using a radio button to access part of another document!

Restricting access is well implemented in Acrobat. You can password-protect documents so they can't be opened, or altered, or printed. These features are under Document > Security. And from the Document > Digital Signatures menu, you can digitally sign a document before sending them so the receiver knows it's you who's sent it.

Explore the Comments menu: once a document has been sent out for review, you can collate all the comments from all reviewers and merge them into a single PDF document. Comments can be managed using the sorting and filtering tools. They can even be exported to Word! Besides, using the Tracker tool, again under the Comments menu, you can track the progress of the document review process: the Tracker keeps track of the reviewers you've invited to take a look at your docu-

**New features in version 7 include the option to import e-mails from MS Outlook and sort them within a PDF document**

ment, and of when they responded with their comments.

A new feature in Acrobat 7 is that if you're conducting your review over the Web, the Tracker acts as an RSS reader!

## Web And E-mail

Acrobat is truly Web-ready. Using the Advanced Editing options, you can add links and annotations, forms and security options, and even video and sound to your PDFs.

Acrobat can be used as a cross-platform image viewer. Using a plug-in, you can convert images in different formats to PDF files.

A PDF file can act as a container for files of almost any type—you could attach the original Word document from which the PDF was created, so the reader can compare and figure out what changes were made. Besides, since you can attach a range of document types, the PDF format can be used as a medium for secure delivery of any sensitive content!

You can edit any part of a document before you publish it—the Touch Up tools (under Advanced Editing) can be used to edit text including fonts and sizes, move graphics around, and so on.

## New Features And More

New features in version 7 include the option to import e-mails from MS Outlook and sort them within a PDF document. The new Organizer makes it much easier to, well, organise documents: for example, with the History feature, you can see which PDFs you opened when, with thumbnails!

Probably the best thing about all this is that in the end, regardless of what system and platform and applications you used to create your PDFs, your documents look exactly the way you created them—to anyone, on any platform, using the free Adobe Reader!

Help in Acrobat is extensive, and we'd advise you to go through the full help file to get a real feel for what you can do with this do-it-all software. ■

ram\_mohan@thinkdigit.com

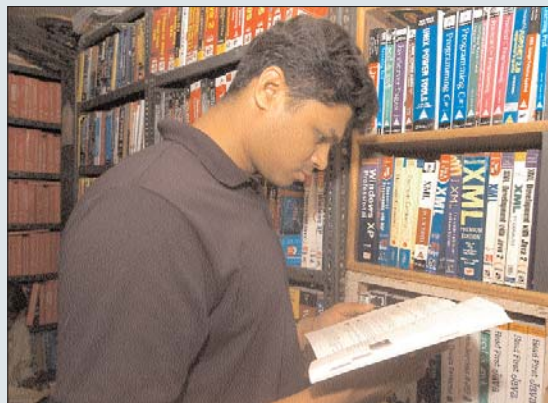




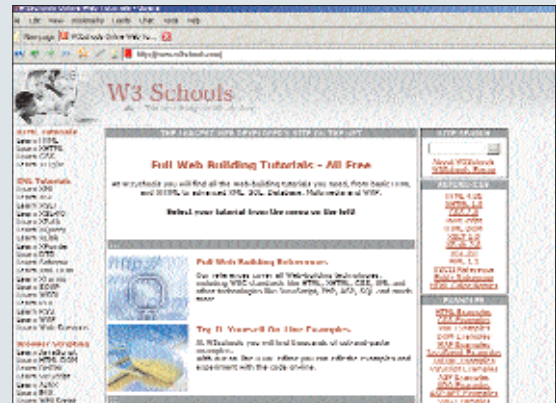
# Learning A Programming Language

It was high time I took on a new programming language to see what use I could put it to. After several auditions, the lucky candidate was XSLT: the eXtensible StyleSheet Language Transformation. Since the purpose was personal, classes didn't make sense (there aren't any institutions that will teach *only* XSLT anyway), so it was between using a book and going online.

**Nimish Chandiramani** ([nimish\\_chandiramani@thinkdigit.com](mailto:nimish_chandiramani@thinkdigit.com))



**Out Hunting for a good book**



**And surfing from my chair**

1

The most daunting task—hunting down a good book. After reading loads of reviews online, I short-listed a few books that would probably suit my needs. Next step: running around the city in the sweltering heat to find them in bookstores. The books start at about Rs 300, but some of them actually come for around Rs 1,500. Ouch! I settled for *XSLT: Working with XML and HTML* by Khun Yee Fung, which was quite pocket-friendly at Rs 500.

One simple Google search is all it takes, and I have everything I need right in front of me. It did take me some time to wade through sites to decide which one seemed the best, but I could do it in the comfort of my chair *and* without having to pay anything, too. I settled on W3Schools.org.

2

Twenty per cent of any book effectively covers over eighty percent of the XSLT I'm ever going to use, so a goodish number of those pages are probably wasted on me. Still, it's heartening to know they're there—I can browse through them on the train journey to work.

It's all free, so there's no guilt about wasted investments on books that are bigger than I'll ever need.

Of course, the time I spend in the train will be wasted twiddling my thumbs.

3

On to learning. Reading is quite convenient—after all, it is a book—easy on the eyes and what-have-you. It's also expectedly well-organised and cross-referenced, so finding the information I need isn't much of a hassle.

I find the bundled sample code a tad limiting though—there just isn't enough to satisfy random curiosity, so I need to go online to check if my weird ideas are actually feasible.

The site is organised quite like a book itself, and I need to just click on the link for the chapters I'm interested in, without having to think about the others. What's more, I can keep cross-referenced items open in different windows, so when I read something like “refer this,” the “this” is just an [Alt] + [Tab] away.

4

My first XSLT! Pity it doesn't work properly. This is the book at its most useless. I can't see anything wrong with my code, and leafing through the book over and over again trying to find out what's wrong achieves nothing.

There are millions of online forums and help sites for any language—each of which have about a thousand users just waiting to solve my problems. They even pitch in with tips of their own based on their own programming experiences.

Ease: 3/5  
Total Cost: Rs 500



Ease: 5/5  
Total Cost: Rs. 0



AND  
THE  
WINNER  
IS...

One needs to realise that this is a programming language we're talking about and all the information available couldn't fill just one book—getting connected is the fastest way to expand your knowledge. Finding information you can digest is a task in itself, though—you'll

need to do plenty of dirty work before you can begin learning. If you are just a hobbyist, online is the way to go. Whether you do so before or after you invest in a book depends on whether you feel you'd learn better from a book.



# New & Notable

## Video iPod

### Slim, Stunning, Sexy

Apple's latest, its a bit wider than the original iPod, because of the larger screen and smaller scroll wheel. The new model has been beaten down to look slimmer and smarter.

The most desirable feature of this iPod is that it plays video. What formats? Apple specifies H.264 video in 320 x 240 at 30 fps and MPEG-4 video in 480 x 480 at 30 fps. Audio can be encoded in AAC-LC up to 160 Kbps at 48 kHz. One good thing is that the new QuickTime has an "Export to iPod" option, which automatically takes care of these specifications.

During our test, the video playback was crisp, clear and enjoyable. Since the standard bundle doesn't include the AV cable, we were unable to connect it to a TV set. The device provides about 11 hours of battery life! Some nifty new apps have trickled into the iPod Video—a world clock, a great stopwatch and a superb-looking screen lock. But Apple has cut some corners—there's no A/C wall charger, AV cable or dock. Our verdict? The Video iPod makes for a great personal video player—if you can cough up the money.



Company **Apple Computer International**

Price **Rs 15,000 (30 GB)**

Phone **1600-4254683**

E-mail [indiainfo@asia.apple.com](mailto:indiainfo@asia.apple.com)

Web site [www.apple.com](http://www.apple.com)

Rating

## MSI MEGA 533 MP3 Player



### Feature-Full

MSI has just launched a Flash-based MP3 (and WMA) player—the MEGA PLAYER 533 SD. The clincher is the SD (Secure Digital) card reader—you only need to insert the card to start playing songs from it! It has its own 256 MB of internal memory, accessible from a PC via USB. The player can also be used as a portable USB device; it can also function as an SD card reader for your PC!

You can record FM—or a speech—directly to memory! There is also a graphic equaliser. The build quality of the casing is a let-down, and the earphones seemed a little uncomfortable and oversized. The AAA alkaline cell lasted for about eight hours, as claimed. For the price, this is not a bad buy at all!

Company **Micro Star International**

Price **Rs 2,700 (estimated)**

Phone **011-41758808**

E-mail [info@msi-india.com](mailto:info@msi-india.com)

Web site <http://www.msi.com.tw>

Rating

## Lexmark P4350 All-in-One

### Pretty But Pricey

The P4350 All-in-One is an inkjet photo MFD. It uses a dual-cartridge system for photo-quality printing, and the colour scanner is an A4 flatbed. This is a good thing, because a sheet-fed scanner could very well crumple your photos while you're scanning them!

MFDs do not have to look boring, and the P4350 proves it. It sports sleek, elegant looks and blue LEDs all over the place that would make any printer, let alone an MFD, turn green with envy.

The P4350 supports almost all memory card standards, and also PictBridge. So you can just click away with your digital camera, insert the memory card into the MFD, preview your photos on the 1.7-inch colour LCD screen, and just press a button to print your photos!

The Lexmark Imaging Studio—a photo editor, and the ABBYY FineReader 6 Sprint OCR software, make this a complete package. Overall performance, however, was a bit slow, and print quality was just about average. At Rs 15,999, the Lexmark P4350 All-in-One is still out of reach for most home users.

Company **Lexmark International (India) Pvt Ltd**

Price **Rs 15,999**

Phone **022-26057744**

E-mail [sandeepk@lexmark.com](mailto:sandeepk@lexmark.com)

Web site [www.lexmark.co.in](http://www.lexmark.co.in)

Rating







## O2 Xda Atom

### Small But Loaded

The hot new Xda Atom from O2 is a PDA phone that packs in loads of features in an extremely small form factor. The Atom lives true to its name, and packs a punch in a diminutive casing. Measuring 58 x 102 x 18.5 mm and weighing just 140 gm, the Atom is a tad smaller than its predecessor, the highly successful Xda II Mini.

Encased in an elegant piano-black casing, the Atom sports a 2.7-inch screen. The front fascia also includes large Send and End keys, a circular five-way navigation key, two keys assigned to the Start Menu and the MediaPlus application respectively, and two tiny speakers. You can find two volume keys on the left, a voice recorder and camera keys on the right, and a power button on top next to the stylus silo. The camera lens, self-portrait mirror and flash are located on the rear, while the bottom is where you will find the USB connector, headphone socket and reset button.

Powered by an Intel PXA272 processor running at 416 MHz, the Atom comes with 128 MB of ROM and 64 MB of RAM. You can add more memory by using the mini-SD slot located on top. The 2.7-inch touch-screen supports 262K colours at a resolution of 240 x 320. Connectivity options include tri-band GPRS/EDGE functionality, infrared, Bluetooth and Wi-Fi 802.11b—basically everything a globe-

trotting user would need. The camera is a 2-megapixel CMOS that can capture both stills and video. Other goodies include an integrated FM tuner, integrated strobe Flash, and a stereo wired headset. You

can even record from FM in the WAV or AMR formats. The device synchronises with a PC using the bundled USB cable.

The Atom runs the new Windows Mobile 5.0 operating system, the most notable feature of which, in our opinion, is persistent storage. This means that unlike with devices based on the earlier Windows Mobile 2003, this baby will not lose any data or installed programs when you run out of battery.

The Pocket Word, Excel and PowerPoint

have been rechristened Word Mobile, Excel Mobile and PowerPoint Mobile, with added support for embedded images, charts and tables. Standard PIM applications such as Calendar, Tasks and Notes are all there. O2 has thrown in quite a few of their own applications—noteworthy of which include O2 MediaPlus, SMS Plus and Equalizer.

MediaPlus provides an interface akin to that of Windows Media Center, and gives you the ability to play and view various media—radio, music, pictures and video, from a single window. O2 SMS Plus lets you view your text messages in an instant messaging format. Apart from these, you also get useful utilities such as an Auto Configurator, a photo editing application and a self-diagnostic tool.

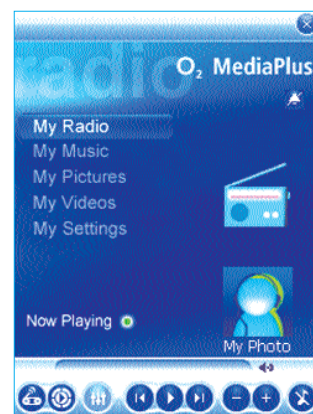
Coming to performance and usability: the glossy casing attracts fingerprints and dust, so be prepared to spend a fair bit of time cleaning your phone! The 416 MHz processor is capable of running most applications and games with ease, and will even let you multitask. The new OS still retains the nagging “Smart Minimise” feature, which does not close applications even when you tap the Close button. However, this can be easily circumvented by using a task manager such as SPB Pocket Plus or SmallMenu (or using the Memory module in Settings to shut down applications manually). Phone clarity is very decent, even in areas with low network coverage.

You can use the speakerphone in a noisy environment. The stylus is a bit skinny, but the touch-screen is quite sensitive. You can use the virtual keyboard or handwriting recognition to input text. The screen display itself is quite vibrant, but visibility is reduced significantly under sunlight.

The camera application is quite slow, and does not redeem itself in the quality department—images taken in low light turn out to be quite noisy.

Audio output from the inbuilt speakers is decent, but the wired stereo headset provides much better quality when listening to music. The 1530mAh user-replaceable lithium-polymer battery lasts for a decent two to three days with standard usage.

Features-wise, the Atom has just about every feature one would want. Sure, you can buy a laptop at this price, but can you carry it in your pocket?



Company **Creative-e-biz.com**

Price **Rs 38,888**

Phone **022- 56314845/46**

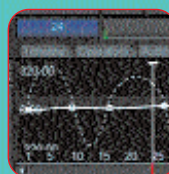
E-mail **cr\_mum@yahoo.com**

Web site **www.seeo2.com**

Rating







## Discreet Combustion 4



### A Must-Have For 3ds Max Users

Discreet's Combustion has come a long way since its first days as a tool that would normally be used only with 3D Studio Max (3ds Max). Today, Combustion can do for video what Photoshop can do for images, and it's a strong competitor to Adobe's After Effects in this area.

#### Firing Up

Combustion's interface is a tad unconventional, and beginners will find themselves lost for a bit, but some tinkering and many silly mistakes later, one finds that it's really quite intuitive. If you have used After Effects, though, getting used to Combustion might be a little more difficult.

With Combustion, you can fix most problems with videos—eliminate camera jitter, colour correction, and “key” out backgrounds from scenes and add new backgrounds in their place. It's also a very powerful tool to create 2D and 3D video composites, and integrates tightly with 3ds Max to add some amazing post-production special effects to your 3ds Max scenes.

With some incredible particle and fire effects, Combustion makes up for 3ds Max's shortcomings in the special-effects department, and there are more than enough presets to keep you happy for a long time. Creating these effects in 3ds Max would have been too resource hungry (not that they aren't in Combustion), and this saves a lot of time.

#### Diamond Keys

New to Combustion 4 is the Diamond Keyer, which is a much more powerful tool to remove backgrounds from videos than the existing Discreet Keyer. It's also extremely simple to use and much lighter on resources than the multitude of operators one would use to get the same effect. With the inclusion of this, Combustion's abilities

now begin to approach those of the higher-end compositors such as Flint, Flame, and Inferno.

#### The G-Buffer Builder

Before Combustion 4, creating depth-of-field effects would be extremely torturous if you didn't use Discreet's Rich Pixel Format (RPF)—3ds Max's rendering format that saves even depth information—but now, Combustion comes with the new

G-Buffer builder, which lets you use its paint tool to define the different

levels of depth in the video; now, creating stunning depth-based effects are easy to create even in non-3ds Max scenes.

#### Time-warping

Another major improvement is the Timewarper, which creates much more convincing slow-motion, speed-up and other time-distortion effects. Instead of simply changing the frame-rate, Combustion now renders intermediate frames to give much smoother transitions between keyframes and finer control over the effects.

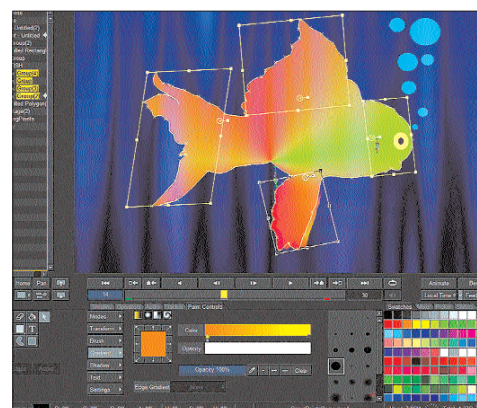
#### Capsules

Capsules let you save the whole gamut of effects you just created as a single effect and save it for application in another project, or even share it with friends!

#### The Rig

While Combustion will run on a machine with 512 MB of RAM, you'll need at least 1 GB to get some productivity out of it, and even more if you plan on using it for more high-end effects. A dual-core processor would also make it quite happy.

If you are a 3ds Max user, Combustion is an application you don't want to be without. If you're looking to make your big break into compositing and special effects, this should be on your list. Unfortunately for Maya users, Autodesk still hasn't introduced support for it despite taking over Alias, but that should come soon.



Company **Autodesk Media & Entertainment**

Price **Rs. 49750/-**

Phone **022-56952000**

E-mail **selina.pinheiro@autodesk.com**

Web site **www.autodesk.com**

Rating





# www.digg.com

The next time you see a piece of tech news you want to share, don't bother passing the word around. Just Digg it!

Jyotsna Rege

At technology news site this is, but, well, a tech news site with a difference. The content here is not managed by an editorial body but by you—as a registered user, of course. Although users can post articles on the site after registration, the content retained is largely determined by what readers like to read. Each time someone likes an article, he “digg” it—a word borrowed from the American slang for “preference.” An article has to be relatively new and has to have a sufficient number of diggs before it is posted on the home page.

The articles you see here are not authored by users, but are interesting reads they've come across in their Net wanderings. This, therefore, isn't an original news site—it's a community bulletin board of sorts.

## At A Glance

This is a very pretty, well-designed, XP-esque site. The home page is dominated by links to stories that have made it here. A box on the left of the title mentions the number of time the story has been “dugg.” In addition, a tiny link below the number box allows the reader to digg the story. Once you do so, the number on the yellow number tab increases immediately to accommodate your “digg,” or approval. Links that allow the user to read and add comments, blog and e-mail the article are arranged below the story title and introduction.

Just so you don't feel lost, there's a search bar, and also a list of categories you can click on—such as “robots,” “hardware,” “apple,” and so on. You don't need to register to read articles, but if you want to do anything more, you have to.

## Let's Start Digging!

One gets started using three links on the top right—“Digg for Stories,” “Submit a New Story,” and “Digg Spy.” With the first link, you get a look at the stories that are up for reading and being rated, either in “story view”—where you see a set number of stories on the page—or “cloud view,” wherein all “queued” stories are clustered together.

As a registered user, you can invite others to read your pick of the

crop, by clicking on “Submit a New Story.” You submit the URL of the news site from where you chose the story, then the site conducts a search for it. Once your story has been confirmed, you give it a title, submit a brief introduction, and specify the category under which you would like your story listed. The final bit is where the site searches if the same (or a similar) story has already been submitted, and if it has, the site requests you to not submit your story! The story is then posted to the “Digg Area Queue.” Stories are held here until (and if!) they are promoted to the home page. Promotion, as we've mentioned, is based on the number of diggs it receives.

The third link—“Digg Spy”—is interesting. Clicking on this gives you a “real-time view” of the site—all stories on the site get streamed, and you can pause a story if you want to.

Besides simultaneously checking out who wrote what, how many diggs a story received and whether it made it to the home page (or got “buried”), you can also sort them according to your preference with the help of the little buttons.

In this view, clicking on a story title does not take you to the article link, but to the comments the story has received and the diggers who commented. You can then take a peek at the profile of the digger and also look at all the articles he has digg.

## ...And Do More

It's not all about spending geeky hours looking up and reading stories and articles about technology. As a registered member, you have a profile via which you can create a circle of



Clicking on a title on “Digg Spy” shows the comments the article received

friends. Links on the home page take you to the top stories and show the top diggers. Besides, the site also has a podcast feed, and a link called “odeo”—which takes you to the Web pages of Diggation, a weekly tech/Web culture show based on the top digg.com news stories.

## Why Digg?

The news posted on the site, though largely controlled by its readers, is also monitored for content. The site also requests and instructs readers to prevent inappropriate or irrelevant content from residing on the pages by reporting this on the “problem” link that accompanies each article. And, of course, you can digg a site only once.

It's true that there are an awful lot of “front pages”—1,097 at the time of writing! While this may seem too much to surf through, you can always refine your choices.

We can think of four reasons for being a regular Digger: first, you get the most popular tech news on the home page, without needing to wade through tens of other sites.

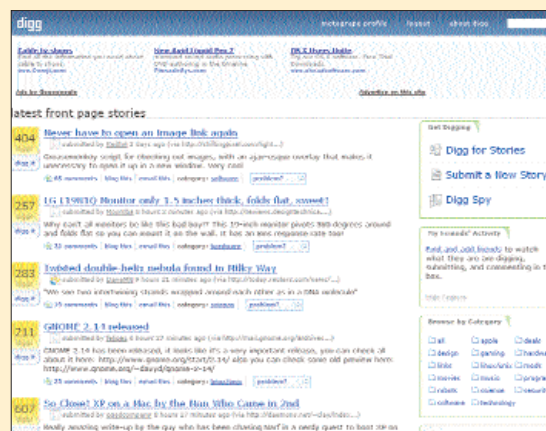
Second, you can actively participate in several ways in what's going on.

Third, everything on the site is so neatly organized and arranged!

And fourth, the site embodies a sound democracy.

Trust us, if you're a tech buff, you'll get hooked on your first visit! ■

jyotsna\_rege@thinkdigit.com



“Digg” your favorite site on the home page



## Symbian S60 Smartphones

Applies to the Nokia 3230, 6600, 6630, 6680, N-Gage QD and other Nokia Smartphones.

### Recover Your MMC Password

If you ever forget your MMC Password, connect your phone to your PC and navigate to the (hidden) System folder. Here, open the file "mmcstore" in Notepad, and surprise! Your password!

### Managing Applications

S60 includes a task manager to view running applications and switch to or close any of them. Hold down the application key (the button with the two-dots-spinning icon) to bring up the task manager. Press the [C] (Clear) key to close the application and free up memory, or choose the application to switch to it.

### Full-text Editing

Many don't realise it, but there are a lot more text-editing options in S60 than is apparent. To select text, hold down the Text key (the one with the Pencil) and move the cursor. A "Copy" option should now be available. To paste the text, go to the place you want the text to be pasted, and hold down the Text key again. A "Paste" option should now appear.

### Listen To Music All The Time

Go to the gallery and start playing an MP3. Press the "End" button to jump back to the standby screen while the music is still playing to see the song title on the standby screen. You can select the song with the up and down arrow keys, and you can use the left and right arrow keys to control the volume. Press the joystick/pad to open the music player again.

### Reformat Your Smartphone

If your Symbian S60 phone is infected with a virus or a malware program and nothing you try seems to work, you should reformat the

# Tips & Tricks

SECRETS THAT KEEP YOU AHEAD IN THE RACE

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phone. Start by backing up all your data and contacts—synchronise your PIM with Outlook to make sure your contacts are safe, and write down all your Instant Messaging settings (if any). Also copy all the data from the memory card to your PC. Switch off your phone.

On recent S60 devices, simply hold down [Green], [\*] and [3] at the same time to let your smartphone format itself. You should refer the phone's manual to verify this.

Once this is done, you will have a clean, malware-

free phone to which you can now re-synchronise your data and contacts.

### Some Handy Shortcuts

Use these shortcuts to save some time while performing simple, everyday tasks:

KeyPad [1] : Copy  
KeyPad [4] : Cut  
KeyPad [7] : Paste  
KeyPad [\*] : Go to root  
KeyPad [3] : Page up  
KeyPad [6] : Top of list  
KeyPad [9] : Page down  
KeyPad [#] : File properties

[Shift] + [0] ([Pencil]) + [0] for the Nokia 3650 or 6600): Take a screenshot

### Get Rid Of The "App. Closed Main" Error

To get rid of the "App. Closed Main" error, do the following: open your file manager/explorer and navigate to c:/system/bootdata. Delete FirstBoot.dat. Now turn off your phone and remove the MMC card. Turn on the phone to put in the date and time. Once it boots up, switch it off again, put the MMC card back in and turn on the phone.

### Image Viewer Shortcuts

Use these handy keypad shortcuts while viewing images:

[1]: Rotate image 90 degrees anti-clockwise  
[3]: Rotate image 90 degrees clockwise  
[5]: Zoom in  
[0]: Zoom out  
[2]: Move up  
[8]: Move down  
[4]: Move left  
[6]: Move right  
[7]: Full-screen

## Palm OS Devices

### Y Not?

Palm's Graffiti text input is accurate enough once you get the hang of it, but letters such as Y can still pose a problem. The best method so far seems to be an open figure-of-eight. Start at the top-left corner of the graffiti area, stroke downward and to the right, loop around when you hit the bottom and stroke toward the top-right corner, and you'll never have to re-write a Y again.

### A Swift Stroke

You can tie a function that you use often to the vertical graffiti upstroke—go to the Prefs application, and choose Buttons in the menu. In the Buttons area, click the Pen button at the bottom, and you can now assign functions such as the backlight, the on-screen keyboard, the beam data



Illustrations: Harsho Mohan Chatteraj



function, and Turn off & Lock, among several others.

### **Make HotSync Wait Forever**

If your Palm device gets impatient and times out waiting for your PC to make a connection during a HotSync, there's a Developer's Backdoor in the Palm OS which you can use to force your device to wait until a connection is made.

Open the HotSync Application. Press and hold the up and down scroll buttons simultaneously with your left thumb, and use the stylus in your right hand to double-tap in the uppermost right corner of the screen. A small dialog box titled "Developer's Backdoor" should open up, containing the text "DLServer Wait Forever is ON". Click on OK, and your device will now wait until your PC makes a connection.

### **Resetting Without Data Loss**

If your Palm device is misbehaving and you don't want to lose your data in a hard reset, you can try resetting the Palm OS instead.

You'll need a bent paper clip for this. Press and hold down the up scroll button and at the same time, use the paper clip to reset the device (the reset port is a small pinhole at the back of the device). Release the up scroll button when you see the Palm Startup screen.

### **Cursor Tricks In Graffiti**

To do a backspace when using graffiti, make a horizontal right-to-left stroke on the graffiti area. If, however, you just want to move the cursor to the left, make a continuous left-right stroke: start at the right side of the graffiti area, stroke to the left and then stroke back to the right without lifting the stylus.

Similarly, you can move the cursor one step to the right by making a continuous right to left stroke.

### **Create Your Own ShortCuts**

A ShortCut is a code that

inserts a commonly used phrase when combined with the ShortCut stroke in the graffiti area. The graffiti ShortCut stroke is easy—much like the cursive letter L. Start at the bottom left, move upward and towards the right, loop around and move towards the bottom right.

Suppose you use the phrase "Meeting With" a lot. You could assign a shortcut called "MW", which will just insert the phrase for you.

In the Application launcher, open the Prefs application, and tap the drop-down box in the upper right corner. Select ShortCuts, and tap New. In the line under ShortCut Name, write "MW". In the line under ShortCut Text, enter the full text—"Meeting With". To use this shortcut in a memo, first make the ShortCut stroke (which will now appear on the line), and then write out the ShortCut name ("MW" in this case). Your ShortCut text should appear on the line in an instant!

### **Windows Mobile Pocket PCs and Phones**

*Applies to Smartphones from O2 and iMate, and PDAs like the HP iPAQ*

### **Get MSN Messenger In The Start Menu**

Windows Mobile 5 comes with PocketMSN, which combines MSN Messenger, Hotmail and a couple of other programs in the same interface. This makes starting up Messenger a more tedious task than it should be. To make MSN Messenger accessible in a single tap, follow these steps: start File Explorer and navigate to the \Windows folder. Look for "instmsg"; tap on it and hold to bring up the menu, and select Copy. Now navigate to \Windows\Start Menu\Programs. Select Menu > Edit > Paste Shortcut. You can now rename this shortcut to "MSN Messenger" or anything else.

### **Change Opera's Behaviour On Windows Mobile**

In the Opera 8.5 beta for Windows Mobile, you will

notice that when you try to scroll through Web pages, you're actually taken from link to link. This can get extremely annoying if you're viewing a site with lots of links. To get around this, use any file editor to edit

\Application  
Data\Opera\input.ini.

Change:

Up = Navigate up  
Down = Navigate down  
to:

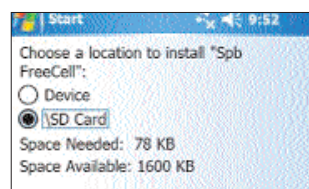
Up = Page up  
Down = Page down  
Sites will now scroll page

by page.

### **Reinstalling Software To A Flash Memory Card (Windows Mobile 5)**

To save internal memory, you can reinstall existing applications to your extendable memory card instead.

Go to Tools > Add/Remove Programs in Microsoft ActiveSync, and locate the program you want to reinstall.



### **Relocate programs to a Flash card**

Deselect the checkbox next to it to uninstall it from your Pocket PC (the installation files will remain on your Desktop PC, though). Close Add/Remove Programs and start it again.

Now check the box next to the software to install it. You will be asked where you want to install the program—simply choose "\SD Card" and click Install.

### **Really Close Applications**

Contrary to what it suggests, the X button doesn't close an application—it only minimises it. To really save your system resources and close the program, you have to click on Start > Settings > System and select the Memory icon. From there, click on the Running Programs tab to end your tasks. You could also use a freeware task manager such as vBar or PocketNav.

### **You Can Overclock Your PocketPC Too!**

If you want to push your PocketPC to the limit, try overclocking it using third-party tools such as Immiersoft's XCPUScalar or Pocket Hack Master from Anton Tomov. You should back up all your data first, because overclocking can cause your device to freeze or hard reset—which will wipe out all your data and settings.

### **Switch screen orientation quickly**

If you find yourself wanting to switch between portrait and landscape mode often, assign a button for it. Tap Start > Settings > Buttons and select the button you want to assign. Under "Assign a Program", select "Rotate Screen" and click OK. From now on, you can use this button to switch orientations quickly.

### **Get the most out of the battery**

Go to Start > Settings > System > Power. In the Advanced tab, set your device to turn off in 3 minutes or less to conserve battery power.

If you're ever using a CompactFlash card or interfacing with any peripherals, use the AC adapter to save your battery.

Unless you really need a bright backlight, turn it down—go to Start > Settings > System > Backlight > Brightness. Turn down the brightness to the lowest setting you're comfortable with.

### **Make the battery last longer**

How long your battery power lasts depends on battery type and how you use your device. Try the following to help preserve battery life:

- o Tap Start > Settings > System > Power. On the Advanced tab, you can specify when your device turns off to conserve battery power. For optimum conservation, specify 3 minutes or less.
- o Use the AC adapter to plug your device into external power whenever possible, especially when using a CompactFlash card or when using a modem or other peripherals.
- o Adjust the backlight settings.





## Flash Your Photos!

If you want a clean interface through which to share your pics—as a slideshow, for example—Flash Album Creator is what you've been looking for

Jayesh Limaye

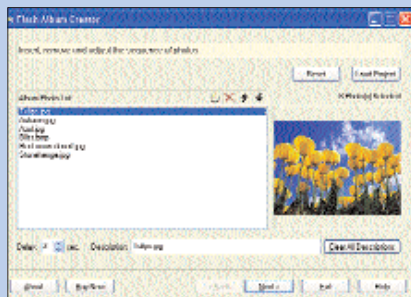
Traditionally, we've always kept photographs in an album—and if we've been diligent about it, they're in proper sequence. We've moved on, of course, and paper albums are all but extinct. When you go on a trip, are you more likely to snail-mail your photos to your friend in Texas or to invite him to view them online? But then, you might want to send your friend a single file that presents a classy slideshow, rather than having him log on to a site and click each photo individually...

In our quest for the perfect photo sharing app, we came across Flash Album Creator from Dreamingsoft, Inc., an easy and efficient way to organise your photos and to create and share digital photo albums.

What's different here is that in with Flash Album Creator, you can create slideshows. Here's a step-by-step walkthrough of the process to create a digital photo album using this software.

### STEP 1 Getting It

Download and install Flash Album Creator from [www.dreamingsoft.com](http://www.dreamingsoft.com). It's a very small download—just 1.14 MB. Flash Album Creator works on Windows 98/Me/NT/2000/XP, and there are no special hardware requirements.



Add Photos To Your Project

### STEP 2 Getting Started

Launch the application. When the window opens, click on the first button to the right of the Album Photo List to pop up a Select Photos dialog, which has a preview pane. Browse to the location where your photos are located, select as many photographs as you wish to

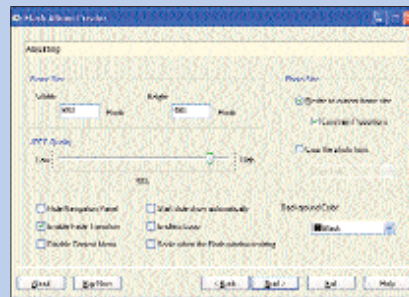
include in the photo album, and click Open to add them.

Once added, click the last two buttons in the same line to set the order in which the photos will be displayed in the slide show. (The preview pane on the right makes this task easier.) Set the delay time to a suitable value. You may also enter descriptions or captions to each of the photographs for easy reference. Click Next.



### Getting Set(tings)

You can now adjust the various image settings. There is an option to set the resolution of the frame size of the digital album. You can also opt to resize the photographs to the current frame



Customise The Various Settings For Your Photo Album

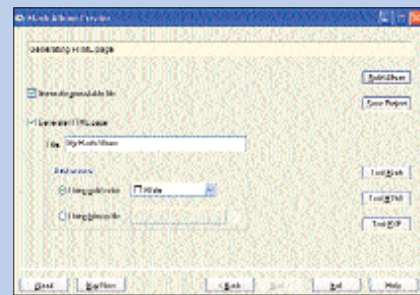
size, or you can choose to crop the photo to the size of the frame. The JPEG quality option allows you to choose the quality of the final output. If you choose Best Quality, the size of your album will, of course, increase, so you need to experiment with this setting to choose what works best for you.

The 'Hide Navigation Panel', 'Start Slide Show Automatically' and 'Endless Loop' checkboxes are self-explanatory. Check the 'Enable Fade Transition' box to enable transitions between photos. The 'Scale when the Flash window resizing' box should be enabled so the photo album stretches to fill the screen if you maximise it or switch to full-screen mode. If you don't choose this option, you can select a background colour that will appear behind the photographs.



### Building It

Clicking on Build Album results in a Shockwave (SWF)



Your Photo Album Is Ready

file—this requires the Flash plug-in to be installed on your browser. Select the 'Generate executable file' box to create a standalone executable file, in addition to the Shockwave file. This executable will run on any computer—with or without Flash installed! Similarly, checking the box next to 'Generate HTML page' will create an HTML file. Enter a name for your album in the title field, which will appear as the title of this HTML file. You may also specify a background for the HTML, or assign a bitmap image as the background.

After you click on Build Album, you can click on the Test Flash, Test HTML and Test EXE buttons to see if the album was created the way you want it to be. Depending on the output format you selected, to view the album, you can drag the SWF file to an Internet Explorer window to view it, or double-click on the HTML or EXE files to view the album. You can navigate through the album by clicking on the controls at the bottom. If you had opted to not use the Navigation Panel, you can click on the left third of the photo to go to the previous photo, and the right two-thirds to go to the next one.

To share your photographs, all you need to do is e-mail either the EXE file, or the HTML and SWF files together!

Flash Album Creator 1.59 is shareware—it works for 30 days in demo mode, with the limitation that the output file has a demo stamp. The full version costs \$29.95 (Rs 1,350).

Creating photo albums has never been this easy, and there's never been a better way to present them! Give it a try! ■

[jayesh\\_limaye@thinkdigit.com](mailto:jayesh_limaye@thinkdigit.com)

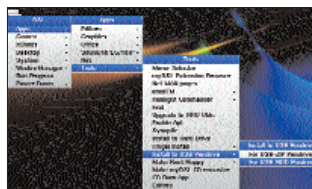


**Damn Small Linux**

Boot from this month's Digit CD to start using Damn Small Linux (DSL) and marvel at all that fits in this 50 MB distro!

**Carry DSL With You**

You can use the Live Installation on this month's Digit CD to install DSL to your USB Drive. Right-click on the desktop and go to **Apps > Tools > Install to USB Pendrive > For USB-HDD Pendrive**. When asked for the device name, type in "sda". Confirm all the other options, and DSL will be installed on your pen drive. To get the most out of this, the drive should be bootable, and the motherboard of the PC you want to boot it on should also support booting from a USB device.



Install DSL to a USB drive

**MS Word Files In DSL**

You can use the MS Word Viewer to view MS Word Files, or convert them to the PostScript format. Right-click on the desktop

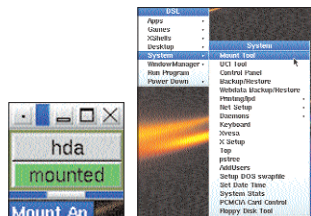


Viewing MS Word documents in DSL

and go to **Apps > Office > MS Word Viewer** to launch it.

**Mount Or Unmount Your Drives**

DSL offers a simple, handy mount tool to mount and unmount drives for control over writing data to them. Right-click on the desktop and go to **System > Mount Tool** to bring up the little application window. Click on the top button to choose the drive, and use the lower button to mount or unmount it—no more terminal commands!



You can use the mount menu and mount tool to easily mount and unmount drives

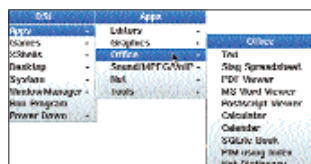
**All Your Office Apps!**

Apart from MS Word Viewer, DSL also gives you nearly all the office applications you'll need. To get to them, right-click on the desktop and go to **Apps > Office**.

Ted is a text editor much like WordPad. It can read and write Rich Text Format (.rtf) and text (.txt) documents.

XPdf and PDF Viewer can read Adobe PDF Documents.

Siag is an Excel-like spreadsheet program that can save spreadsheets as



All you'd ever need for official work is already there in DSL

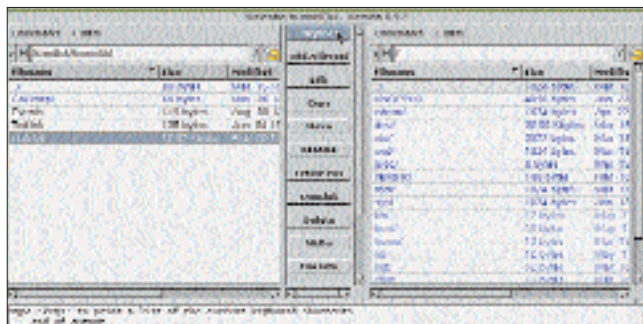
Comma Separated Values (.csv), which can then be read by nearly any spreadsheet program—so you can share it with Excel users as well.

**My Own DSL**

To download and install applications built specifically for DSL using the MyDSL tool, double-click on the MyDSL icon on the Desktop to start it. Click on the category of



Installing DSL applications



The Emelfm (the file manager) will make installations a breeze

application you want to install to view a list, and then download the one you want.

If you've downloaded a .dsl package and want to install it, navigate to it using the Emelfm file manager, select the package, and click on the "myDSL" button right in the file manager.

**Installing new fluxbox themes**

You can use MyDSL to download and install new fluxbox themes, but if you've downloaded them from somewhere else, you might not find things that easy. The themes will usually come in a tar.gz or tar.bz2 file which contain the directories "styles" and "backgrounds". To install the theme, just extract the background files to `/home/dsl/.fluxbox/backgrounds` and the style files to `/home/dsl/.fluxbox/styles`.

**View HTML mail in Dillo**

Sylpheed—the e-mail client that comes bundled with DSL—translates HTML mail to plain text, which can be quite drab if you like receiving pretty, colourful e-mails. You can't change this about Sylpheed, but you can make HTML mail open in the

Dillo web browser (or Firefox, if you please). In the e-mail, click on the Attachments tab; you will see text/plain and text/html and any remaining attachments like images, etc. Right-click on the text/html attachment and choose Open With. Type in "dillo (or firefox) '%s'" and click OK. You'll now have this option available to you every time you right-click on the attachment.

**Tearaway Menus**

The Fluxbox window manager supports tearaway menus—which can stay on your desktop for as long as you want—for items you'd be accessing often: just click on the coloured bar at the head of the menu and drag it to make it a persistent item on your desktop. To get rid of it, right-click on the top bar.

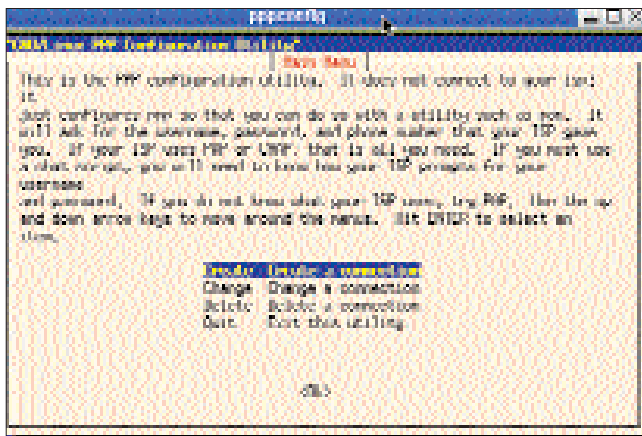


Tearaway Menus are like shortcuts to your favourite applications

**Bet You Didn't Know****Run DSL In Memory**

Did you know that you could run DSL *completely* from your system memory? When you boot from the CD, type in "dsl toram" at the boot prompt. DSL is much faster when it runs from memory, and you don't even need the CD once it's been loaded. What's more, it will run even on a system with as little as 128 MB!





Configure your dial-up connection using pppconfig

### Set Up An Internet Connection

To set up your LAN-based Internet connection, right-click on the desktop and go to **System > Net Setup > netcardconfig**. Use this utility to enter your IP address, DNS address, etc.

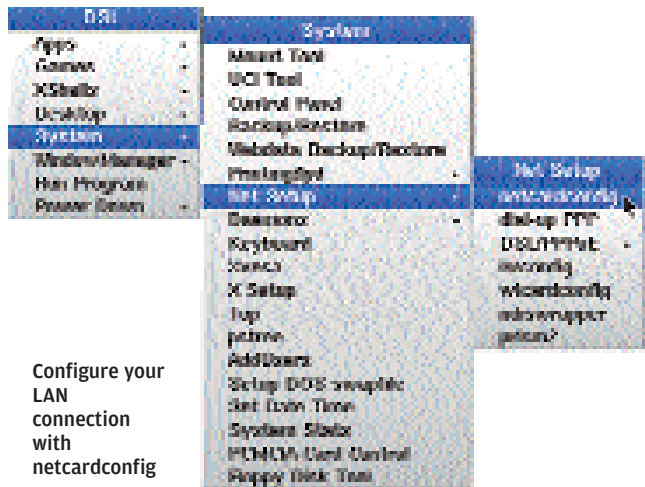
If you have a dial-up connection, use the **Net Setup > Dial-up PPP** utility and set up your connection.

You can now use any of the three browsers to surf the Net—Dillo, Firefox or Netrik, accessible from the **Apps > Net > Browsers** menu.

### Use Apt To Install Packages

DSL is based on the Debian kernel, so you can use the **apt-get** command to install new programs and updates from the Web. First, you need to enable Apt. Right-click on the desktop and go to **Apps > Tools > Enable Apt**.

If you know the package name for the software you want to download, type **sudo apt-get install <package>** in a terminal window, and the application will be downloaded and installed from Debian's repositories on the Internet.



Configure your LAN connection with netcardconfig

### Other Boot Labels

You can also use these boot labels while DSL boots. (You don't need to use the preceding "dsl" for these.)

Expert	Interactive startup/setup
FailSafe	(Almost) no hardware detection
install	Menu-based install system for easy access to all possible installs
lowram	Low RAM usage GUI with Minimal Desktop

### DSL Cheat Codes

They're not really ways to *cheat*, but with these options, you can get some more control over the way DSL behaves. At the boot prompt, type **dsl** followed by the cheat code to get the effect you want.

Code	Effect
2	Runlevel 2, Textmode only
base	Skip myDSL and only load the base system
desktop=	Choose your window manager. Options: fluxbox, jwm
dma	Turn on DMA acceleration for all drives
host=web123	Set hostname
lang={us/cs/da/de/es/fr/nl/it/pl/ru/sk...}	Choose Language/Keyboard
mem=xxM	Specify the RAM in MB. If you are running on a machine with very low RAM, use this code to tell DSL how much memory is available. For example: for a machine with 24 MB of RAM to use, use "mem=24M" ("mem" must be lowercase and the "M" at the end must be uppercase)
minimal	DSL will use the "Minimal" fluxbox theme
mydsl={hda1/sda1}	Where to store your myDSL apps
nodhcp	Skip network setup
noicons	Use a plain desktop
no{scsi/pcmcia/usb/agp/swap/apm/apic/mce/ddc}	Disable detection for the specified hardware
protect	On boot, DSL will prompt you for an encryption password and then triple des encrypt the backup file
restore	Load previously saved configuration
restore={hda1/sda1/floppy}	Specify saved configuration location
secure	On boot, DSL will prompt for passwords for root and dsl
{ssh/lpd/nfs/syslog/monkey/ftp}	Start these daemons at boot. (A <i>daemon</i> is a program that runs in the background and provides a service)
tohd=/dev/hda1	Copy CD to HD partition and run
vga=normal	Most compatible video mode
xsetup	Prompts you to setup X

### Shoot to Kill

If you've used Linux before, you will know that the **[Ctrl] + [Alt] + [Esc]** combination is manna when you need to kill an errant application with a single click. You can get this in DSL as well.

Start Ted by double-clicking the icon on the desktop. Navigate to the **.fluxbox** folder and open the file called "keys". You will get an error saying "keys" is not in the rich text format—ignore the error.

When Ted opens with "keys", add this entry at the end:

**Control Mod1 Escape :ExecCommand xkill**

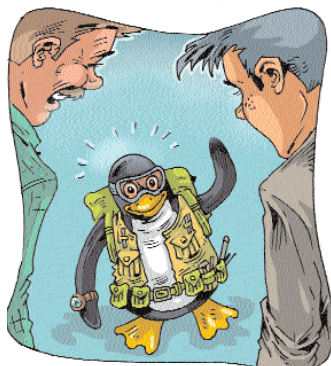
Restart the Fluxbox window manager by right-clicking on the desktop and going to **Window Manager > Restart**. Now, when you need to kill an application, you can use **[Ctrl] + [Alt] + [Esc]** and then click on the misbehaving app to end it. ■



The Ted Text Editor



## LINUX



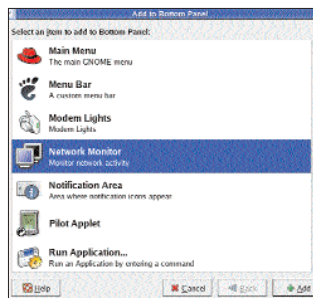
### Keeping Track Of Network Traffic

Linux, by default, does not show a network traffic icon in the panel. The icon shows if your computer is connected to the network or has a broken link.

Gnome users need not worry. The tool is there—all you need to know is where to find it. KDE users, don't waste time looking for the tool! And obviously, those who prefer to work in text mode do not have such privileges.

For Gnome users: to add the Network Activity Monitor to the panel, right-click on the bottom panel and choose 'Add to Panel...' This will open the "Add to Bottom Panel" dialog box. Scroll down the list to choose Network Monitor and then click Add. The Network Monitor is by default configured to eth0, so double-click on it and configure your Ethernet card accordingly.

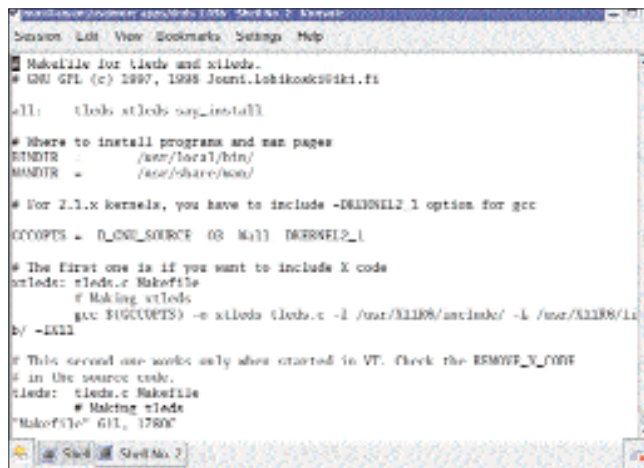
KDE and text mode users need not be disheartened by the absence of this facility. You can make use of the LEDs on the keyboard. The Scroll Lock LED is never used, and



Network Monitor will add an interactive icon on the bottom panel in Gnome desktop

the Num Lock is turned off by default in Linux. You can make use of these two LEDs to show network activity. Download the Tleds package from <http://users.tkk.fi/~jlohikos/tleds.html>

You can run this software on any interface, such as ppp0 or eth0. You need to know which interface of the machine is connected and active to the network. Let's assume eth0 is connected to the Internet, and it is also active offline



Make the changes to the following lines in the Makefile under tleds folder just before compiling it

Download version 1.05beta10, available in tar.gz format. Any Linux x86 machine user can download and use this software. You may have to make a few changes or get certain dependencies resolved, because the package may not cater to all distributions. The newer beta version has support for kernel 2.1.x, 2.2 and also 2.4. So, after you have downloaded the tarball and extracted it to a suitable folder, open the Makefile in a text editor and make the following changes:

Append the line 'GCCOPTS = -D\_GNU\_SOURCE -O3 -Wall' with an entry '-DKERNEL2\_1' to support lower version of kernel. The final line will be 'GCCOPTS = -D\_GNU\_SOURCE -O3 -Wall -DKERNEL2\_1'

The last change is for the man files entries. Tleds adds man pages to /usr/local/man; we need to change this to /usr/share/man. Look for the line 'MANDIR = /usr/local/man/' and make the necessary changes.

After you are done with the changes, install the package by issuing the following command:

```
#make all install + [Enter]
```

but on a LAN. To activate tleds on eth0 issue:

```
#tleds -qd 50 eth0 [Enter]
```

The Num Lock LED shows received packets, while the Scroll Lock LED shows sent packets.

In order to activate tleds for eth0 on every boot, do the following:

```
#echo
"/usr/local/bin/tleds -qcd 50 eth0" >>/etc/rc.d/rc.local
```

If you want to run tleds again but on a different interface, then issue 'tleds -k' and re-run the tleds command on the interface you want it to run on. For ppp0 users, the command switch will vary slightly: 'tleds -qd 100 ppp0'.



### MP3 In Text Mode, MP3 Blaster

The heart of the Linux or Unix platforms lies in the text mode of the OS, popularly known as the command line. Many enthusiastic open source developers have helped to bring entertainment even to the command line atmosphere, which is perhaps unimaginable for a Windows user.

MP3Blaster is one such non-graphical music player for Unix-like operating

systems. The development of this utility is still alive as a project at sourceforge.net. To download MP3Blaster, go to

[http://sourceforge.net/project/stats?group\\_id=154673&u=mp3blaster](http://sourceforge.net/project/stats?group_id=154673&u=mp3blaster)

The file you get here is a tarball (tar.gz or tar.bz2). We follow a method by which we download such applications to a folder called "Utilities", and if it is a tarball file, we extract it to another folder called "more-apps". This way, we can avoid folders and files of the same name (extraction creates a folder with a name identical to the compressed file) under the same folder, and this is also a methodical approach. So the command we use to extract is:

```
[root@test3 Utilities]# tar
-C /usr/more-apps/ -zxvf
mp3blaster-3.1.3.tar.gz
```

Now change your directory to /usr/more-apps/mp3blaster-3.1.3 to start with the installation. To install:

```
./configure + [Enter]
```

This command collects the system details and creates a file containing these details. The process may take some time, and if dependencies are encountered, you need to clear those by downloading the necessary packages.

```
#make + [Enter]
```

Uses the system information recorded by the configure script to build an application as per your system. This process may consume time depending on your system performance.

```
#make install + [Enter]
```

This process places all the build files of an application in folders as per the Linux File System Standard.

At the shell prompt, type in "mp3b" and hit [Tab]. This should complete the command as "mp3blaster". If it doesn't, then hit [Tab] twice to list all probable commands that begin with "mp3b". This is a shortcut to know if your application has been installed perfectly, and of course, even run it.

```
#mp3blaster + [Enter]
```

Will start the application on the entire Konsole window. That means you will have to dedicate a mingetty (TTY) to MP3Blaster.





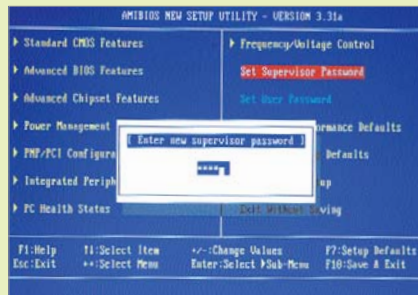
# Secure Your Sensitive Data

An open door attracts even a saint—tempt no one! Protect your precious files and folders, and breathe easy

Kailas Shastry

In this little article, we present the basics of how to protect access to sensitive data on your computer. Follow one or more of these tips based on how much of a paranoid you are!

**1 STEP Use A BIOS System Password**  
One of the basic ways of securing your PC is to prevent it from even booting unless a password is entered. This is achieved by assigning a system password in the BIOS. Once you enter the BIOS, look for an option that says "System Password."



Set a supervisor (system) password



Set the password check to 'Always' or 'System'

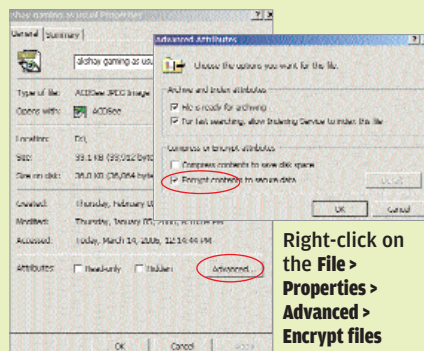
Usually, you can either set a BIOS Password, which prevents open access to the BIOS, or a System Password, which allows booting only if a password is entered. Assign a System Password when prompted. Once the password has been confirmed, you can save your settings and exit the BIOS. (On some BIOSes you need to change a Security or Password setting under 'Advanced BIOS settings' to read 'System' or 'Always'. Now, when your computer restarts, you will have to enter the password during booting. This can be your first line of defence. However, the BIOS password can be

reset by someone who knows his way around the motherboard. But such a person risks being caught opening up your computer's cabinet! Even then, let's look at some other things you can do to keep your files from being opened by others.

**2 STEP The Windows Password**  
If your guest account is enabled in Windows 2000 or XP, you may turn it off so only registered users and the Administrator can get into Windows. This setting can be accessed by going to User Accounts in the Control Panel. This should take care of most intruders except for the really determined ones who, given enough time, can boot off a CD or USB drive and copy or read your files. This is time-consuming, but possible nevertheless.

**3 STEP Encrypting Files**  
Even if someone does get into your system, you can still prevent them from opening your files, by using XP's encryption feature. Encrypted files can be opened only by the user who encrypted it. It will still be possible for other users to delete them. This system is OK in cases where losing a file is better than someone else knowing its contents.

Even if the encrypted file is copied onto another machine, it is not possible to open it without a Security Certificate imported from the computer on which the encryption was



Right-click on the File > Properties > Advanced > Encrypt files

done. The encryption feature works only with the NTFS file system.

**4 STEP Passwords in MS Office**  
If you want to go a couple of steps further in making your

documents secure, you can assign a password to your MS Office and OpenOffice.org files from within the software. In MS Office applications, you can assign a password by going to File > Save As > Tools > Security Options. Here, you can assign passwords for modifying or even viewing the file.

If you are working on files such as images that cannot be password-protected, you can add your files to a WinZip archive—or, if you have Adobe Acrobat, then to an Acrobat file—and assign a password to it.

**5 STEP Choosing a good password**  
☐ Avoid using dictionary words.  
☐ Use many characters.  
☐ Use numbers randomly in the password.  
☐ Upper case should be used in part.  
☐ Special characters such as @ and ^ may also be used if the software permits it.

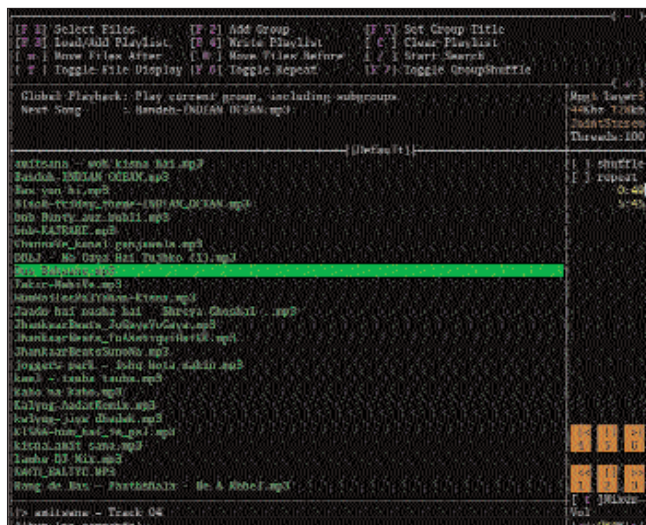
**6 STEP Destroy them for good!**  
☐ Just like you would shred sensitive documents that are no longer needed, break CDs / floppies that contain personal data before throwing them away.  
☐ When you delete your files from the Recycle Bin, the raw data of the file is retained on the hard disk. To permanently delete the data, use file shredding software such as Simple File Shredder ([www.scar5.com](http://www.scar5.com)).

**7 STEP The paranoid geek!**  
Some of us don't stop here—we change the extension of the file, rename it to make it look like a system file, change the date attributes and then move it to the Windows folder where no one can identify it unless they know the exact file name. File hiding software such as Magic Folders and Gate Keeper offer encryption and hiding of files. Then, there are also mechanisms by which Windows can be set such that it will start only if a USB drive with some authentication files is inserted.

**One last word:** there is no system that cannot be beaten given time and expertise. The only way to totally secure your computer would be to prevent physical access to it. Sorry, but that's the way it is! ■

[kailas\\_shastry@thinkdigit.com](mailto:kailas_shastry@thinkdigit.com)





The playlist get maximum space at the centre and controls are located on its broder

### Player Control

Even if the mouse is enabled, it cannot be used to click on buttons. The entire control for this application is possible only via the keyboard. The top of the screen lists all the keys in order to play the music file. The right pane contains buttons for play, pause, forward, etc. and it also displays the toggle switch for repeat and shuffle. In between the top and right pane is an empty area (when run for the first time) where the playlist will appear after selection of media files. MP3Blaster supports OGG, WAV, Sid, and of course,

MP3. Below are the list of keys you will need to operate the player:

Once you enter a folder view using [F1] or [F3], the function of certain keys listed above changes. For example, [F6] gets assigned to "Convert MP3 to WAV," and [F7] is assigned to "Add URL (shoutcast)." Look at the key list given on the player's interface—the playback keys will never change. Use [Q] to exit the player.

### Tricks with ifconfig

This is a versatile command. It is mainly used to deal with network adapters such as displaying

the address and details of an adapter, say eth0. It can also be used to shut down an active adapter or bring up a deactivated one. But very few are aware that it can be used to spoof the MAC address of your Ethernet controller.

This command followed with the interface name and parameter "up" or "down" will start or shut down the interface specified.

**#ifconfig eth0 down + [Enter]** will shut down the Ethernet service.

**#ifconfig eth0 up + [Enter]** will bring up the Ethernet connection on your PC.

Assuming that you have only one network interface i.e. eth0, we shall try a different trick with the ifconfig command.

We all know that ifconfig by itself will display the details of all the installed interfaces. Use it to get the MAC address of your Ethernet card, as shown in Table 1 below.

Select the line 'HWaddr 00:0C:76:52:E6:F5' using your mouse (note that your interface address will be different from ours). Open a text file using any text editor and paste this line by clicking the middle button of your mouse (applicable for a three-button scroll mouse; else enable emulate three-button feature) or if you have

emulated three-button feature, then click both the left and right buttons simultaneously to paste it. Name the file 'MAC address-original' or something similar so that you will remember this file contains the real address. Although the original MAC address is restored on restarting the PC, we maintain this step so that we can restore the MAC address manually, without restarting.

To spoof the MAC address, you need to shut down the interface and then change the address, and finally, activate the interface connection. Here's how to go about doing it:

**#ifconfig eth0 down + [Enter]**

**#ifconfig eth0 hw ether 00:00:00:00:00:00 + [Enter]**

**#ifconfig eth0 up + [Enter]**  
Now check if the changes are made:

**#ifconfig + [Enter]**  
You will see Table 2

You can even change the "inet addr" (IP address) and "Mask" (subnet mask) directly using the ifconfig command:

**#ifconfig eth0 10.10.124.28 + [Enter]**

This will change the IP address. And

**#ifconfig eth0 netmask 255.0.0.0 + [Enter]**

will change the subnet mask from 255.255.0.0 (/16) to 255.0.0.0 (/8). ■

### Player Control

- [F1] To select music files using the inbuilt file browser. After selection, hit [F1] again to add to the playlist.
- [Spacebar] To select or deselect music files
- [F4] To create a playlist. Name the file with a .lst extension
- [C] To clear the playlist
- [F3] To load a playlist
- [F6] Toggle repeat
- [F7] Toggle shuffle
- [F] Toggle file or screen display

### Playback (Numeric keypad keys)

- [4] Previous track
- [5] Play/pause
- [6] Next track
- [1] Rewind a track
- [2] Stop a track
- [3] Forward a track

### Sound mixer settings

- [T] Toggle mixer: Volume, PCM, lGain, Spkr, Line-in, etc.
- [>] Increase the level of a mixer setting, for example, Volume
- [<] Decrease the level of a mixer setting, for example, volume

Table 1	<b>eth0</b>	Link encap:Ethernet HWaddr 00:0C:76:52:E6:F5 inet addr:128.128.255.51 Bcast:128.128.255.255 Mask:255.255.0.0 inet6 addr: fe80::20c:76ff:fe52:e6f5/64 Scope:Link UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1 RX packets:375613 errors:0 dropped:0 overruns:0 frame:0 TX packets:2467 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:1000 RX bytes:26276079 (25.0 MiB) TX bytes:494497 (482.9 KiB) Interrupt:11 Base address:0xaf00
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Table 2	<b>eth0</b>	Link encap:Ethernet HWaddr 00:00:00:00:00:00 inet addr:128.128.255.51 Bcast:128.128.255.255 Mask:255.255.0.0 inet6 addr: fe80::20c:76ff:fe52:e6f5/64 Scope:Link UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1 RX packets:375613 errors:0 dropped:0 overruns:0 frame:0 TX packets:2467 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:1000 RX bytes:26276079 (23.5 MiB) TX bytes:494497 (477.2 KiB) Interrupt:11 Base address:0xaf00
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# Q&A

Your Questions, Our Answers

## Don't Do That!

**Q** Recently, I visited some Web sites and clicked on certain links that offered free screensaver downloads. Ever since, my PC has been plagued by spyware and adware. As a result, whenever I am online, many pop-up windows open by themselves. What do I do?

**Abhishek Ramesh**

**A** In order to get rid of spyware and adware from your computer, you should install a good anti-spyware such as AD-Aware from [www.lavasoftusa.com](http://www.lavasoftusa.com) and update its definition files prior to thoroughly scanning your hard drive.

Not all spyware and adware can be deleted by a single anti-spyware software and hence you should also install another good anti-spyware such as Microsoft AntiSpyware from [www.microsoft.com](http://www.microsoft.com), update its definition files and run a scan to minimize the chance of any spyware and adware surviving on your PC.

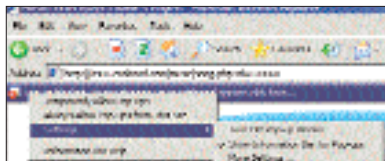
## Help Blocker?

**Q** I have Office 2003 installed. Under the Help menu, when I click on Microsoft Office Online for help, the Help window does not appear, and an information bar appears at the top of the window. I have Windows XP Professional SP2.

**V Mahendra**

**A** This happens because of the pop-up blocking feature of the version of Internet Explorer 6 that comes with Service Pack 2. You could override the pop-up blocker: click on the link that opens the pop-up window, while keeping [Ctrl] pressed. To temporarily enable pop-up windows, click on the Information Bar at the top of the window, click "Temporarily Allow Pop-ups." When you shut down the IE window, this temporary permission will be revoked, restoring the original pop-up blocking settings.

In the second method, you could permanently enable pop-up windows on the Microsoft Office Online Web site: click on the Information Bar, click on "Always Allow Pop-ups from This Site," and when prompted with the message "Would you like to allow pop-ups from 'office.microsoft.com'?" click Yes. This



Temporarily turn off IE's pop-up blocker

will permanently set the pop-up blocker to Off for this Web site.

If for some reason you wish to restore the original pop-up window settings for this Web site, open Internet Explorer. Click on the Tools menu, point to Pop-up Blocker, and click on Pop-up Blocker Settings. In the "Allowed Sites" list, click on [office.microsoft.com](http://office.microsoft.com), then click on Remove followed by Close.

## The More, The Merrier

**Q** I have an HP Pavilion w5130in PC with Intel GMA900 onboard graphics. I recently upgraded my PC to 512 MB of RAM. My onboard graphics is using 8 MB of memory, and I wish to upgrade its memory too. Is this possible?

**Mithik Biswas**

**A** While it not possible to upgrade the memory of onboard graphics, it is certainly possible to increase the amount of shared memory that you can allocate to it. To do this, enter the BIOS and go to the Advanced Peripherals Setup, under which you will be able to find the option to increase the amount of onboard graphics shared memory.

## Admin Autopatched!

**Q** I have Windows XP Professional. I loaded AutoPatcher XP from your November 2005 DVD, and on the same day, I updated Windows via [windowsupdate.com](http://windowsupdate.com). The problem is that now, a Guest account login icon is available instead of the Administrator login, so I can't log in as Administrator. The other account I have is a limited account, and is of no use—I can't install software or make changes to my system settings.

**Venkat**

**A** Your Guest account icon is now visible because your Guest account, which must have been disabled thus far, has been enabled. Even though you may not be able to view your Administrator account, you will still be able to log in to it by pressing the Ctrl-Alt-Delete key combination twice at the login screen. Enter "administrator" as the username, and your administrator password. You may then change the type of the account you already have from Limited to Computer Administrator.

## Update And Patch

**Q** I have an Intel Pentium 4 3.0 GHz, an Intel D915GVWB motherboard, 512 MB of RAM and an 80 GB SATA hard drive with Windows XP Pro SP2. Whenever I run games such as *Age of Mythology*, *Age of Titans* and such, the game crashes to the desktop after a while. I'm using the onboard graphics and sound.

**V Phani Sekhar**

**A** Download and install the latest version of the graphics and sound drivers from Intel's Web site. Also download the latest version of DirectX from Microsoft's Web site. And finally, download the latest patches for your games from their respective sites.



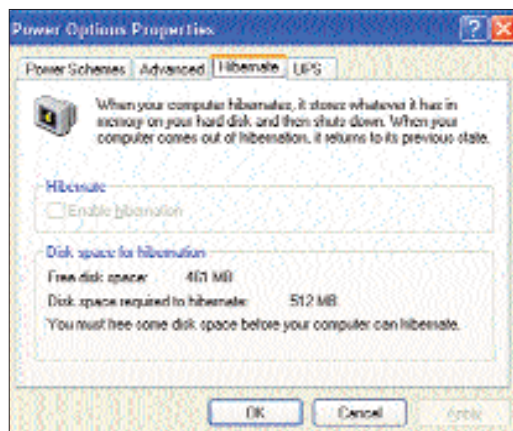
## Insomnia

**Q** I have an AMD Athlon64 2800+, an MSI RS480 motherboard with 512 MB RAM, and Windows XP Pro. I have been using the hibernate feature instead of shutting down my computer. Of late, the low disk space warning on the C drive has started appearing, and the hibernate option appears to be disabled.

**Pradip Ghosh**

**A** When an XP-based computer goes into Hibernate mode, it creates a file called hiberfil.sys in the root directory. The size of this file is, of course, equal to that of the system RAM, because XP stores the contents of the RAM in this file.

In your case, because of the low disk space, there is not enough space to create this file, so



The Hibernate option gets disabled due to low disk space

the Hibernate feature is disabled. To re-enable it, free up enough space—512 MB in your case—on your C drive.

## Startup In Slo-Mo

**Q** Every time my PC boots, it takes around 30 to 40 seconds to detect the combo drive before proceeding. Then, when the XP welcome screen appears, it takes another 2 to 3 minutes to start Windows. The hard disk activity LED is on during all this time.

**Priyesh Kanodia**

**A** The problem could just be caused by a loose data or power cable. Remove the cables and clean the contact areas using a brush. Do the same at the contact area of the hard drive and the combo drive. Then, run a thorough disk scan of your hard drive to verify if there are any cross-linked files, or if any bad sectors have developed.

To do this, open My Computer, right-click on each drive, select Properties, and click on the Tools tab. Under Error Checking, click on the Check Now button. In the Check Disk window that opens, select “Automatically fix file system errors” and “Scan for and attempt recovery of bad sectors,” and start the disk checking process. If problems are found and fixed, you’re good to go.

## Sounding Off

**Q** My Samsung 40 GB 7200 rpm hard drive has recently started making weird sounds—they sound like “kit kit,” and the computer is not able to boot into Windows. I connected it to a friend’s PC: while his PC detected the hard drive, it could detect only two of the four partitions. Can NDD recover the data on the other two partitions?

**Harish Negi**

**A** The kind of sound you’re talking about generally indicates that the media—the disk platter—has suffered physical damage. In your case, since at least some data is accessible, it seems the partition table of your drive has become corrupt. Many disk utilities such as Disk Scan and Norton Disk Doctor can attempt to repair such errors, but there is no guarantee that the data will be recovered. Hence, before running such utilities, it is better to run data recovery utilities such as OnTrack Easy Recovery Professional, or one of the utilities from R-Studio, to maximise the chances of recovering data.

If your data is recovered, back it up and then run the disk scanning utilities to repair the errors in the partition table. You should be able to use the drive. But even then, the sound from your drive is not something that can be ignored—you’ll likely need to replace it.

## Nero Says Nyet

**Q** I have an LG GCC-4240N DVD-Writer. My computer has Windows XP and Nero 6.3.1.15 installed. Whenever I begin writing a CD or DVD, after completing 2 to 3 per cent, Nero reports an “Invalid write state” error, and a castor results.

**Manikant Patel**

**A** There is not one definite reason due to which this error occurs, but you can try downloading and install the latest ASPI layer from Adaptec. Also try using a different brand of media. Look for and download the latest firmware for your drive off the Internet and upgrade to that version. If even that doesn’t help, your DVD-Writer has developed a hardware problem, and you’ll have to replace it.

## Download The DLL

**Q** I have Windows XP installed. When I try to install eDonkey, I get an error: “MSVCP71.DLL was not found.” What could be the problem?

**Chirag Bhunatar**

**A** This could happen either if MSVCP71.DLL is missing, or if it got unregistered. Search for the file in the System32 directory. If you find it, go to Start > Run, type in “regsvr32 C:\Windows\System32\MSVCP71.dll”, and hit [Enter] (assuming that Windows is installed in C:\Windows). This will register the file. If the file is missing, you can download a zipped version from [www.dll-files.com/dllindex/dll-files.shtml?msvcp71](http://www.dll-files.com/dllindex/dll-files.shtml?msvcp71). Register the DLL as explained above.





# Mix Tracks Using Audacity

**Ever felt you can do better than the unrelenting remixes streaming from your radio? An audio editing tool and some creativity is just what you need to make your own mixes!**

**Kailas Shastry**

**H**ere, we look at the basics of audio mixing using Audacity, a very powerful free and open source software. You can download Audacity from <http://audacity.sourceforge.net/download/windows>. To save your tracks as MP3s, you need the LAME MP3 Encoder, which is available under 'Optional Downloads' at the same site.

## 1 STEP Opening Tracks

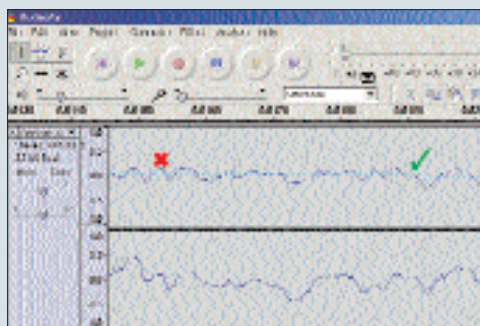
Once you start Audacity, you can open the songs you want to work with by selecting Import Audio from the Project menu. File > Open will open the file in a different window. The song(s) will open in different tracks in the same window as waveforms.

A waveform is a graphical representation of the audio file. It shows the amplitude (or volume) of the track at every instant of time. You can play from any position on the track by simply clicking on the waveform at the desired point (timeline) and pressing the spacebar or the Play button. To select a portion of the waveform, just click and drag your mouse cursor and you will see the waveform being highlighted.

## 2 STEP Making A Selection

Let's say you want to mix the music from *Darude* with the track of *Alice DeeJay*. Open these files in separate windows. Note that you cannot copy just any part of *Darude* and mix it at any point in *Alice DeeJay*. First, you must take care to begin your selection (in this case, *Darude*) at a point on the waveform where the amplitude is zero. Zoom in to the waveform to pin-point a position where the Y-axis (hence amplitude) is zero. Similarly, end the selection at a zero amplitude point.

When you play the tracks, ensure that the mix sounds good. You may need to spend some time on it before you get the proper hang of mixing at the correct points. You can try different combinations like mixing the intro



6 Do not start your selection from this point

4 Selection can start from here

music of a number at the end of the song, extending the track by pasting another song at the end. The possibilities are limited only by your creativity!

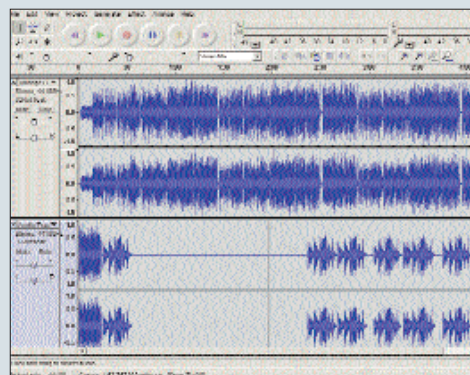
## 3 STEP Normalising The Tracks

When you have two songs open, you will immediately see that the average levels (the Y-axis levels) of the two are different (in most cases). Before you do any mixing, you need to bring them to the same level by a process called normalising. Press [Ctrl] + [A] to select all tracks, and go to Effect > Normalise and apply the change.

## 4 STEP Mixing The Tracks

Open the *Alice DeeJay* track in a new window and here, create a new blank track by going to Project > New Stereo Track.

Choose the point(s) in *Alice DeeJay* where you want to mix your selection. Now, in the blank track that appears



The main and mixing tracks

just below, paste this selection (from *Darude*, by our example) at a point of your choice. Now when you play the track, you can hear the sound from both tracks. You can repeatedly paste your mixing selection to create a loop effect or even paste them at different points.

If your mixing appears at the beginning of the track, you may want to Fade In your selection (increase the amplitude gradually) or conversely, Fade Out if it appears at the end of the track. These options can be found under the Effects menu.

## 5 STEP Deleting Parts Of A Track

Deleting is perhaps the simplest thing you can do—just highlight (select) the portion to delete and press [Delete]. You may select a whole stanza or beat sequence to delete if you want to shorten the song. Erasing at random will make the track sound bad, to say the least!

## 6 STEP Save The New File!

Once you're satisfied with the way your mixed track sounds, you can save it as an MP3 by going to File > Export as MP3. Your output file will contain the "mix" of both the tracks.

Mixing two tracks is just one of the basic operations that can be performed on audio files using Audacity. Audacity offers a lot more editing and manipulation options. Try different options under the Effects menu on parts of the file. The hitherto dormant Music Director in you might just be unleashed! ■

*kailas\_shastry@thinkdigit.com*

## Zooming Into The Waveform

By default, the waveform is 'fitted' onto your screen's maximum width. For finer detail, you can zoom into it using the zoom controls. As the waveform is unfolded before you, you will find it easier to make an accurate selection.





## AGP Acting Up

**Q** I have a P4 3.0 GHz, an Intel D865GBF motherboard, 512 MB of RAM and a Seagate 40 GB IDE hard drive. Recently, I purchased a Leadtek GeForce 6600 256 MB AGP card. My problem is that when I plug in the card and try to start my PC, it suddenly hangs (after loading XP), the monitor goes off, and the system restarts. The PC works properly with onboard graphics. I have a 350 W SMPS.

Arvind Sudevan

**A** First see if the cooling fan on your display adapter is working. Second, you could try completely uninstalling

any graphics drivers and then installing the latest drivers for your display adapter along with the latest version of DirectX for your version of Windows. But ideally, you should first plug in the display adapter and do a fresh install of Windows, then load DirectX and the latest display drivers. This way, only your display adapter's GART (Graphics Array Relocation Table) driver—which is necessary for full AGP functionality—will be loaded.

A 350 W SMPS is more than enough for the GeForce 6600 to function properly even at full load. If what we've mentioned doesn't get your card to work, your display adapter is probably faulty and needs replacement.

## A Question Of Existence

**Q** I have an LG laptop with Windows XP Home Edition. I am unable to run the Group Policy Editor even though I log in as Administrator. How can I run GPEDIT.MSC?

James Thomas

**A** The Group Policy Editor is not available in Windows XP Home Edition, and therefore, the file GPEDIT.MSC doesn't exist on your installation.

## Can Connect, Can't Chat

**Q** Our school computer connects to a server in the school for Internet access. While I am able surf freely, I am not able to connect to any messengers such as Yahoo!, MSN and Rediff. Why?

Shachi Dixit

**A** The PC probably accesses the Internet through a proxy server. It looks like the administrator has disabled the default ports that are used by messenger services, probably in accordance with the school's policy—meaning you aren't allowed to use Instant Messengers. You could try asking your administrator for access!

## We Don't Help No Pirates!

**Q** My PC has Windows XP Pro with SP2. *Digit* distributed IE 7 Beta on a CD. When I tried to install it, I was unable to: I was taken to the Microsoft Web site to verify if my Windows was genuine. I've heard this check can be bypassed. Can you help me?

Pravin Mehra

**A** You can only install IE 7 if you have a legal version of XP. It appears you're using a pirated version. There may be ways to circumvent the check, but that amounts to piracy. We can't talk about any of these "workarounds."

## Of Batteries And Software

**Q** I have a Celeron-M 1.5 GHz based HPn6110 laptop. It has a six-cell Li-ion battery. Is there any way to extend the battery life? I came across a battery-maximising software called "Battery Doubler" at [www.dachshundsoftware.com](http://www.dachshundsoftware.com). Battery Doubler has been discontinued; can you suggest a similar software?

Stanley Leo

## Get Help Now!

E-mail us your computing problems along with your contact details and complete system configuration to [sos@jasubhai.com](mailto:sos@jasubhai.com), and we might answer them here! Since we get many more mails per day than we can handle, it may take some time for your query to be answered. Rest assured, we are listening!

**A** Software can't manage anything but a few system tweaks. The best way to maximise battery life is to adopt a few good practices. In the Control Panel, launch Power Options, and set the power scheme to Portable/Laptop. You can also set a custom power scheme—for example, you could choose to switch off the hard disk after five minutes of inactivity. Remove any USB devices that are not being used. In addition, shut down Wi-Fi, Bluetooth and infrared.

## Universal Serial Bug

**Q** I have a Panasonic NV-DS60 DV video camera with the IEEE 1394 4-pin connector. I purchased a USB 2.0 cable to connect the camera to my laptop. When I try to connect it, however, I get an error message: "One of the USB devices attached to this computer has malfunctioned, and Windows does not recognise it."

Prasanna Gonthi

**A** If you're using Windows 98, you will have to install the drivers for the camera for Windows to recognise it. If you're using XP, then for proper USB 2.0 functionality, you should install SP2. In addition, some DV video cameras require drivers to function in XP—most manufacturers provide these drivers along with the product. Also look for updated drivers on the Net.

## The Heat Is On

**Q** While booting, the CPU temperature displayed in my BIOS is between 40 and 80°C. Can XP hang because of this? Second, my BenQ Combo drive is not able to write CD-RWs, nor read from them. I have Nero 6.6; in the Nero Info Tool, it says I don't have the drivers for my drive installed.

Deblina Naithani

**A** Your CPU is overheating, and XP might very well be hanging because of this. Possible causes can be the CPU fan not working, an improperly mounted heat sink, or an ill-ventilated cabinet. You might want to invest in a good heat-sink fan assembly.

The CD-Writer not being able to write CD-RWs is because it is old—this cannot be rectified. XP does not use the ASPI drivers that were used by previous versions of Windows to access the CD writing function. It uses a driver of its own—that's why Nero Info Tool reports the error. ■



# Agent 001 Hunts Down The Perfect Pixelator

**Want to get yourself a compact digital camera... or even an entry-level SLR? Here's a look at the market scene**

I've taken up photography as a full-fledged hobby, so to speak, and clicking away is all the more enjoyable when you're travelling. And yes—the summer holidays are here! Time for me to chalk out an itinerary of worthy places to visit, but before that, I've got to get myself a good—and I mean *good*—camera.

My Nikon FM-10 manual SLR may only be three years old, but being film-based, it's expensive to run. I therefore decided on a new digital camera for this summer. Mind you, when it comes to buying a digital camera, a lot of things need to be considered, the most important being the megapixel count, optical zoom, optics quality, and type of memory supported.

"The higher the megapixel count, the better the camera." That's what most folks believe. It's partly true, but one also needs to pay attention to the quality of optics—Carl Zeiss, Schneider-Kreuznach, and Nikkor lenses, amongst others, are considered good. My advice would be to not pay too much attention to the megapixel count; it is *not* the yardstick.

There are many cheap digicams out there that claim high megapixel counts, and which cost around Rs 5,000. Avoid such cameras, since they use low megapixel count sensors and digitally bump up the resolution. This results in loss of quality.

The best place to check out digital cameras in Mumbai are Heera Panna shopping centre and Alfa. Other great places are the lanes near the Fort area. For other cities, make sure you go with some references!

A year ago, a basic digital camera from a known company would cost around Rs 10,000; the price has now slipped to an average of Rs 7,000. The feature sets offered are good enough for casual shutterbugs. One can expect a 3-megapixel camera with an optical zoom of around 2X and memory storage on an SD/MMC card for this price. Canon's PowerShot A410 is the cheapest camera I could locate; it retails at around Rs 7,000 and comes with a good feature bundle. It's rugged, and it's definitely a good point-and-shoot camera for the price. Of course, you'll need to bear in mind that these are grey market prices; the official prices will be a little higher.

If your budget centres around Rs 10,000, you can get a decent point-and-shoot camera. The Sony CyberShot S90 retails at around Rs 10,500.

If you stretch your budget a little, Nikon's Coolpix 5600 is available for around Rs 11,000. It's a 5.1-megapixel camera, with 3x optical zoom and great optics. If you are considering a mid-range camera, the Nikon Coolpix 5600 would make a good buy. In the same price range is the Sony CyberShot W5, which has a large LCD display and boasts of terrific performance (we've tested it). The W5 is quite compact, offers a 5-megapixel sensor, nearly 3x optical zoom, and a good lens.

Canon's PowerShot A540 is a 6-megapixel camera with 4x optical zoom, and cramps in many easy-to-use features. Priced at Rs 15,000, the A540 is attractive, and should be considered if you're looking for a compact digicam.

That apart, Sony's P200 is one great camera to look out for. This model comes with a 7-megapixel sensor, a Carl-Zeiss lens, 3x optical zoom, and offers wonderful performance. At Rs

13,500, the P200 is hard to miss, and is probably the camera you should be buying if you're interested in a compact point-and-shoot camera.

The entry-level digital SLR market is quite "hot" right now as they say, and anyone aspiring to go beyond the amateur stage should opt for one of these.

What you should be looking at are the Nikon D50 and D70. They retail at around Rs 35,000 and 48,000 respectively—that's the cost for the body and one removable lens. Later on, you can go for additional lens such as wide-angle, close-up, and more. As for Canon, think about the 350D, which is a direct competitor to the Nikon D70. Retailing at between Rs 38,000 and 42,000, the 350D, too, is a good entry-level digital SLR.

Since I already have an SLR, I thought I should get myself a point-and-shoot thingy. And that's what I did—the Sony P200, at Rs 13,000, was simply too good to be ignored. ■

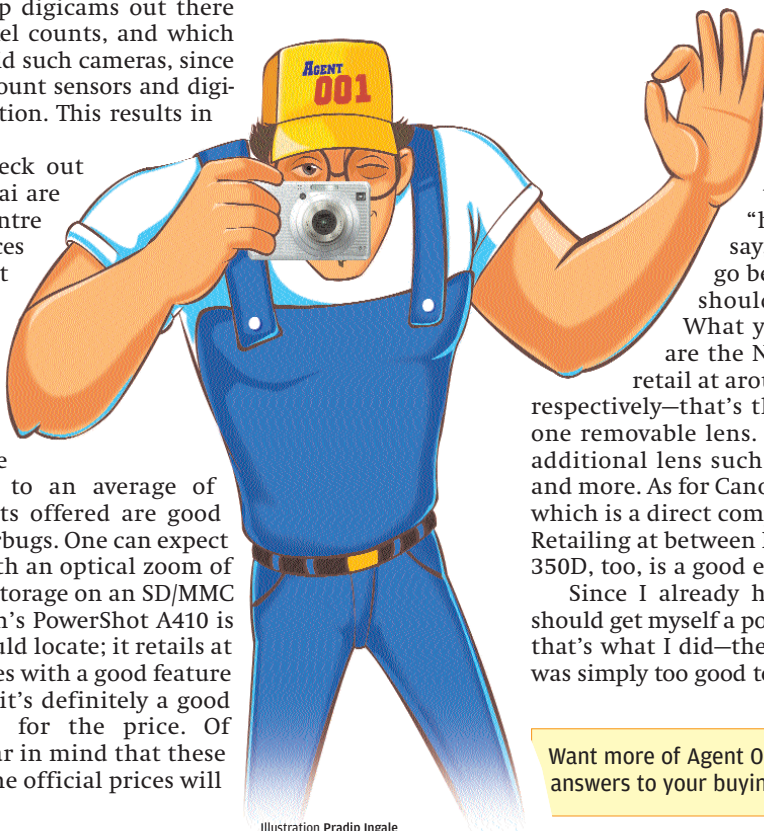


Illustration Pradip Ingale


Want more of Agent 001? Turn over to read his answers to your buying questions



## Dongles By The Roadside

**Q** I want to get myself a Bluetooth USB dongle with a range of up to 100 metres. What is the best one available? Also, please explain the difference between Bluetooth V1.0 and V2.0.

Ami Chaudhari


 Since we haven't tested Bluetooth dongles, I would reserve my opinion. There are many makes; I have been using a Billionton Bluetooth dongle for over a year and it hasn't given me any problems. You might want to opt for a Billionton; they come with good applications too. Or else, visit <http://www.thinkdigit.com/forum>, and ask our readers what they're using. A 100 metre dongle retails at around Rs 500—this was the price the last time I checked; you should be able to get it for less. If you are in Mumbai, try to procure such items from roadside vendors in Lamington Road selling computer accessories—you'll get a good deal.

Version 1 of Bluetooth supported fewer features and lacked certain security features. In version 2, new features were added, and the security issues were resolved.

## Laptops: Don't DIY

**Q** I am planning to assemble a laptop. Please provide me a complete list of required parts and approximate prices. I wish to configure a P4 Centrino mobile 1.86 GHz or above, 512 MB of RAM, 80 GB HDD, DVD-Writer, and a Sony LCD.


Vikas

 It is certainly possible to assemble a laptop at home, but provided there's a vendor who is ready to sell you the required components—and I don't think any vendor is. In my humble opinion, you should drop the idea, and opt for a decent laptop from a proper brand. Also, the Centrino platform has a Pentium M processor and not a Pentium 4. Try HP laptops—you'll find a good range, and most make decent buys. A laptop with the configuration you've mentioned will set you back by Rs 60,000 or more.

## Digicams—For Better Or For Worse

**Q** I want to get myself a digital camera and have short-listed two models—Sony's CyberShot DSC-P200 and Nikon's COOLPIX S4. Which is better?

Anil Kumar

 We tested the Sony CyberShot P200 last year and found it to be a good camera—a worthy successor to the P150 that won our best digital camera award a year before that. The CyberShot P200 is a good camera when it comes to picture quality, and if you're interested in printing 4 x 6 photographs, it's more than enough. However, like in most 7-megapixel cameras, the sensor tends to introduce noise into the final picture when used at the highest settings.


The Nikon COOLPIX S4 is an ultra-zoom camera with a 10x optical zoom lens. Despite the zoom factor, the S4 is compact and should fit in a jacket pocket. The best thing about the S4 is its swivel body, which allows turning the lens by 270

degrees—great for shooting over people's heads or at awkward angles. We haven't tested this model, so I can't give a clear verdict as far as the picture quality is concerned. But generally, going by Nikon's standards, the camera should be good enough for amateur photography. I would recommend the Sony CyberShot P200 though.

## TV-Tuners: Good And Better

**Q** I want to buy an internal TV-Tuner card with FM radio and capture capability. Can you suggest some of the brands available and the best amongst them? My system configuration is a Pentium 4 3 GHz, a 915 Motherboard, and 512 MB of memory.


A Venkata Siva Moorthy

 There are lots of brands of TV-Tuners. Mercury, Intex, Enter and others catering to the entry-level segment. Cards from these vendors are generally in the range of Rs 1,500 to 1,800. Pinnacle and Compro are premium brands, and have quality products priced above Rs 2,500. You can think about getting yourself the Pinnacle PCTV 110i internal TV-Tuner card, which retails at around Rs 4,250.


## A Storage Conundrum

**Q** I want to buy an external storage device, and I'm stuck between a pen drive and a card reader. My budget is Rs 1,500, and I want 256 MB or more of storage.

Kapil

 Before I resolve your dilemma, let me clear the mist for you. A card reader isn't a storage device; it is a reading device needed to read data from cards such as MMC, SD, Memory Stick, etc. An analogy would be that a card reader is similar to a floppy drive, which is required to read data from floppies. As far as pen drives are concerned, you can opt for a 256 MB drive from a good brand such as Transcend, Gigabyte, Kingston, and others. These should fall in the price range of Rs 1,200. ■

## The Middle Path

 I get lot of mails asking for a good mid-range PC configuration. Here's a list of components that should go into making a good mid-range PC.



### Choose Your Computer

Component	Make	Cost (Rs)
CPU	AMD 939-pin Athlon64 3200+	7,500
Motherboard	ASUS A8N-VM CSM or MSI K8NGM2	6,500
RAM	512 MB DDR 400 Hynix	3,500
HDD	120 GB SATA WD / Samsung / Seagate	2,650
Monitor	17-inch Acer 715 or Samsung DF793	6,500
Keyboard	Logitech	300
Mouse	Logitech Optical	300
Cabinet	Any	500
Power supply	Antec / VIP 350 W	2,000
Optical Drive	Lite-On / Sony DVD-Writer	2,750
Speakers	Creative Inspire 2.1	2,400
<b>Total</b>		<b>34,900</b>
Graphics Card	XFX GeForce 6600 GT	12,000

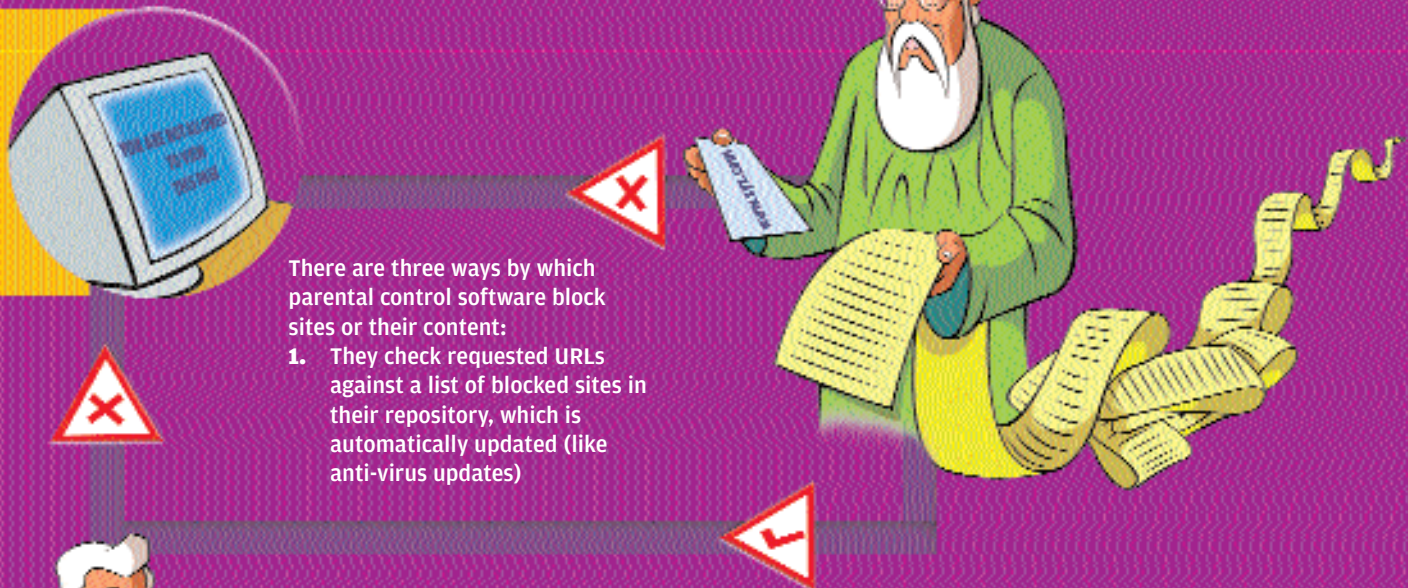


### Ask Away!

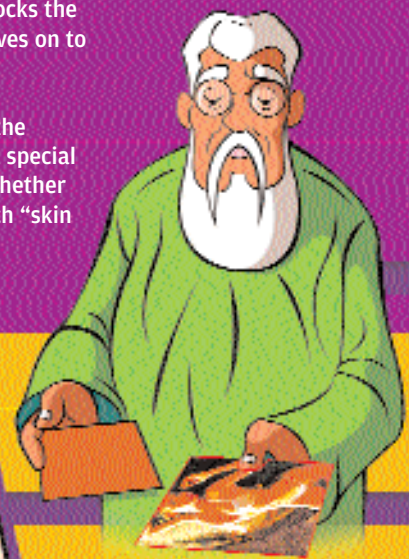
Want a tech product, but don't know how to go about buying it? E-mail [agent001@thinkdigit.com](mailto:agent001@thinkdigit.com) with your complete contact details, and he might answer them here! Please note that Agent001 only answers purchase-related questions in this space.



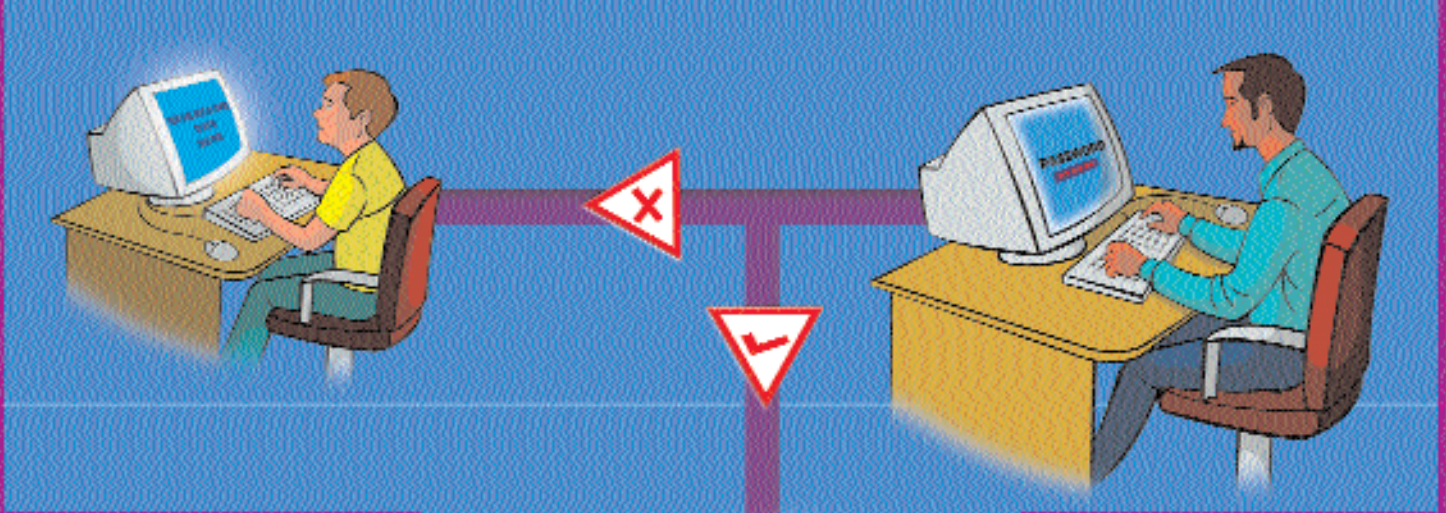
# How Parental Control Software Works



3. The software then checks the images on the site. Using a special algorithm, it determines whether an image contains too much "skin colour," and blocks it

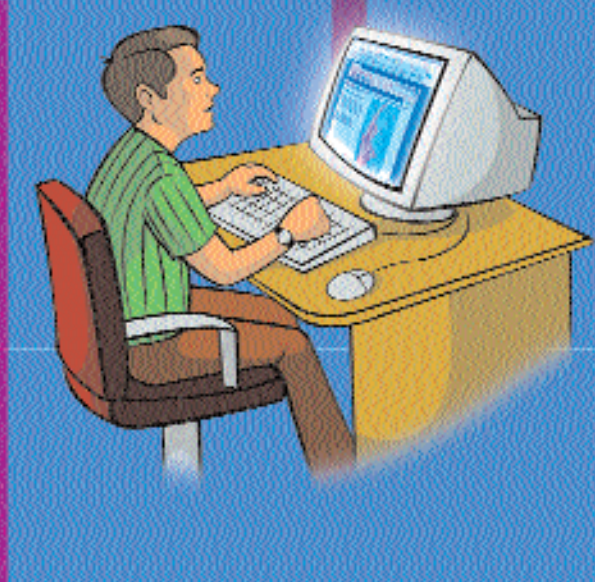






If the site that is being requested fails test 1 or 2, you get an error page. If the site passes test 1 and 2, but some images fail test 3, the site gets rendered without the possibly offensive images.

This setting is controlled via the options, and different software have different settings. As a result, some software might actually block the entire site if any images fail test 3



Considering that a home might have children of different ages, many parental control software allow for user accounts to be created. Each account can have different "paranoia" settings. So, for example, you can set the security level to maximum for your 8-year-old, but relax the setting for your 15-year-old



You need to remember that these software are still not perfect, and chances are that some cleverly disguised adult content *might* get through.

However, what's more likely is that a lot of innocent content might get blocked. For example, Web pages that talk about "breast cancer" might be blocked because of the word "breast"; sites that offer "sex education" will definitely be blocked

Thankfully, most parental control software allow you to administer the browsing habits of your children, so not only can you see what sites they were trying to visit (even by accident), you can also approve any sites that were inappropriately blocked! The pros outweigh the cons a million to one in this case, and if you have Net-savvy kids, we really recommend that you install a parental control software



Illustration Chaitanya Surpur  
Text Robert Sovereign-Smith







**102** Life In A USB Nutshell



**106** The Brightest Bulbs in Town



**120** Life @ 24 FPS

# Digital Business

How Technology Can Help Your Organisation

## Case Study

# A Step in Time...

**The workings of a little shop demonstrate how tech—at every stage of evolution—can help business productivity**

Philip Malayil

**M**unshi Khancha Market in Vadodara (Gujarat), the royal city of the Gaekwads, is far removed from any signs of royalty today. Its bustling alleys are crowded with people and innumerable shops butting out from every wall. From nine in the morning until nine in the evening, the place is a retailer's paradise, at least in terms of the sheer number of customers who pass through. But as crowded is the competition: you cannot sell anything the guy next door doesn't have.

In the midst of such a crowd of opportunities and competition lies the story of a 10-foot-by-6-foot retail outlet, Welcome Store, and its founder Satish Uttamchandani's visionary use of technology. A typical shop that stocks FMCGs, dry fruits and cosmetics, among other items of daily use, this outlet has oodles of technology being used to ease its various operations.

## Number Crunching

Back in 1983, Uttamchandani heard about a device called the calculator from friends who had been to Singapore. In the wake of reports that this machine, being startlingly accurate and fast, would reduce the need for mental math-juggling, he purchased a Casio 100. The simple advantage it brought about in speedier customer billing, especially during peak hours, was the fillip for Uttamchandani to explore the role technology could play in his business.

As he studied the brochure that came along with the Casio 100, he saw one with a printer. Three months later, he ordered a piece. This one also gave a printout of the grand total of all the calculations done on it in the course of a day (i.e. daily gross turnover), thus initiating his entry into the world of machine-generated reports.

## Coding Products

Early on, Uttamchandani had realised that time saved is money earned. A simple example was the salesman who would have to leave the sales counter at 7:30 pm every day to replenish items on the rack. Were he to remain at the counter it

would mean more sales, especially during peak seasons such as Diwali. After the shutters were down, one day he and his team mulled over possible solutions to save time on the rack filling task every day.

They decided to numerically code 150 of the fastest-moving items among the 1,200. Also, alphabetically-coded



Imaging: Shrikishna Patkar



labelling stickers were affixed on the racks and a similar rack was replicated at their godown (warehouse). The refill list could now be categorised rack-wise. Thus, on a refill trip to the godown, each rack would have to be visited only once. Making a list of out-of-rack and out-of-stock items now took 90 minutes less, which meant more time for the sales counter.

### Simple Products, Smart Use

While this was a process upgrade, the next technology upgrade came in the form of a calculator that displayed sub totals. While a customer was purchasing goods, his sub total (amount till the last purchase) would be read out to him if required. He could thus budget his purchase, and this pleased the more budget-conscious shoppers at Welcome.

In 1987, a company called Bradma introduced a programmable printer. This was the next obvious buy for Uttamchandani. Apart from being able to give his customers a printed and itemised bill (name, price, amount for each item and grand total), there was hot-key access to the 20 hottest-selling items—meaning these could be keyed in with one stroke—thus speeding up customer turnaround time. Daily sales reports could be generated, too. Two of such printers were soon added to the store's "IT resources."

It was in 1991 that these gave way to the Bradma Cash Register. Memory increased to 300 items, and purchase price of products could also be stored. Margins increased on account of this simple utility: different wholesalers would quote different prices, or the same wholesaler would quote different prices at different times. Because of the facility to cross-check at the turn of a key, purchases became cost-effective.

The 300-item-memory limitation was bypassed by the purchase of another next-gen cash register with an additional card as expanded memory. But since the memory was volatile, a power failure meant having to reprogram it, which took six to seven days.

### Enter The PC

Uttamchandani has a simple philosophy—time wasted is money lost—so when he first heard of computers, it was the non-volatile nature of the memory that attracted him: reprogramming

**When Uttamchandani first heard of computers, it was the non-volatile nature of the memory that attracted him**



Rack replicated at the warehouse

would become a thing of the past! In 1993, the PC arrived at Welcome Store. One comprising a 286 processor, a 40 MB hard disk and a green-tone monochrome monitor replaced the cash register.

The first D-Base program for billing and inventory control did not impress Uttamchandani. He had a simple reason: 857 was the code for Lux soap. Two bars were billed by the instruction 2\*857 followed by [Enter] in the case of the cash register. In the software, the same process meant the following key sequence:

```
857
[Enter]
2
[Enter]
```

Two keystrokes of [Enter] for every item meant precious customer turnaround time! Within a week, Uttamchandani decided to change this. He contacted his friend, philosopher and guide - Padmanab Desai, a computer expert who also teaches MCA students. At eleven in the night, Uttamchandani landed up at his doorstep, and sat through the night till the change in input had been implemented.

But as the business grew there was obvious crowding at the store's single billing terminal, so the next step was to procure another machine and set up a LAN. Novell 2 was the program he used for this. But the cash drawer remained one, and was operated in sequence according to the billing cycle: whoever was processing a bill would operate the cash drawer, while the other person would wait to access it. At the end of the day, the "cash in hand" reading on the system had to tally with the cash in the drawers.

While this took care of billing, certain shortcomings were soon realised. There was the need to consider different sales prices for product sub-categories, generate stock statements and rack filling lists, and re-order reports.

### The Need To Upgrade

In 1996, a software upgrade using Clipper and C+ was completed in a 90-day timeframe by Vadorada-based Infosoft company. The salient features of the improvement were Stock Validation Control (a user would not be able to bill a sale without "stock in hand" or placing an order for purchase); cash in hand report; rack filling report; re-order list categorised according to supplier; outstanding receipts and payments report; and purchase order generation —this was updated even for instant purchases (those made even while the customer was waiting for it).



Smart Working is the way for Satish Uttamchandani



The old hardware could not keep up with this upgrade, and the PCs soon took on 486 processors and 16 MB of RAM. Novell 3.11 ran the LAN.

Soon, the first Pentium came along. The first machine Uttamchandani got had two hard disks—one was a mirror disk for backups. The operating system changed from MS-DOS to Windows NT, but the software remained the same. A Paragon 36 dot matrix filled in for the printing tasks.

The 1996 upgrade had taken care of the requirements of multiple-drawer cash transactions and banking transactions. In 1999, Uttamchandani started off with an Oracle database application. By the middle of the year, he opted for Microsoft's SQL Server. Delphi was used for the front-end. The entire application development took two years, and was completed in December of 2001.

### The State Of The Art

At the current level of evolution, the key benefits of Uttamchandani's system include:

'Multiple cash drawer monitoring: transactions from all three drawers are accounted for in real-time, and cash-in-hand is a password-protected option.

'Rack filling report: location-wise reports generated for each of the 145 racks, which means time savings since the rack refiller has a list of not only



Tech support at the Welcome Store

items required, but also the exact shelf in the warehouse from which it has to be picked up.

'Real-time inventory assessment: three boxes at the bottom of the sales screen displays the current stock of the item, and the location of the item in the warehouse and the shop.

'Re-order report generation.

'Expense register: all petty cash dealings are maintained here.

'Mirroring of bank account.

'Multiple sales screens: "simultaneous" billing of two or more customers because of the "minimise" option: one customer's bill process can be minimised and put on hold while the next one is being processed.

'A database of top customers and profits generated from each.

'Charting of sales and profits for analysing sales trends and forecasting.

'User privileges can be defined and password protection assigned for different registers such as purchase, expense and cash drawer reports.

### On To Telecommuting

Tech-savvy though he was, it was only in early

### Tech Armour at Welcome Store

- Three desktop computers with P4 processors
- Two 9-inch colour monitor and one 15-inch LCD monitor
- One laptop
- Two Epson Printers
- A GSM Modem
- A 100 Mbps LAN switch
- A CAT-5 cable
- Total cost: Rs 1,40,000

2006 that Uttamchandani got himself a mobile phone. His reason: any technology should help in saving time or money, otherwise it is pointless. With the help of a GSM modem, a SIM card, and Real Time—a software he got free because of his offer to run it on a trial basis—Uttamchandani can now access all sales and purchase reports on his cell phone.

Opting for a "200 SMS free" plan, he decided, was the best bet. The most important information is the outstandings due and payable, categorised customer or supplier-wise. Apart from that, total sales, profits categorised date/month or yearly, and the latest purchase price of any item with its date of purchase and supplier is available on an SMS, thus giving him much-needed mobility while being in command and control of a business which, by its very definition, demands physical presence.

### Tech Not For Tech's Sake

Uttamchandani used this freedom to overcome the limitations of a counter-sale/cash business which, in the Indian context, requires the presence of the proprietor who could only be relieved by a family member, thus requiring at least two persons from the family to be fully occupied. While technology has freed Uttamchandani's son to concentrate on his career with an MNC, it has granted Uttamchandani the leeway to undertake other ventures—such as manufacturing of a petroleum jelly, and also the time to pursue his hobby of interior designing.

Another advantage of systematic data processing was capitalising on the market research requirements of large corporations. For example, a multinational company wanted to buy three years' sales data in nine categories of soaps, which he could give them at the stroke of a key. He made a similar deal with a market-research organisation in town. His tech initiatives have now generated another revenue source for him.

Also very popular is Welcome Store's customer loyalty program. Customers are tracked on the basis of their annual and monthly billing, and profitability rankings are developed for the top customers. Annual prizes are given away depending on a customer's rank.

Welcome Store is a classic example of the possibility of technology deployment even for a small setup. Tech is certainly a business productivity enabler even for such stores. Systematic inventory management in this little retail outlet not only proved to be a valuable tool in hedging against typical business risks, but also opened up vistas in data mining and business expansion. ■

philip\_malayil@thinkdigit.com



# Life In A USB Nutshell

**Must we really wait a few more years for anytime access to our applications?**

**Nimish Chandiramani**

**T**o most people, computing on the go means investing in a laptop, PDA, smart-phone, or any such mobile device that lets one carry one's data and applications along with them. This is all very well for big corporates who can afford it, but what of the common businessman? In a SoHo or Small Business, you can't really be expected to buy a company laptop for everyone who needs it and not feel the pinch, can you?

The ultimate solution to this problem will be on-demand computing—when we'd sit in front of any PC, anywhere, and with the digital equivalent of yelling "Gimme!", have all our applications and data at our beck and call. Of course, there's still a few years to go before that.

But strangely enough, most of us don't even realise that we *don't* need to wait for the advent of on-demand computing—we've got the solution to these woes in our hands already! Many people carry their data around on a USB stick—presentations, documents, spreadsheets, you name it—why not carry programs too? Portable Applications are built for the sole purpose of being run off a USB stick—no installation, no

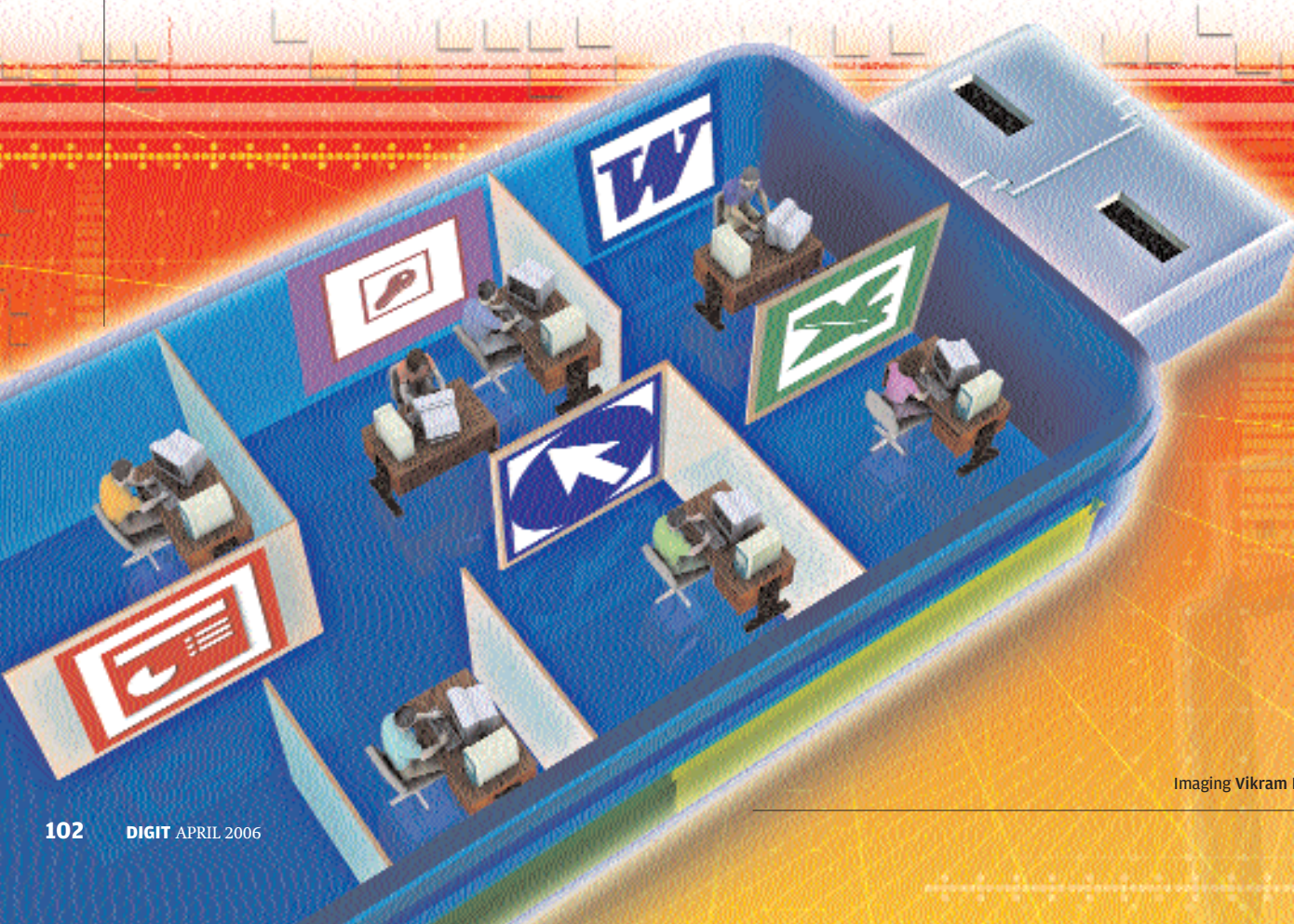
writing settings to anything other than its own folder, and best of all, nearly all of them are free.

All you'd need then would be access to any PC with a USB hub, and you've saved yourself at least Rs 20,000!

## The Demands

Finding the best portable application for your needs is all about balancing size and features. Your first consideration is that the application should not write any settings to the host computer—you don't really want to leave your mark anywhere. The next priority is size—you'd rather have several small programs rather than one that hogs all the space. After all, even 512 MB USB drives can get full alarmingly quickly, and the more room you have for our data, the better. Smaller applications do tend to have fewer features, but let's admit it—few of us use *all* the bells and whistles in most software anyway.

So it's decided: you go out and buy a 512 MB USB drive (this will cost you about Rs 1,650). You should remember, however, that all the applications need to be crammed into 200 MB of space—the remaining 300-odd should be kept free for data. Small size is a priority, but as far as possible, you don't want to compromise on features. You also have to take into consideration the



Imaging Vikram Kathare



possibility that the data you carry on the drive will be shared, so all programs must work with all common file formats, where applicable.

And so begins the hunt.

### The Office Suite

While there are plenty of office suites out there that could even fit on a floppy disk, hardly any of them have support for the ubiquitous .doc format, leaving only one choice: Portable OpenOffice.org. Right from its excellent support for all common MS Office formats, to its MS Office-like interface that ensures that its users don't feel like lost sheep, Portable OpenOffice.org is the office suite you want to carry around with you. It weighs in at 144 MB, taking up a huge chunk of our limit, but when you consider that it gives you practically everything that your current 500+ MB (and very expensive) installation of MS Office does, it's worth it.



**If all you need is something to write and to edit documents on, the 15 MB AbiWord is one alternative worth considering**

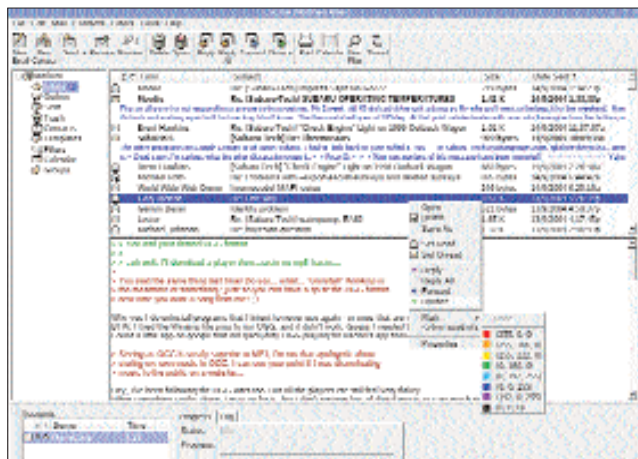
### The Word Processor

There are loads of people who install whole office suites where a program or two would have sufficed, but even if you don't need an entire gaggle of office applications, you will need a good word processor—enter Portable AbiWord. AbiWord has a look and feel similar to Microsoft Word's, and offers nearly the same features. So if all you need is something to write and to edit documents on, this 15 MB alternative is one worth considering.



### The E-Mail Client

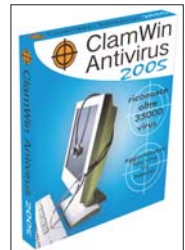
On one hand, there's i.Scribe, a small, seemingly simple e-mail client that fills up only 1 MB of space. It even comes with its own Bayesian spam filter, and is extremely light on system resources. It's a stripped-down version of a commercial product called InScribe, and is limited to only one user profile and one user filter.



At the other end of the spectrum is Portable Thunderbird, which brings to the USB all the features of Mozilla Thunderbird—e-mail, internal support for RSS feeds, a spam filter and a spell-checker. On the flip side, it occupies 9 MB.

### The Anti-Virus

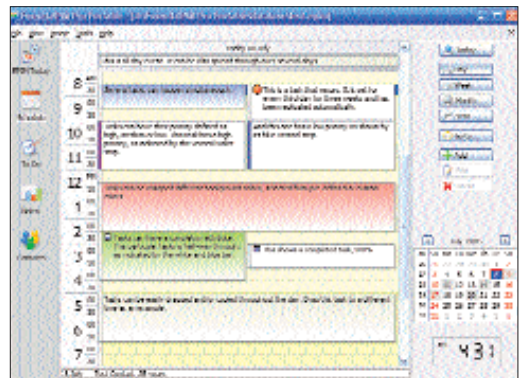
Now you *could* be safe in assuming that you're connecting your USB drive to a clean PC, but it never hurts to carry an anti-virus with you—just in case. ClamWin is a free, open source, 18 MB anti-virus that comes from the ClamAV team, who have been developing the Clam anti-virus engine since the days of DOS. Getting it to work off a USB drive does take some time though. You need to first install it to your current PC and follow the instructions in the manual to set it up for USB drives. Luckily for you, we've done the dirty work, and you'll find a ZIP file on this month's CD, which you just need to extract to your USB drive.



Remember, it isn't a real-time or on-access scanner, so you will need to start the program and choose the file/s you want to scan.

### The PIM

For busy individuals who need to keep track of their tasks and schedules, EssentialPIM is a very useful Personal Information Manager (PIM), which looks a little like Outlook's PIM side. You can use it to create to-do lists, schedule meetings and appointments, manage contacts, and leave little notes to yourself—just as you would do in Outlook, and the famil-



### Some Homework

There are applications that boast about being portable, and then there are more modest applications that don't talk about it so much. For example, you'd think that Winamp would be tied to one PC at a time, right? Copy the Winamp program folder to a USB stick and try to run it from a PC that doesn't have Winamp, and surprise, surprise—it's portable! So if you're ever in the mood, go ahead and see if a program you need is portable. And tell us about it, too!

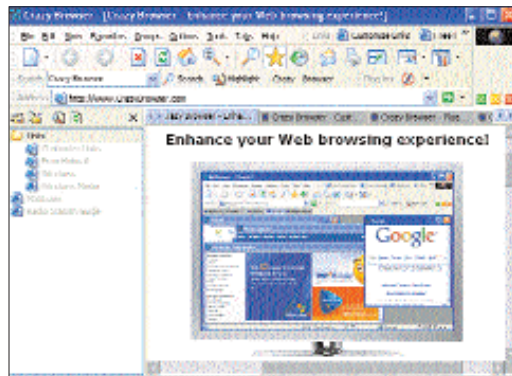


ilarity of its interface means that you need hardly spend any time getting to grips with the software itself.

## The Browser

There are only three browsers worth mentioning today—Internet Explorer (IE), Firefox and Opera.

For IE users, there is Crazy Browser, a 500 KB browser that seems to be a heady mix of all three—it uses the IE engine, but also brings in some cool features from the other two, like tabbed browsing,



plug-ins (à la Firefox extensions) and mouse gestures (quite similar to Opera's). It even has its own pop-up blocker and RSS reader.

The same open source community that's responsible for Portable OpenOffice.org and Portable Thunderbird also gives us Portable Firefox, which is just that—a fully functional USB version of the Firefox browser, including support for installing the insanely popular Firefox extensions, but at 17 MB, you're going to be crunched for space.



Unfortunately, Opera hasn't yet released a portable version of their browser, but a few intrepid users have tweaked the existing Opera to make it capable of being run off a USB drive. You can download it from [www.opera-usb.com](http://www.opera-usb.com). Remember, this is not an official release by Opera, so if things go wrong, you're on your own.

**While Adobe Reader is the *de facto* for reading PDF documents, it's bulky and is a resource hog. Overcoming both these nags is Foxit PDF Reader**

## The Media Player

Work or play, chances are you can't escape without encountering a sound or video clip that needs viewing. Since we can't guarantee that the PC of the hour has all the codecs necessary for us to open the files, we've decided on VLC Player, which can play nearly any audio and video file in existence, and doesn't require any codecs to be pre-installed on the system. It's a tad costly at nearly 35 MB, though.



Another option is MPUI, a GUI for the popular open source MPlayer. This, too, doesn't need any codecs to be installed on the PC you'll be working on, and it's a lot lighter at 7 MB. In its current stage it's a little buggy, but definitely worth the 28 MB you'll save.

## The Image Viewer

IrfanView supports a huge number of image formats, is light on system resources, easy to use, and can even convert images to different formats with some really good compression ratios.



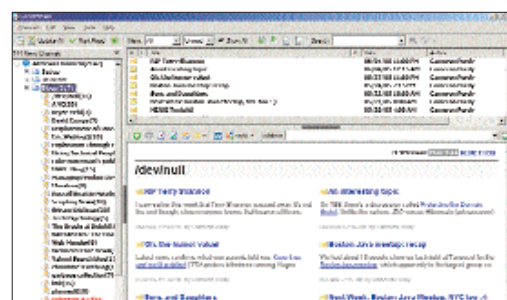
## The Newsfeed Reader

You still need to keep in touch with the latest news when you're on the move, and what better way than with a good RSS feed reader? GreatNews is a really good feed reader which even integrates browsing via the IE engine. It also comes pre-loaded with settings for many great sites, including a vital *Dilbert* comic feed.

You can view the feeds in any style you choose—be it simple text or a newspaper-like appearance. And at 3 MB, it's more than you'd hope for.

## The PDF Reader

While Adobe Reader is the *de facto* for reading PDF documents, it's bulky and is a resource hog. Overcoming both these nags is Foxit PDF Reader. It occupies only 2 MB of space, and is so light that it even works even on PCs that are a couple of



## Getting Your USB Drive To Autorun

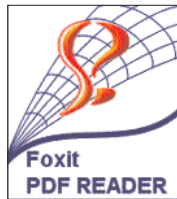
On PCs with Windows XP and Service Pack 2, you can bring up an autorun menu (just like the one for CDs) for your USB drive, too! This is how we made an autorun item for PStart, the portable Start Menu:

- 1 Open Notepad and type in the following text:  

```
*[autorun]*
*open=PStart.exe* (This is the application that you want to run through the autorun menu)
*action=Open your Start Menu* (This is a description of the action that will be performed)
*icon=PStart.exe* (This is the icon which will be displayed in the autorun menu)
```
- 2 Save the file as \*autorun.inf\* in the root of your USB drive.
- 3 Now, every time you plug the drive into a PC with Windows XP SP2, you'll get an autorun menu that will include the action you specified in autorun.inf.



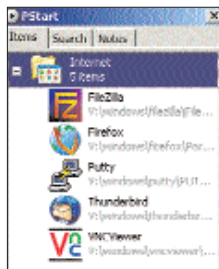
years old. It also looks just like Adobe's Reader, so once again, you aren't going to feel lost. We recommend this not only as a portable application, but as a credible replacement for Adobe Reader altogether.



### The Start Menu

It isn't fair that road warriors shouldn't have the benefit of a Start Menu, is it? PStart is a program that sits in the system tray and gives you your own menu that lets you choose which application you want to run. It even hunts down executable files on your drive, so you don't even need to make any manual entries—once you've put all your applications on your drive, just select the "Scan for Executables" function to create your own portable start menu.

You can find all these and more portable software on this month's CD and DVD.



### Packing It All In

Once you've decided on what you're going to put in your drive, installation is usually simple enough. Most of these applications come as ZIP archives, so all you need to do is extract them to the drive.

For the ones that come with installers, you could either install them directly to the drive, or install them to your Windows drive and copy the program folder from "C:\Program Files" (or wherever you installed the application) to the drive.

### The Next Step—The Mobile Geek

We have, of course, assumed that you'll be working on PCs with Windows loaded on them, so you'll still have to bear with whatever settings the owner of the PC has kept in store for you. If, however, you wish for the same computing experience on every PC you ever sit at, you could go a step further and put an entire OS on the USB stick! We're talking about Damn Small Linux (DSL), a 50 MB Linux distribution that fits more than neatly into a portable drive (find it on this month's DVD). "It's probably got no GUI," you might say, before we tell you that it does come with the FluxBox window manager, as well as a host of applications including the über-light Dillo browser. On the hardware front, you will need a bootable USB drive (most drives today are), and the motherboard of the PC you're working on must support booting from a USB device.

Of course, you will have to learn the basics of Linux and get used to the user interface, but once you do, every PC you ever work on will be like your own.

So with everything so eerily close to the ultimate vision of on-demand computing, are you still going to wait? ■

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# The Brightest Bulbs In Town

**In a world of cut-throat competition and low attention spans, a projector is the most potent weapon to turn your ideas into business deals. We put eight business projectors to test**

**Nachiket Mhatre**

A picture speaks a thousand words, and it is imperative to have a projector that says all the right things about your sales pitch. People make the common mistake of believing that you can get away with a business projector of average quality and less-than-perfect rendition; after all, PowerPoint presentations and Excel sheets do not need the precision commanded by the more expensive Home Theatre projectors. That is a grave misconception. Just like a hypnotist needs total silence to get into the psyche of his subject, your projector, too, should be free of any imperfections and artefacts that can break the spell and reflect badly on your presentation.

Fortunately for us, the ongoing war between the DLP and LCD projection systems translate into better and more advanced projectors at reduced prices. What was high-end a couple of years ago has now trickled down to the budget segment.

Projectors today are based on the DLP, LCD, LCoS and CRT technologies. With the LCoS and CRT projection systems out of the scope of this test due to their astronomical costs, choosing a business projector boils down to a binary choice between the DLP and LCD systems.

Current-generation DLP and LCD projectors have benefited from refinements of key technologies, giving them better colour accuracy, bright-

ness, contrast, and resolution, which hitherto were the sole prerogative of people with deep pockets. That's precisely why we at the Digit Test Centre have put these projectors through a completely revised test process to bring forth the true picture—warts and all.

## **Understanding The Features**

A proper understanding of a projector's features and their relevance to your requirements is vital. It is imperative to not be swayed by specmanship, gimmicks and features that look good only on paper, but do not justify the extra cost they entail.

### **Aesthetics**

First impressions count. It makes a difference when you whip out a well-sculpted projector, as opposed to something with the aesthetic appeal of a brick.

### **Resolutions**

Featured in this projector shootout were SVGA (800x600) and XGA (1024x768) resolutions.

Choosing the optimum resolution is dependant upon the kind of tasks you'll be using the projector for. SVGA is the way to go if you'll primarily be using the projector for graphs, movies, pictures and presentations without intricate detailing. However, if your projection needs include fine text, computer desktop projection and large spreadsheets, it would be prudent to opt for the more expensive XGA projectors.



The immediate advantage of the XGA projector is the small pixel size of the projected image, which lends it a smooth effect as opposed to the blocky SVGA detailing. Also, due to the increased number of pixels, the amount of aliasing (jagged edges) in geometric shapes is reduced.

All display systems except the CRT technology are plagued with the problem of "Native Resolution." This, essentially, is the default resolution at which the projector will give the best image quality. Even though it is possible to scale an SVGA projector to display at XGA resolution, this will severely affect image quality. Another important factor is that DLP projectors have an inherent edge over LCDs because they generally project a smoother picture and do not suffer from the grille artefacts seen in LCD projection systems. However, LCDs are known for their sharpness and more precise focusing—but this very attribute leads to more pixelation in movies and pictures.

### Brightness

As a rule of thumb, it is advisable to get the brightest projector that your budget allows. Ambient light has a significant effect on the brightness. As far as totally dark rooms are concerned, you can get away with projectors with up to a 1000 lumen brightness rating. Projectors with a 2000 lumen rating are suitable for small conference rooms, where a little ambient light is tolerable. High-performance projectors with 3000 lumens are ideal for reasonably bright ambient lighting conditions. Such projectors are your best bet if you happen to travel around to different venues, where the audience, screen size and ambient lighting conditions vary. These will save you the embarrassment of poor visibility due to washed out images.

If, however, you want to cater to huge conference halls and auditoriums, you'll have to consider the ultra-bright range of projectors that starts at 3000 lumens and goes well over 12,000! You can even try using high-gain screens, which can substantially increase the existing brightness levels.

At the end of the day, you must realise that as brightness levels increase, the precision of black and greyscale levels decreases. A projector cannot reproduce black well in bright ambient lighting conditions. So if image accuracy is what you're looking for, we suggest a grey screen paired with a good DLP projector and zero ambient lighting.

When it comes to light efficiency, an LCD projection system traditionally has the upper hand over the DLPs. Also, the saturation levels of the colour rendition of LCDs are better than DLPs and hence their perceived brightness is much higher.

### Contrast Ratio

The contrast ratio is the least important feature from the point of view of a business projector. It refers to the ratio of the dynamic range between the darkest black shade and the absolute brightest white. A projector with a high contrast ratio is capable of large number of colour gradations and grey scales. Business applications such as simple presentations, text, and graphs will not show any improvement on high-contrast projectors. But movies will. DLP projectors easily outclass LCDs when it comes to accurate black-level rendition.

**When it comes to light efficiency, an LCD projection system traditionally has the upper hand over the DLPs**

This is due to the reflective nature of the DLP, which allows the tiny micro-mirrors to completely divert the light away from the lens, to render perfect blacks with ease.

### Weight

Business projectors need lightweight construction along with portability. DLP projection systems are generally lighter than their LCD counterparts, due to the compact digital nature of a single micro-mirror device at its heart, as opposed to the popular three-panel implementation found in most contemporary LCD projectors. However, portability doesn't come without its problems; the catch is the lower brightness associated with compact and lightweight projectors.

### The Long And Short Of It

Different projectors ship with different kinds of lenses—short and long-throw lenses. We cannot comment about which is better because they cater to different projection needs, and are more about convenience than image quality.

A throw distance is the measure of separation required between the projector and the screen to project a certain area of image. Projectors with



BenQ MP-610

standard lenses need approximately two feet of distance between them and the screen to project an image of one square foot.

Short-throw lenses, with their wider light dispersion characteristics, are able to project very large images over short distances. Long-throw projectors, on the other hand, are optimised with narrow dispersion characteristics to project images over large distances without losing much brightness. Most high-end projectors come with replaceable lenses that let you convert them to short or long throw on the fly. A short-throw projector is required in small conference rooms that don't have enough space to display large images. Long-throw projectors are useful in large auditoriums, where the projector needs to be placed well behind the audience.

### Zoom Lenses

A zoom lens is a feature included in most projectors for convenience. A typical 1.2x zoom lens will give you a 20 per cent boost in image size, making it very handy in cramped spaces. However, this feature is pretty much useless if the zoom offered is digital, as opposed to the ideal optical zoom. Using digital zoom will only degrade the image quality.



### Projection Modes

It is desirable that the projector possess varied projection modes to accommodate ceiling mounting and rear projection orientations. Usually, a ceiling mounted projector needs to have vertical inversion of the image to counter the upside-down nature of ceiling mounting. The rear projection modes require the projected image to be inverted horizontally.

### Keystone Correction

This feature is used to correct the trapezoidal distortion in the geometry of the projected image. It happens when the projector isn't directly in front of the screen. Ideally, any form of keystone correction should be avoided, because it stretches and skews an image for correction, thus bringing about degradation of image quality.

### Number Of Preset Display Modes

These come in handy when you need speed and convenience over quality. Presets allow you to flick between the high-brightness Presentation mode and the totally different setting required for movies.

### The Remote Control

A remote control with a full range of controls is not just a feature but a necessity when it comes to a projector, considering the nature of its placement. A remote-equipped laser pointer and mouse is a welcome bonus, which can make presentations a lot easier.

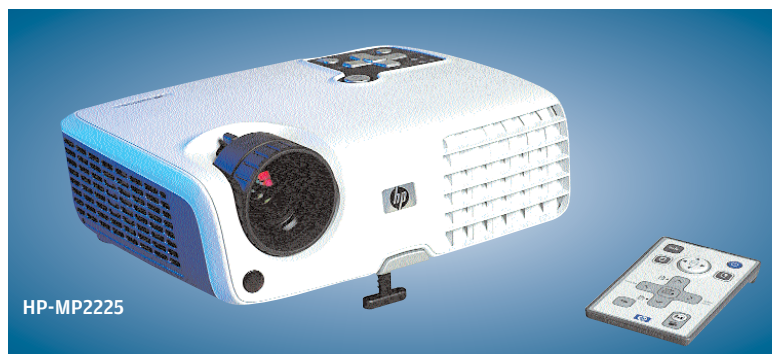
### The Contenders

Of the eight projectors, three were XGA (1024 x 768) and the rest were SVGA (800 x 600). We classified them into two categories based on their native resolutions. The present lot reflect the improvement in LCD and DLP projection technologies, which have blurred the lines between their stereotypical strengths and weaknesses. But still, they weren't without their share of faults that low-cost projectors are notorious for.

### Features

#### SVGA

Their low price notwithstanding, these were surprisingly well-built, with an impressive list of features earlier available only on the pricier models. Today, you can buy a projector with a 2000 lumens brightness rating in this entry-level SVGA bracket.



## How We Tested

### The Test Bed

The test bed had an Intel Pentium 4 3.2 GHz processor, an MSI 875P NEO motherboard, 1 GB DDR 400 SDRAM and an ATI X850-based video card. Windows XP Professional with Service Pack 2 and 32-bit colour depth was used, with the Windows and ATI-based graphics enhancements and presets turned off.

### Evaluation Pre-Setup

The tests were carried out in absolute darkness with zero ambient light. In order to keep the evaluation process fair, we maintained a uniform size of the projected image. Having a fixed distance would have been unfair, since projectors have different throw distances in accordance to the room size specifications they are built for. Zoom was set to zero, and great pains were taken to do away with keystone correction altogether, unless unavoidable, because doing that reduces image quality. DVI interconnects were given precedence over D-SUB wherever available. We gave the projector lamp 15 minutes more than its rated warm-up time to ensure pure colour rendition, after which the pre-test calibration was executed. All projectors were tested at their native resolutions with a default refresh rate of 75 Hz. Attempts

were made to rectify tracking or phase errors, if any. We avoided using the default projector settings and instead calibrated each projector to give the best fidelity possible. A white projection screen 90x72 inches large was used for the tests.

### Features

Here we focused on key features such as brightness, contrast ratio, optical zoom ratio, keystone, preset modes, fine picture and colour temperature control etc. Interconnect availability such as DVI, D-SUB, and S-Video, was also considered.

Another key feature is the weight and dimensions of the projector, as business applications need to consider portability due to need for constant mobility. Special features such as USB control port, an inbuilt mouse, and remotes with Laser pointers were given additional points.

### The Tests

#### DisplayMate Video Edition

DisplayMate is a leading video evaluation tool, which employs accurate proprietary test patterns to evaluate image quality, as also to reveal defects in video displays. We tested the projectors using 26 relevant parameters such as contrast, brightness, focussing, resolution, moiré, colour gradation accuracy, purity,

streaking, black and white levels, blooming, ghosting, flicker, etc. This gives a definitive idea of the resolution accuracy and colour rendition, and also uncovers serious flaws which could easily be missed otherwise.

### Picture Quality

Here we used our reference high resolution bitmaps and Adobe Photoshop PSD files to gauge the colour rendition and the detail levels. The test images consisted of a variety of real photographs and flat-shaded ones with less colour complexity. Each image had a characteristic feature which formed the basis for benchmarking. These were instrumental in gauging grille effect, colour gradation discrepancies, impurity and most importantly, the black level detail of the projector.

### Presentation Test

This test included a PowerPoint presentation with pictures, graphs, and text of varying font sizes and colours. Our main focus was the readability of normal and inverted text, with the graph and photo quality coming second.

### Animation Test

For the animation test, we used professional reference grade, imported DVDs of *Shrek* and *Spirit*. *Shrek* was used to test the intensity, colour-scaling, and the ability of the projector



**As expected, the DLPs totally trounced their LCD counterparts when it came to contrast ratio**

On the image size front, we had the Sharp XR-10S and Epson EMP-S3 capable of projecting an image up to 300 inches large, while the Acer PD-115 and Hitachi CP-RS55 managed only 200 inches. What's notable is the fact that we had LCDs such as the Epson EMP-S3, which managed 1600 lumens with a 135 W lamp rating, while DLPs such as the Sharp XR-10S offered a 2000 lumen output at 270 W consumption by the lamp. The LCDs are clearly more efficient when it comes to the brightness-to-wattage ratio. All the projectors we tested had a native 4:3 aspect ratio, which can be scaled to the 16:9 required by DVDs—at the loss of screen space.

As expected, the DLPs totally trounced their LCD counterparts when it came to contrast ratios. All the DLPs in this segment sported a high contrast ratio of 2000:1 as opposed to the measly 500:1 and 300:1 offered by the Epson and Hitachi respectively. As a fallout, the black levels offered by both the LCDs were below par, to say the least.

When it came to the aesthetic appeal of the projectors, the Hitachi CP-RS55 exudes class with its silver finish and a slim profile with contoured edges. Its discreet buttons and everything placed flush with its body goes well with the Hitachi minimalist theme. This was, beyond a doubt, the most appealing projector we tested. Even though the Sharp XR-10S was the bulkiest of the lot, it still had a brilliant design approach making good use of contours and bevelled edges to balance its bulkiness.

The BenQ MP610 is the aesthetic equivalent of a brick; an ugly brick at that, with a cheap, boring black finish. The lines, edges, button placement

to reproduce intricate details and coloured lighting effects. The *Spirit* DVD had a flat-shaded animation that helped us to focus on a projector's absolute colour accuracy. Any colour imperfections and gradation problems were conspicuous with this DVD.

### Movie Test

A movie test is significant because it transcends the major differentiating factor of resolution, because movies themselves have a fixed lower resolution. This allows us to evaluate the absolute image quality irrespective of the native resolution of a projector creating a level-ground across all segments.

No professional video test can be complete without the *Saving Private Ryan* and *Gladiator* DVDs. We had extremely rare, limited signature editions of the same, which feature phenomenal mastering quality, absent on the regular prints. *Gladiator* can pretty much bring any display system to its knees with the amount of resolution detail it holds, and features very hard-to-render scenes with great colour complexity. *Saving Private Ryan* is the industry standard benchmark when it comes to gauging the black-level detail,

and its wide array of muted colours stress any video system when it comes to accuracy of fine colour gradation.

Both of them have certain key areas where the colour wheel effect of DLPs can be easily apparent, if present. Another DVD used to test the projectors was *Corrs Unplugged*, which has close camera angles of the performers. We used it to check the skin tone accuracy of the projector. Its muted colours with great black scaling are instrumental in loading the DLP projection system enough to show their inherent flaws. This also has a high dynamic range of lighting in each frame, which amplifies any colour noise and intensity scaling problems.

However, the most significant was the *Corrs Live in London* DVD, which has the most amazing colour complexity you'll ever find, with a rainbow spectrum of volumetric lighting, lens flares, halos and an onstage back panel with ultra-bright psychedelic lighting effects. There are passages where the screen goes into extreme intensity of colours replete with a staggering array of colour blending. In fact, just one projector was able to give acceptable levels of colour accuracy with this DVD!

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Hitachi CP-Rs55

and the grille effect surrounding the body reveal a total lack of aesthetic sense.

The oddly-shaped Epson comes across as trying too hard, with its overactive shapes and contours. The Acer PD-115 is pretty average in the looks department, with nothing substantial to write home about—but tolerable nonetheless.

The build quality of the Sharp and the Hitachi was excellent, which can be felt with the smooth and progressive nature of their focus rings. The quality levels were excellent, with a great tactile feel to the buttons. The BenQ MP-610 had the worst build and finish levels of the lot, with a cheap feel to the plastic and an absolutely dreadful jerking feel to its focus ring. This one really feels built to its price.

The Hitachi CP-RS55 was the lightest of the bunch at 2.2 kg, as opposed to the Sharp XR-10S weighing in at a massive 3.9 kg. This completely defies the notion that LCDs are bulkier when compared to DLPs.

The lack of any optical zoom on the Hitachi can be attributed to its weight-saving measures. It only has digital zoom, which must be avoided at all costs.

The Epson EMP-S3 has the highest optical zoom ratio of 1.35:1. All the projectors had the essential set of features—projection modes, keystone correction, preset modes, etc. The Sharp led the pack as far as OSD usability and features were concerned. We were impressed by the wizard-like interface it used for troubleshooting, which rectifies the display according to the symptoms you specify. This will enable even a complete layman to tweak his projector to perfection.

The Sharp had the most comprehensive, albeit dull-looking remote, which could have done with better button segregation.

The Acer PD-115 had the best remote of the lot, with colour-coded keys separated intuitively by button shapes and position. The remote can be easily handled in the dark.

The Epson EMP-S3 had the second-best remote, with great button placement—it also offered a thumb-stick for mouse control! The Hitachi's remote was brilliant, but was let down by poor button quality. The BenQ shipped with the least impressive card-type remote, which suffered from a severe lack of buttons. The buttons required a hard push to get registered.

## XGA

The three XGA projectors we received for testing had better build and finish quality, but were lacking on features. Not surprisingly, due to our (approximately) Rs 1 lakh price limit for this test, we could only get the entry-level XGA projectors. Their brightness ratings and other features were thus on par with their SVGA counterparts.

The Sharp XR-10X had the upper hand with an image size of 300 inches, with the Infocus LP-600 and HP MP-2225 coming in second and third respectively, with 268 and 230 inches of maximum projection size.

The brightness of the projectors was on par with the SVGA models, the only exception being the HP at 1400 lumens. The XGA models came with the 4:3 aspect ratio, along with the capability to display in the 16:9 mode. The HP MP-2225 had the best contrast ratio of 2200:1; the 2000:1 ratio of the Sharp XR-10X was similar to that of its cheaper sibling. The Infocus LP-600 had the poorest contrast ratio of 1000:1—surprising, since DLPs are supposed to do better than that.

The diminutive HP was the lightest, weighing in at just 1.1 kg. It was the smallest of the lot with a dual-tone design reminiscent of the Sharp. If portability is the criterion, look no further; they don't get any smaller than the HP projector.

The Sharp XR-10X had the exact same shape, size and build as its SVGA counterpart; the only differentiating factor was the champagne-gold finish this one sported.

But our favourite design amongst these was definitely the Infocus LP-600. Its LCD display panel, aesthetically proportioned contours and button layout all exuded a look that does justice to its price. All these sported excellent levels of build quality, with the Sharp once again beating the competition to it. But it lost out to the lightweight HP and Infocus, which weighed in at 1.1 kg and 2.4 kg respectively. The Infocus, however, clawed back with a class-leading zoom ratio of 1.24:1, with the Sharp and HP following, tied at 1.15:1.

In miscellaneous features, such as projection modes, keystone correction, and preset modes, these projectors didn't disappoint us. The Sharp OSD was unbeatable in this segment too.

The HP MP-2225 disappointed us with its card-like remote, which doesn't bode well for an XGA projector. However, it does offer mouse control, and its keys aren't too bad. The Sharp remote is similar to its SVGA counterpart, which is a shame,



Acer PD115





Infocus LP-600

**SVGA projectors show optical issues such as phase, tracking problems, vertical banding, gradation, colour impurity and characteristic artefacts**

considering the price you have to cough up for the XGA model. The best remote so far is the Infocus remote controller with its chunky build that snugly fits the contours of your palm. Buttons are neatly segregated and arranged on the remote with a lot of air between them. There is absolutely no way you can accidentally press the wrong button.

### Performance

Every projector we tested faced phase problems with varying intensities, with both the Sharp projectors being immune to that artefact. The phase problem, which is optic in nature, affects the ability of the projector to define pixels properly onto the screen. This results in the pixels being rendered with varying brightness, with shifted centres and banding across them. This seriously affects the resolution of the rendered image, and leads to other artefacts such as vertical and horizontal banding. Some projectors had options to adjust the phase, frequency and tracking controls, but still, none of them could rectify these issues. In fact, modern projectors placed a little higher in the price segment come with the ability to automatically correct these problems at the push of a button.

The bottomline is that nothing can substitute for good old precision engineering. If a projector is built to exacting standards, it simply will not have to deal with such artefacts. Such precision was present in the Sharp line of projectors; neither of them had any such flaws.

### SVGA

Since these are the cheapest projectors available in the market, they are built that way too, with the level of engineering precision not being up to the mark. These projectors show optical issues such as phase, tracking problems, vertical banding, gradation, colour impurity and the characteristic artefacts associated with the DLP and LCD projection technologies. However, the overall quality levels are still better than what you could buy in the same segment just a year ago. To our collective surprise, though, the Sharp projector defied all pricing logic and put forth a performance that caught us unaware.

### The Presentation Test

#### DisplayMate Video Edition

Most of the projectors here had issues rendering blacks, and hence messed up the greyscale. The

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Acer had acceptable black levels, but got oversaturated when the intensity was increased. The BenQ wasn't very keen on proper black reproduction and greyscales. All of them had varying levels of colour shift, with the problem being severe with the Epson. Every DLP projector except the Sharp had problems rendering the colour gradations and the blacks, and the subsequent greyscales were plagued with impurities ranging from bluish to red from one projector to another. Even the LCDs weren't spared, with the Hitachi giving better results when compared to the pathetic performance of the Epson.

The projectors with phase problems fared poorly in the sharpness and resolution tests. The Epson's performance in this segment was at rock-bottom levels, because its inherent problems prevented it from rendering any of the test patterns properly. The Sharp was the absolute winner in this segment, followed by the BenQ. The Acer and Epson had problems with focusing and resolution detail at the corners of the screen. The BenQ, due to its lower phase issues, scored very well in the moiré pattern test, while Sharp once again aced the segment with virtually non-existent moiré patterns. The Acer, Hitachi and Epson saw a lot of banding and moiré patterns.

In the colour and greyscale tests, the Sharp yet again dominated the scene. The only place where it faltered was the 16 intensity levels, where it missed one colour intensity test. The LCDs in this segment had a problem with streaking and ghosting artefacts, and this was reflected in their poor scores. The BenQ and Sharp showed great resistance to black and white level shifting, which means they can handle high dynamic ranges much better. Not surprisingly, the colour tests saw the Epson give better results, as colours are the strongest points of LCD projection systems. It was the same case with the Hitachi. The Acer performed miserably in the colour segment, with too much colour contamination and absolutely no gradation accuracy in the 16 intensity levels test. The LCDs performed well in the colour accuracy and purity tests, with the Hitachi coming close to the excellence offered by the Sharp in colour reproduction.



Sharp XR-10X

The brilliant screen uniformity was evident in the Sharp, while all the others had some issues with brightness variation and noise across the different areas of the screen. No noticeable flicker was apparent on any of the projectors. The Sharp aced the difficult ANSI Brightness test, the most amazing thing being its ability to distinguish between 5 per cent brightness and contrast variation, which is even beyond the requirements of the test, while being better than any other projector's capability. The BenQ failed the test due to its inability to render finer black levels. The Epson's resolution and focusing problems were apparent in the Defocusing, Blooming and Halo tests.

### The Movie Test

The kind of high-grade test material we used for these tests are very unforgiving when it comes to colour inaccuracies. DLP projectors being digital in nature cannot produce accurate colour gradations if their image processor isn't fast enough. Every DLP projector had the previous generation DLP engine; only the Sharp was endowed with a state-of-the-art DDR DLP system with a really fast 3x colour wheel as opposed to the 2x colour wheel the others had.

Also, the new fabrication process of its improved DLP chip endows it with excellent colour accuracy and variation across a larger dynamic range. This was evident in its excellent

## Choosing The Right Screen

**Y**ou may buy a Rs 2 lakh projector, but it will not perform as well if you pair it with a cheap screen. As a rule of thumb, 20 to 30 per cent of the projector budget should be allocated for buying a screen to go along with it. Anything less than 20 per cent of the total projector cost means that you are not getting the full image quality you paid for in the first place.

A projector screen, can, in fact, compensate for the shortcomings of your projector. For example, a high-gain screen will compensate for the low brightness rating of your projector, while conversely, a grey screen with high contrast will enhance the contrast ratio and enable your LCD projector to render purer blacks. Basically,

"gain" is the measurement of reflectivity of the projection surface. It is denoted by a unit known as the gain number, which is the ratio of the light reflected by a screen in comparison to the reflectivity of a standard reference white magnesium oxide board. So a gain rating of 1.3 reflects 30 per cent more light. Grey screens used for better contrast have a negative screen gain quotient like .80 gain rating which translates into 20 per cent reduction in gain, but at the added benefit of better black reproduction.

Gain isn't always good, however, as it sees a lot of problems with directionality. Since it has a reflective nature, it significantly reduces the viewing angle of the screen. The problem is more severe on

very high-gain screens with hot spots apparent at the middle of the screen. This makes the screen appear brighter in the centre as opposed to the darker corners.

Quite simply, if your projector is lacking in brightness, opt for a high-gain screen. If it is plagued with low contrast issues, buy a high-contrast screen. Also, high ambient light conditions warrant a high-gain screen, because a high-gain screen will reject omnidirectional ambient light and only reflect the direct projector light.

LCDs generally have poor contrast ratios and suffer at black reproduction; they are therefore well mated with a grey screen with low gain. A DLP, which traditionally has better brightness and contrast, on the other hand, can use both screens effectively.



**XGA projectors quite naturally dominate the image quality benchmarks. They have an upper hand in the picture tests and the text and presentation tests**

performance across all the movie tests, with superior black levels in *Saving Private Ryan*, to richer and more detailed rendering of the *Glad-iator* DVD. This projector consistently offered more detail than the rest of the pack. All the other DLP projectors were faced with colour gradation problems, which made the bright areas of the frame appear blocky with patchy image rendition. This is the case with poor optical performance of the low-end DLP chips. Skin tone rendition was messy, with severe gradation, by the Acer and BenQ in the *Corrs Unplugged* DVD.

The high dynamic colours used in the DVD brought forth a lot of noise from the Acer, BenQ and Epson projectors. The *Corrs Live in London* DVD brought all but the Sharp and Hitachi projectors to their knees—the DVD was pretty much unwatchable on the other projectors. Everything—from the skies to lighting effects—was well below acceptable levels, robbing all the fun from the movie experience.

That's why the rest of the DLPs, namely the Acer and the BenQ, scored dismally in the movie tests. Amongst the LCDs, the Epson was just as bad, with the same problems plaguing it. The noise levels were pretty high in the LCDs as compared to the DLP projectors.

#### The Animation Test

The Acer and BenQ still faced the same colour gradation problems even with the less exacting standards of the animated movies that we tested. The LCDs really showed an improvement in this segment, mainly because they have very good colour saturation levels for increased richness and vibrancy. But the real star of this test was the Sharp DLP, with its brilliant colour rendition and detail levels.

#### Picture Quality

The combination of brilliant colour reproduction paired with pin-point resolution made the Sharp the clear winner in this segment. Its ability to resolve the tiniest detail along with a staggering range of colours was a delight when watching images. Next was the Hitachi LCD projector, which was found lacking only in the resolution aspect, which is very crucial for images. Epson fared dismally due to its issues with phase and colour accuracy. The Acer and BenQ, too, gave a very blocky effect with brighter parts of images.



Epson EMP-S3

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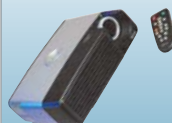




## Scoreboard

## SVGA Projectors

BRAND MODEL	Acer PD-115	BenQ MP-610	Epson EMP-S3	Hitachi CP-RS55	Sharp XR-105	HP MP-2225
Features (Out of 35)	25.34	25.00	23.15	20.12	23.88	24.43
Projection System (DLP/LCD/LCOS)	DLP	DLP	LCD	LCD	DLP	DLP
Native Resolution (Pixels)	800 x 600	800 x 600	800 x 600	800 x 600	800 x 600	1024 x 768
Brightness (ANSI Lumens)	2100	2000	1600	1500	2000	1400
Contrast Ratio	2000:1	2000:1	500:1	300:1	2000:1	2200:1
Aspect Ratio (Native/selectable)	4:3 / 16:9	4:3 / 16:9	4:3 / 16:9	4:3 / 16:9	4:3 / 16:9	4:3 / 16:9
Optical Zoom	4	4	6	6	4	4
Zoom Ratio	1.20:1	1.15:1	6	6	1.1:1	1.15:1
Image Size (Max - Min) (Inches)	60 - 200	35 - 220	30 - 300	60 - 200	40 - 300	24 - 230
Throw Distance (Min - Max Metres)	2.6 - 7.3	1.5 - 8	0.9 - 12.1	2.2 - 7.4	1.4 - 12.1	2 - 9.1
Lamp Power Consumption (W)	200	200	135	165	275	156
Lamp (Hours) (Nominal / Eco mode)	2000 / 3000	3000 / 4000	2000 / 3000	2000 / NA	2000 / 3000	3000 / 4000
HDTV Compatability	4	4	4	4	4	4
Horizontal Frequency (khz)	31-79	31 - 82	15 - 92	15 - 91	15 - 70	NA
Vertical Scan Rate (Hz)	50 - 85	48 - 85	50 - 85	50 - 120	45 - 85	NA
Video Input (S-video, RCA, D-Sub)	4/4/4	4/4/4	4/4/4	4/4/4	4/4/4	4/4/4
Audio Inputs (PC Stereo, RCA L/R)	4/4	4/4	6/4	6/4	4/4	6/4
Speakers (Mono/Auto, W)	Mono, 2	Mono, 2	Mono, 1	Mono, 1	Mono, 2	Mono, 1
Control Terminal (USB)	4	4	4	6	6	4
Weight (kg)	2.3	2.72	2.5	2.2	3.9	1.1
Power Consumption Nominal (W)	250	285	200	240	330	285
Rated Noise (dB) (Max)	31	29	28	38	33	32
OSD Usability (So5)	4	3	3.5	4	4.5	4.5
Digital Keystone	4	4	4	4	4	4
Software CD	4	4	4	4	4	4
Remote Control	4	4	4	4	4	4
Soft Carry Case	4	4	4	4	4	4
Performance (Out Of 50)	23.55	32.21	20.41	30.08	43.47	33.38
DisplayMate Video Edition						
Sharpness And Resolution (Out Of 32)	12.50	21.03	6.18	13.83	27.40	20.25
Horizontal Bar Resolution	1.50	3.63	0.75	2.50	4.25	3.50
Vertical Bar Resolution	2.25	3.38	0.75	2.25	4.25	3.50
Corner Resolution	1.50	3.38	1.00	2.25	4.25	3.50
Focus Matrix	2.25	3.13	1.13	2.00	4.25	3.00
Fine Focus Matrix	2.00	3.13	0.88	1.75	4.25	2.63
Diagonal Resolution Matrix	1.75	3.00	1.00	2.00	4.25	3.25
Moiré Pattern	2.50	3.63	2.25	2.25	4.75	2.63
Screen Pixel Resolution (Out Of 2)	1.50	1.35	0.65	0.95	1.70	1.20
Colour and Greyscale (Out Of 29)	15.80	20.78	16.00	19.00	24.65	19.55
Streaking And Ghosting	3.25	3.88	2.00	2.25	4.25	3.25
Colour Streaking	3.00	4.00	2.00	2.25	4.25	3.25
16-intensity Levels	1.00	2.25	3.25	3.63	3.50	2.25
White Level Shift	2.25	4.00	3.50	3.63	4.25	3.75
Black Level Shift	2.25	4.00	3.00	3.50	4.25	3.75
Red Colour Purity	2.25	3.25	3.00	4.25	4.25	3.75
Green Colour Purity	2.25	3.88	3.75	4.25	4.25	3.75
Blue Colour Purity	2.25	3.75	3.50	4.25	4.25	3.75
Miscellaneous Effects (Out Of 7)	4.45	3.88	4.35	4.70	5.95	4.88
Screen Uniformity	3.50	3.00	3.25	3.38	4.25	3.88
Flicker	3.25	4.00	4.00	3.63	4.25	4.13
ANSI Brightness And Contrast	2.63	1.00	3.00	2.88	4.25	2.13
Defocusing, Blooming And Halos	3.50	3.38	1.25	3.75	4.25	4.13
Presentation And Movie Tests (out of 30)	12.85	17.4	13.65	21.7	27.25	20.9
Text Quality (P Mode)	3.00	3.75	1.75	3.25	4.38	3.75
Reverse Text (P Mode)	3.00	3.13	1.75	3.25	4.38	3.75
Quality Of Photographs	2.00	2.88	1.50	3.75	4.50	3.50
Quality Of Animation (P Mode)	2.25	2.75	3.25	3.75	4.65	3.50
Movie Quality (Movie/Pres Mode)	1.50	2.50	2.75	3.75	4.65	3.25
Price (Rs)	52,499	68,000	52,500	54,000	71,000	1,15,000
Price Index (Out of 15)	14.29	11.03	14.29	13.89	10.56	11.48
Overall Score	63.18	68.25	57.85	64.10	77.93	69.30



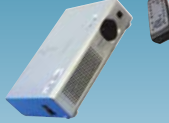
+ Good features;  
portable  
- Average  
performance



+ Commendable  
performance  
- Average build  
quality



+ Low power  
consumption  
- Poor  
performance



+ Good performance  
- Low Contrast  
Ratio



+ Brilliant  
performance  
- Bulky



+ Light and compact  
- Could do with a  
better remote



## XGA Projectors

Infocus	Sharp
<b>LP-600</b>	<b>XR-10X</b>
24.29	24.30
DLP	DLP
1024 x 768	1024 x 768
2000	2000
1000:1	2000:1
4:3 / 16:9	4:3 / 16:9
4	4
1.24:1	1.15:1
33 - 268	40 - 300
1.5 - 10	1.4 - 12.1
200	275
2000 / NA	2000 / 3000
4	4
31 - 85	15 - 70
50 - 85	45 - 85
4/4/4	4/4/4
6/4	4/4
Mono, 3	Mono, 2
4	6
2.4	3.9
260	330
37	33
3.75	4.5
4	4
4	4
4	4
4	4
23.87	43.87
11.00	27.84
1.13	4.50
2.75	4.50
2.00	4.50
2.13	4.50
2.00	4.50
1.63	4.50
0.50	4.50
1.05	1.80
13.88	26.30
1.25	4.50
1.50	4.50
2.38	4.50
3.50	4.50
3.00	4.50
2.38	4.50
3.50	4.50
3.25	4.50
2.28	6.30
1.50	4.50
2.25	4.50
1.25	4.50
1.38	4.50
19.55	25.5
3.25	4.50
3.25	4.50
3.38	4.50
3.38	4.50
3.13	4.50
89,000	95,000
14.83	13.89
63.00	82.07



+ Compact  
- Average performance



+ Brilliant performance  
- Bulky



Yoshiko  
Network Engineer  
APLA 162H



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Network Engineer  
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**XGA**

XGA projectors, quite naturally, dominate the image quality benchmarks, where resolution is the main criterion. They have an upper hand in the picture tests and the text and presentation tests. But when it comes to DVDs, they do not make much of a difference to the image quality. That's why the movie test gives you a better insight to the absolute quality of the projector across the SVGA and XGA categories. This segment didn't have a single LCD projector.

**Presentation Test**

The Sharp XR-10X was the clear winner with its superb well-rounded performance. The other two were plagued with phase problems, with the Infocus faring badly—its performance was comparable to the under-performers in the SVGA segment. Text quality was the worst with the Infocus, with HP coming in second to Sharp. The graphs and pictures were severely affected on the Infocus.

**DisplayMate Video Edition**

The Infocus LP-600 fared pretty badly with the black levels. In fact, it was not able to produce anywhere near an authentic black. Even the white levels had a lot of problems with definition. The HP MP-2225, too, had below-average black levels, but it was much better than the Infocus. The Sharp XR-10x, like its sibling, gave outstanding results with black and white rendition.

The severe phase and tracking issues of the Infocus meant that it consistently under-performed in the sharpness and resolution tests. There was a lot of vertical banding apparent in the resolution tests. The HP fared better here. The pin-sharp resolution of the Sharp was so good that on closer inspection, we found that each pixel was rendered with absolute detail. This is absolutely unmatched by any projector in this comparison test. The Infocus ran into real trouble, with the phase problems giving it the worst rating in the moiré pattern tests across the entire test range.

The Infocus showed a fair bit of streaking and ghosting, while the HP gave decent results with not much of it apparent from the viewing position. The Sharp, again, was flawless in this respect. However, in the white and black level-shift and colour purity tests, the HP and Infocus were neck-to-neck with their scores, with only the red colour having accuracy problems with the Infocus. Both the HP and Infocus had issues rendering the 16 intensity-levels properly.

**The Movie And Animation Tests**

The upper-end DLP projectors in this segment showed better colour fidelity in movies and animation. In fact, they make movies worth watching with the DLP artefacts only apparent during very

stressing passages of the *Corrs* DVDs. The Sharp XR-10X quite naturally dominated the other two; note that the improvement over its cheaper SVGA version was quite negligible. In fact, even though the XGA version of the Sharp showed slightly more detail, we found the cheaper SVGA model to have a slightly better accuracy at colour gradation. This is because the lower pixel count (480,000 pixels) of the SVGA panel of the XR-10S puts less strain over the same image processor found in both the projectors, as compared to the higher pixel count (786,432) of the XGA panel, which makes the colour response sluggish. This was bought to the fore by the *Corrs Live in London* DVD, with a small amount of colour gradation problems visible in the XGA model of the Sharp. The SVGA version rendered the colours in the DVDs without a hitch, even at the high-intensity passages, where all the other projectors faltered.

**Picture Quality**

The Sharp comes out tops with class-leading resolution and colour-reproduction. Both the HP and the Infocus have their own problems with rendering pictures, but ultimately the HP does beat



Sharp XR-10S

it by a small margin. The XGA projectors are ideally suitable for displaying pictures due the sheer resolution afforded by them. But projectors such as the Sharp XR-10S SVGA show that a good SVGA can easily beat average XGA projectors such as the HP and the Infocus as far as image quality is concerned. Higher pixel count can never be a substitute for good engineering!

**Conclusion**

In the SVGA category, we had a total of five projectors. The Sharp XR-10S dominated with its brilliant performance and on-par features. Its striking performance completely overshadowed its asking price, and it gets the Digit Best Buy Gold. BenQ's MP-610 did put up a commendable performance, but was no way near to what the Sharp had on offer. If you're looking for a projector for your conference room, we'd suggest the Sharp XR-10S despite its high price.

Since the XGA category had only three entries, we did not think it wise to declare a winner. However, the Sharp XR-10X does deserve a mention for its brilliant performance. The HP MP-2225 did perform adequately, but fell way short of the standards set by the Sharp projectors. ■

readersletters@thinkdigit.com

Contact Sheet		Projectors		
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Epson	Dmatics Computers	022-23870897	022-56587115	dmaticcomputers@yahoo.com
Hitachi	NIDHEE Consultancy	022-56341729	022-56587475	justzoomin@yahoo.co.in
HP	Hewlett-Packard India Pvt Ltd	95124-2566111	95124-2566112	saranya.rustagi@hp.com
Infocus	Genesis IT Innovations Ltd	080-41280666	080-41280668	bob@gitil.com
Sharp	Sharp Business Sytem Ltd	011-26431313	011-26438748	anilsodhani@sharp-oa.com





**S Padmanabhan**  
Executive vice president  
Global head of human  
resource development  
Tata Consultancy Services  
(TCS)

The IT industry is highly knowledge- and competency-driven and therefore, technology requirements change every three years. Given this backdrop, there is a constant demand from customers for new skills. This means that companies like TCS recognise the importance of new certifications and continuously invest to develop the competencies of its associates.

A strong academic record forms an important eligibility criterion in our selection process, especially for fresh entrants. While recruiting experienced professionals, certain skill-specific certifications can help give a person an edge over competitors for the job.

Normally, not many freshers obtain high-end certifications typically covered by our certification policy. Those who do have some certifications have an edge over other applicants. Certifications reflect the initiative of a candidate and his urge to keep learning. This edge is important, given the kind of competition that exists to get a job with a preferred employer like TCS.



# ARE CERTIFICATION

When it comes to recruitment, different companies treat certifications—such as MCSE or CCNE—differently. Some say it is important; some say it *might* make a difference; some attach no weightage to such courses. Here's what five HR officials have to say



**Eli Ramon**  
HR director, South Asia  
Intel

Certifications are relevant for certain types of jobs because they bridge the gap between conventional education and specific skill requirements. If you looked at specialised professions like medical, legal, insurance etc., certifications have been pretty much the norm. Specific to the IT industry, we see some commonly preferred certifications like PMP for Project Managers, Cisco and Microsoft certifications. Networking, database, Unix/Linux, information security, and technologies like ERP, data warehousing, storage, and supply-chain are the common areas.

A certification does tell me that this candidate is interested enough and serious enough about the profession to put in extra effort. But that's just a foot in the door. The hiring decision is eventually based on demonstrated knowledge and the quality of experience they have gained.

When we assess recent college graduates, we focus on basics. For us, the key factors are aptitude, verbal ability, reasoning, value system, and technical knowledge related to what they learnt in their stream of education. Certifications may help them improve scores on those, but cannot make all the difference.

A degree can be valuable, certification can be valuable, but in the final analysis, you should really know your stuff in-depth. If you are absolutely clear what area you want to work on, certification will be valuable.





**Bodapatti Balaji**  
Director  
ADP India Pvt Ltd

Certification plays a very significant role in the overall assessment of a candidate. Depending on the post a candidate is being considered for—say for a system administrator post—an MCSE or CCNE certification carries considerable weight.

Certification recognises and validates skills, and helps the industry standardise evaluation criteria: an MCSE from India or the US identifies similar competencies.

In a country such as India with half a million MCAs and BEs, the industry is in no position to absorb all of them. Only 10 to 15 per cent are directly employable. Certification can be a differentiating factor. It helps a generalist become a specialist.

A B.E. or B.Tech. graduate can decide the line of work he wants to pursue and then choose a certification course accordingly. The ADP portal offers training for almost every certification currently available, including some in areas such as payroll processing and project management.

As far as recruitment of freshers to ADP is concerned, our entry test evaluates basic quantitative, logical and programming capability. According to the demand and supply situation, we may not be rigid about a candidate's aggregate percentage, provided the candidate demonstrates the required competence. In such a case, certification may give him an added advantage.

## COURSES A VALUE-ADD?



**Ashok Reddy**  
Executive vice president  
HR and corporate affairs  
Infotech Enterprises Ltd

Certification does not play a primary role in the recruitment process, especially in the case of freshers. Infotech recruits only graduates who have secured first class, that is, above 65 per cent aggregate. Such candidates are then put through an entrance exam, a group discussion, and two levels of interviews. Apart from this, their final year project is of importance. Even if it's a dummy project, what the candidate has learnt from it is important. Following all these considerations are soft skills such as communication and team dynamics.

It's only after these criteria that certification comes into consideration. Other parameters being the same, a certified candidate will probably stand a better chance. However, in the case of freshers, our in-house training is good enough to impart the necessary job skills.

Some clients do mention a preference for a particular number of certified candidates in a project, but there are often experienced members in the team with the required profile.

Of the 300 freshers we recruited in 2006, very few possess any certification.



**Nitya Nivali**  
Senior manager - HR  
Progress Software

A graduation in engineering provides the necessary background for a fresher. Gaps in specific skills are bridged by on-the-job and internal training. In the case of experienced candidates, yes, a certification could be an added advantage—for example, an MCSE or CCNE for a systems position, or an OCP for a database position. But we certainly don't consider these a substitute for relevant experience.

For a fresher, certification can perhaps guarantee an interview, but not a job. His concepts as proved by his academics and performance in the interview are more relevant. Let's say we're recruiting a Java resource; once basic proficiency is established, the candidate's attitude and willingness to learn is perhaps more important than a Java certification. If he doesn't have one, our internal training process will more than make up for it.

Certification is probably the last thing one would consider in the process of recruiting a fresher, and it's definitely not a make-good for average or poor academics. However, after three to four years of experience, an employee can consider certifications such as PMP (Project Management Professional) to move into a Project Manager post.

*As told to Philip Malayil (philip\_malayil@thinkdigit.com)*



# Life @ 24 FPS

**The animation industry is associated with much glamour and more money. But what is the scene really like for a doodling career?**

Philip Malayil

**W**hen Garfield wakes up to press the snooze button—or closer home, when Fido Dido checks out the beach scene—much labour has been expended to add life to, or animate, those 24 frames that move in front of your eyes in a second. Animation is traditionally associated with big Hollywood studios, but according to a NASSCOM report released in January 2006, India's animation industry is expected to reach revenues of Rs 4,223 crore by 2009, from the 2005 figure of Rs 1,270 crore.

## Why India?

Wage levels for animators in offshore countries are attractive to production companies and movie studios looking to save a penny. Billing rates last year for animation work in India ranged from \$2,000 (Rs 90,000) to \$5,250 (Rs 2.35 lakh) per minute for two-dimensional animation, and between \$4,500 (Rs 2 lakh) and \$7,000 (Rs 3.15 lakh) per minute of

work for three-dimensional animation films. Rates in the US and European markets are in the \$17,000 to \$25,000 (Rs 7.7 to 11.25 lakh) range.

Analysts estimate that Indian companies have won some \$50 million to \$100 million (Rs 225 to 450 crore) in business, a small slice of the \$10 billion (Rs 45,000 crore) global animation industry. But that could change, as major US studios such as Disney, Warner Bros Studios and Metro-Goldwyn-Mayer, who previously have done much of their animation in-house, try to cut costs. Companies such as UTV Software Communications (UTV), Toonz Animation and Crest Communications are leading the way.

For those looking out for careers, these figures offer comfort. But let not the moolah drive you where talent does not! If you've spent your school days doodling cartoons of the maths teacher rather than listen to his ramblings on trigonometry, and your classmates have cheered not when you got caught but at the canny likeness of your toons, animation might just be the field for you.

Illustration Pradip Ingale





## The Path To Toondom

The traditional path would be to graduate in Fine Arts from a school such as Mumbai's JJ School Of Arts and apply for a trainee position. India's premier design school, the National Institute of Design (NID) Ahmedabad, has a two-year post graduate course in Animation Film Design. Entrants typically have to be graduates in Fine Arts, Applied Arts, Design, Architecture, Communication Media, Film & TV, or Mass Media, or graduates with experience in the animation industry. But with just 10 seats in the program, competition is fierce.

Akhil Succena, activity chairperson, education, NID, says, "Since this is a post-graduate course, we expect some level of proficiency. An applicant has to present a portfolio as part of the admission process. This criteria leads to people already working in the sector such as 'in-betweeners' and others to apply." According to Mr Succena, an NID animation diploma holder typically starts off at a salary of Rs 30,000 per month.

For a beginner, options include private institutions such as Arena and Zee Institute of Creative Arts (ZICA). According to Atul Vohra, country head, Arena Multimedia, "The animation industry has a current requirement of at least 50,000 trained persons. Only 20 per cent of this is presently fulfilled. This translates into almost 100 per cent placement and entry-level salaries of Rs 10,000 per month." We ask Vohra about what makes a skilled animator. "The ability to express oneself through drawings and acting is the fundamental requirement. Computers only provide a tool."

According to Mr Vohra, getting carried away by the "cool factor" associated with animation is easy. But success in the field needs talent and application. The two Arena training centres in Mumbai have only 40 seats each, and every applicant undergoes a screening process before being admitted. 2D animation is covered in the first year and 3D follows suit. The course fees of 1.8 lakh per annum also might deter the casual hobbyist.

And it's not all software training, either. About 50 per cent of the classes are on drawing, anatomy, study of motion, acting and cinematography. Software such as Toon Boom, Solo for 2D, and 3DMax and Maya for 3D follow. Composition is taught on Combustion, while Flash and Photoshop complete the package.

In a typical animation set up, the roles include the storyboard artist, audio specialist, character designer, background artist, in-betweeners and the key animator. Of these, the key animator designs the first and last frames of a 24 fps sequence. "In-betweeners" fill in the gaps. While students at Arena are exposed to every function during a course to figure out what fits them best, Mr. Vohra recommends the talented ones to focus on the role of Key Animator.

## A Reality Check

Many institutes also offer shorter six-month module-based courses which, though cheaper, may also be riskier. Be warned that in a country



**“Software are just tools. Anyone can learn to use them. The essence is to have the inherent creative talent to be able to use those tools to create works of art”**

**Rajesh Pai**  
Technical director  
Rhythm & Hues Studios

like ours, the demand-supply equation is tilted in the direction of the employer. A typical example is that of Sindhu Nair from Mumbai, quoted in a *Wired News* article:

"Nair's father owns a small shop in Mumbai. Although he earns about Rs 11,000 every month, he had great dreams for his 22-year-old daughter, Sindhu. After reading countless articles in the papers, he was sold on the great IT revolution. He borrowed money and paid about Rs 31,000 for a six-month animation course.

"Nair completed the course, but spent another eight months looking for employment before finally landing a job in the field that pays Rs 900 per month."

## The Industry-Side Story

When *The Lion, the Witch and the Wardrobe* was nominated for an Academy Award in visual effects, there was rejoicing in the Mumbai subsidiary of the California-based animation studio, Rhythm 'n' Hues, because part of the animation process was completed here. We asked Rajesh Pai, technical director, about what this means for the sector in general and jobs in particular. His answer: "The visual effects industry, though at a very nascent stage in India as compared to the global scenario, is witnessing rapid growth. Naturally, there will be an increased demand for talent to meet the requirements." As for the areas of critical requirement, says Mr Pai, "By its very nature, this work requires talented individuals with a background in art and with creative sensibilities.

"While most people only see the opportunities in the artistic field, very few people consider the technological challenges that this industry presents. All this creative magic—animation, visual effects—would not be possible without the amazing technology behind it. The requirement for technical people is equally, if not more, critical for the industry. There is definitely a demand for technology professionals, both on the hardware as well as the software side. We, at Rhythm & Hues Studios for example, are a totally Linux-based facility. We are constantly on the lookout for Linux professionals to grow our technology team."

From an industry perspective, Mr. Pai says that irrespective of one's training, it has become an accepted norm that resources need to be trained and developed in-house for them to be productive in a real-life production environment. The key factor, therefore, in selecting candidates, is the spark of intelligence and passion.



## Animation Schools Teach...

### Editing

Avid  
Final Cut Pro

### 3D

Softimage XSI  
MAYA  
Autodesk-3DxMax

### Visual Effects

Combustion  
Adobe AfterFX  
Digital fusion  
Flame

### Image Editing

Adobe Photoshop



**Career Profiles In The Field Of Animation****3D Layout / Background Artist**

The layout / background artist must be an excellent cartoonist, capable of following the basic design of characters. He needs to research costumes, architecture, and landscapes. Sound knowledge of perspective and composition is essential.

**3D Character Animator**

Should have mastered the mechanics of animation (squash and stretch, overlapping, anticipation, timing, weight, body dynamics, secondary motions, etc.), and should have versatility in animating various styles of characters. Should be proficient in acting theory and practice. Fine draftsmanship is essential, as is the ability to make humorous drawings and actions. 2D key animation skills are essential.

**3D Modeller / Rigger**

Character Modellers: Should be able to model organic and complex forms. Must be proficient in polygon modelling, and should understand texturing and rigging requirements.

Sets Modellers / Props Modellers: Should understand texturing requirements, and should have a strong sense of proportion.

Rigging Artists: Should be able to design strong interactive rigs and simplify complex animation tasks. Should have good understanding of anatomy.

**3D Special Effects Artist**

Must possess a strong sense of dynamics. Should be able to visualise and render natural phenomena such as fire, water, smoke, cloth, etc. Should

have strong technical problem-solving skills, and know all the special effects tools and software.

**Lighting / Texturing Artist**

Must understand how to set scene mood and feel. Should be able to deliver photo-realistic frames. Must possess a minimum experience of one year.

**Compositor**

Should have knowledge of colour correction, masking, tracking and wire removal. Proficiency in online editing software is required.

**Programmer**

Should have Knowledge of MEL scripting, C, C++, VB, Perl Scripting, the RenderMan Shading Language, XSI and Maya.

Mr. Pai advises aspirants to the field, “One would like to dispel the common misconception that getting into the animation or gaming industry requires one to learn or gain expertise in the latest versions of imaging software. The fact is, the various software are just tools. Anyone can learn to use these tools. The essence is to have the inherent creative talent to be able to use those tools to create works of art. That is what students should concentrate on.

“Technology professionals should also widen their horizons and look at the wonderful opportunities that this industry provides, rather than following the herd into staid careers in programming with software giants. As the industry grows, their careers will grow proportionately.”

Rajesh Turakhia, CEO of Mumbai-based Maya Entertainment Ltd (MEL), which also has a training division, the Maya Academy Of Advanced Cinematics (MAAC), says, “Out-sourcing projects for TV and film typically extend over a period of two to three years. During this period new projects keep coming in, which require more manpower. According to Turakhia, when 2D ruled the roost it was Korea, China and the Philippines which were locations of choice. “But India, though a late entrant, has managed to gain ground in 3D. Also, we appreciate the American sense of humour and timing better,” adds Turakhia.

**Institutes**

- |                       |                      |
|-----------------------|----------------------|
| 1NID, Ahmedabad       | 1National Multimedia |
| 1Aptech-Arena         | Resource Centre -    |
| 1Zee Institute Of     | CDAC Pune            |
| Creative Arts: 3-year | 1Toonz Animation     |
| diploma in Animation  | Academy, Trivandrum  |
| 1Industrial Design    | 1Toonz Webel         |
| Centre (IIT Mumbai,   | Animation Academy,   |
| IIT Guwahati)         | Kolkata              |

“3D is where the action is, and aspirants should consider this avenue. Growth is only limited by one’s creativity. From a starting salary of Rs 8,000 per month for a trainee, three years can see one taking home Rs 75,000 per month as a Team Lead,” informs Turakhia.

Turakhia’s advice to young aspirants: “Animation, the universal language, can form the skill set for a serious career. Apart from entertainment, opportunities exist in sectors such as education and architecture. Considering the potential of the industry, a well-thought-out decision should be taken by parents and youngsters.”

Micheal Laxman, member of the technical team at MAAC says, “This is the field for those who are fascinated with visual effects.” Though proficiency in drawing or sketching is a welcome pre-requisite for the one-year course the academy runs, they have a month’s foundation course for those lacking the basics. The Maya course covers areas of 3D animation, visual effects and editing for film and TV.

According to Laxman, of the 300-odd students who pass out of the institute, 12 have been placed with MEL. Towards the end of the year, this figure is set to go up to 100.

**Hotting Up**

The animation industry is getting ready for more projects and revenues. Avenues for the display of talent are coming up. 24FPS—an animation film festival organized by MAAC—is scheduled for April, and invites entries from across the country. In a creative field, the need for recognition is high, and these are avenues for hidden talents to make themselves known.

The message seems to be to look beyond the glamour and fancy salaries and take a leap into the field only when one is convinced about talent and the ability to use the medium to communicate. ■

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# Digital Leisure

Technology Beyond Work

**Touched By Tech**

## Bridging The Gap

**At some villages in Andhra Pradesh, illiteracy is no more an impediment in the quest for information**

**Jyotsna Rege**

**M**uch of rural India lives in what can be termed "Media Darkness"—where people do not have access to facilities like television or radio, and in some places, there's no access to newspapers either. Lack of access to information has been one of the impediments to development, and lack of development, in turn, further alienates the rural sector. In a bid to breach this vicious circle, an initiative called Project i-Shakti has used technology to provide information based on

demand, via a network, to villages in the state of Andhra Pradesh.

### Where It All Began

Hindustan Lever Limited (HLL) began a programme for rural empowerment called Project Shakti. Project Shakti aims at creating entrepreneurial opportunities in villages all over India so they do not need to rely on agriculture alone for their livelihood. Most of the individuals who have registered with the programme are women, and are called the Shakti entrepreneurs.

"When Unilever developed an interactive dialogue technology,

we considered its purposeful implementation and integration with Project Shakti. Thus was born Project i-Shakti. We decided to begin the venture in AP as the state had already initiated an e-Seva programme, and we tied up with them to launch the services we had conceived under i-Shakti," says Rohit Harirajan, head of the project.

### What Is iShakti?

The i-Shakti venture seems simple enough when stated out aloud: it is a kiosk-based interactive dialogue system that contains a computer terminal and offers free





informational services aimed at education and community development in rural India. The aim of the project is to create an IT-based rural information service so that the population has access to critical information via the Internet, such as updates on farming practices and hygiene. In view of the fact that Andhra Pradesh (AP) has a total of 7,500 predominantly agriculture-based villages, the task at hand was monumental.

YonEarth interactive, a Mumbai based IT-enabled marketing solutions company, was hired to design, develop and manage the venture.

"Every one knew it was an extremely uphill task," says Vivek Marolli, Director, YonEarth Interactive. "It was completely untreaded territory. Making such an ambitious project work in far-flung villages across rural India, under difficult conditions such as sporadic power supply, heat, dust, poor computer literacy and almost non-existent or very slow Internet connectivity, would indeed be a challenge. We had to design a system that would beat all these barriers and work in ways that were never thought possible before."

After a study of the requirements for the project, and a year spent on designing and building the software, the system was ready to be launched. While building the ICT—the Integrated Circuit Technology—the aim was to have a villagers get their hands

on a computer rather than employ a kiosk owner as the interface between the technology and the user. Hence, the project emphasised on using a voice- and video-based system, and uses "rich media"—software designed using Macromedia Flash—besides being database-driven, so that all the intelligence can be built on it.

A voice system would eliminate the necessity for the user to read off the screen, hence making it easier for an illiterate user. It was also important to have a system that would allow the central servers to connect to these kiosks through the barriers of poor Internet connectivity, and enable large volumes of rich-media files and information to go back and forth between the Mumbai office and thousands of such kiosks on an everyday basis. Finally, the users had to be taught to use and understand what they stood to gain by using the system, besides being trained to use the mouse and keyboard.

Each i-Shakti kiosk is owned by an individual, and it comprises a desktop PC system that operates independently of all other kiosks on the network, but is connected to the central server to which it can synchronise data through a dial-up connection. The i-Shakti software needs to be installed on PCs with suitable configurations.

Once deployed on the PC, it acts as a kiosk, and the owner of the kiosk is expected to synchronise the data and transfer it to the central server once a day. The kiosk owner also helps new users



Making such a project work in far-flung villages, under conditions such as sporadic power supply and poor Internet connectivity would indeed be a challenge

**Vivek Marolli**  
Director  
YonEarth  
Interactive



register and guides them when they use the system. The central server communicates to thousands of such kiosks through a specially-developed Compressed Data Synchronization-based Dialogue Technology, which allows the kiosks to work in offline mode. This reduces the cost of operations to the kiosk owner, and at the same time, he can connect to the Central Server every day for two-way data updates. Technical support teams, which have been set up all over AP, also monitor and solve any problems on the kiosks within the state. For every forty kiosks, there is a technical manager who tackles any problems that the kiosks face.

Currently, every one of the i-Shakti kiosks in AP has various channels of interactive rich-media information created by culling various sources such as opinions of agriculture experts, the Internet, and government agencies, on topics such as health, agriculture, animal husbandry, education, employment, women's issues, and entertainment. As a registered user, one can visit the i-Shakti kiosk in his village six days a week and access information and services. Since there are experts who are a part of the project—some on a payroll and some voluntary—the villagers can also post questions on a query mailing system.



## Why i-Shakti?

How is such information critical to the villagers? Well, most villages are isolated and independently-functioning entities, and they rely on their existing means of information and resources to aid their everyday activities. This implies that in case of an illness, they have access only to a local doctor, and possibly no chance at a second opinion. With i-Shakti, the villager has access to information that comes to him from a recognised government source, and is an authorised voice—most of the experts on the panel of i-Shakti are people employed with various agencies all over AP. For example, the expert on wheat might be an agricultural scientist at the University of Vijaywada. Besides, the information is free, and one can gain insights in any developments in



This easy to use interface has 'talking' icons





An i-Shakti kiosk set up in the owner's house

a particular section such as health or employment right from the kiosk in his village.

The i-Shakti system is designed as an easy to use, "talking" voice-based system in Telugu, the state language. All information on various topics is in the form of audio or video, and the user does not necessarily have to read off the screen. The graphical user interfaces are designed such that icons speak when a mouse is scrolled over them. Once a user knows what area he wants information on, he can click the relevant icon for further information.

For example, on the Agriculture icon, there are subsections titled Wheat, Paddy, Cotton, and so on. Once a user scrolls over an image of, say, cotton, a voice announces the name of the crop in Telugu. He can then click on

the Cotton icon to access information on types of cotton, seasons for growth, pest control, fertilisers, and so on.

"We have avoided making the Internet available to the villagers to keep costs down. The Net is only used to synchronise data and mail it to the office in Mumbai. We monitor each and every bit of information that is passed back and forth and between user, expert and kiosk owner. Even this data comes in during the synchronisation. Hence, we can keep a tab on everything from our office in Mumbai and run things efficiently," says Marolli.

How each member uses the data is also tracked and recorded. The system is constantly monitored for the most frequently-visited sections and the duration



of the visits. Based on usage, there is a lucky draw each month for the person who uses the system most efficiently. Besides, relevant offers and rewards are given to other users who use the system effectively. For example, if a member visits the Education section regularly, he might be offered a discount on stationery or books. This offer directly appears on the computer screen when the user logs in, and this system encourages members to use the system. Besides, the fact that the information is free is an incentive by itself.

In less than six months since i-Shakti's launch in September 2005, the network has grown to about 970 kiosks in 21 districts in Andhra Pradesh, with a registered customer base of 1.5 lakh users.

One of the kiosk owners, Shantamma, says, "The programme has created a stir ever since it began. We have people from all age groups using the system. Practically all are registered users, and we have six to seven users coming in every day."

"The system is designed such that it can be set up and configured for use in different languages. The groundwork has been laid to take the initiative forward," says Marolli.

The people of Nallagonda, AP, where the first kiosk was set up, are not unaware of the opportunity that is at their doorstep today. Provided with resources, these people are apt to make the best use of them. ■

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# Is Piracy Good?

**And we're not talking about the end-user; we mean for software vendors**

**Agent 001**

**W**e've seen quite about enough news on software pirates being tried. If it's not a 10-year-old kid being sued by the RIAA (Recording Industry Association of America), it's lawsuits against the developers of P2P networks and Web sites.

Although I buy all my software, or just use freeware, I don't think you can completely stop people from pirating software—considering that many software products cost more than the average PC today! There will always be two types of software programmers: the creators and the crackers! There will also always be two types of end-users: the haves and the have-nots, or more appropriately, the will-nots. Rather than get into the undecidable ethical debate about “to crack or not to crack,” let's stick to software piracy and the effects it has on the industry.

## **It's Easy, It's Fun, It's Illegal!**

Most of us in India have a lot of pirated software on our computers, and part of the reason is that we *really* cannot afford to pay for even software that's cheap by American standards—\$10 is Rs 450! Obtaining working software has become the

simplest thing on earth—just go to a download site such as [www.download.com](http://www.download.com), download the software, and then hit Google or Yahoo! Search, looking for a crack.

You'll almost always find what you're looking for (you know what I mean...) in a flash; download the crack, and you instantly become one of the millions of software “pirates” across the globe. A lot of us don't even know it's wrong!

Take for example of the e-mails I get every day: at least two of them per day are from readers asking me to provide them with a serial key or download link to a “patch” for some well-known software or the other! When I politely reply to these people informing them that this is against the law, and if they really like the software that much—if it is that useful to them—then perhaps they should consider buying it, here's a taste of what I get as responses...

“... my system assembler can give it to me for free, but he is out of town so I asked you...”

“It's illegal? But my friend has it... it came with his computer; and his computer itself costs less than that software... if he didn't pay why should I?”

“Do you seriously expect me to believe that you do not pirate yourself?”

“Never mind, I found the key myself... thanks for nothing!”

## **You're Breaking The Law**

It's important to realise that by downloading a crack for a software, or using someone else's licence key to unlock a software, is illegal. Laws across the globe vary, but generally, the punishment could be a hefty fine and/or jail time.

## **Oh Shush, You Little \*\*\*\* Activist! Piracy is Good**

That is what was said to me when I recently chided a female friend who called me to ask for a “free” version of a very popular (and expensive) image editing software! The verbal abuse did not ruffle me—I'm used to that—but her statement, “Piracy is good,” left me speechless.

A lot of muttering and stammering and hurled abuses later, things calmed down a bit and I got down to asking her how exactly piracy was good, and for whom.

“Not unless you buy me coffee and get me that software,” she teased. Long story short, I took her out for coffee, but made sure she got someone else to do her piracy work.

## **Here's what transpired:**

**Me:** So how can piracy be good? Good for you, yes, but not good



for the poor developer or for our economy!

**She:** Nope. Piracy is good for the software developers themselves. I mean, it's also good for me, but it's a lot more beneficial to the big software companies.

**Me:** Oh really, how? Do you *KNOW* how many billions of US dollars of profit they lose because of piracy? It's like 5 billion a year or something! *(That was a complete shot in the dark!)*

**She:** Sure, but how many billions more do they make with sales?

**Me:** Oh, that's not a valid argument; it's like saying that since 3 lakh Indians pay tax, why should the government want tax from the rest of the population?

**She:** No, taxes are different. You *have* to pay them, but when it comes to software, I don't *have* to use it; I could choose to be like you and not use paid software at all!

**Me:** So why don't you?

**She:** Because I'm keeping the balance of good and evil in the world! What do you think, dummy? It's because there are popular software that are easy to use and the not-so-popular free-ware that are a lot harder to get used to! I like to keep it simple.

**Me:** So piracy is justified for you because you're lazy?

**She:** No. Piracy is justified for me because I want to use the same software at home as I do at work. My company will not buy me a copy for home, so I pirate it!

**Me:** Wha... huh... umm... that's the most idiotic thing I've heard! Why can't you just use logic and listen to what you're saying!

**She:** What I'm saying is logical. You just cannot grasp my logic. Perhaps you should buy us a couple of coffees more and I will waste another half hour of my time trying to put this in baby talk.

**Me:** (Mumbled) \*\*\*\*\*

**She:** Now get the coffee or I'm going back to my office!

**Me:** \*sigh\*  
10 minutes later...

**She:** (slurps another free coffee and continues) Ok look; can you

tell me why software companies have not made un-crackable software products till date?

**Me:** Because they can't, but they will probably be able to do so soon enough!

**She:** Wrong! They haven't because they just do not want to! Do you seriously believe that they couldn't, at the least, make it a lot harder to crack software? I mean, how come a crack or patch is available in a week from when the software is released? There has to be more than just a simple "they cannot" answer to this.

**Me:** No, it's because software is made by humans and thus it is crackable by humans!

**She:** Oh come on, don't be so naïve. Look at the bigger picture!

**Me:** There's a bigger picture? I thought software vendors losing billions of dollars was the bigger picture!

**She:** Fine! Let me use an example to make you understand!

**Me:** Oh this ought to be good...

**She:** Shush! Ok, let's say Microsoft makes a Windows version that is un-crackable. Let's say it's Vista for this example. What happens then?

**Me:** Everyone buys Vista?

**She:** Nope, a lot of people start using Linux! Lindows, SuSE, Ubuntu, you choose.

**Me:** It's Linspire!

**She:** Oh whatever, correct all the little mistakes if you wish, but that's the truth! Seriously, consider how so many people today have at least tried a Linux distro—live or dead! Don't you think they'd either just stick to using a pirated version of Windows XP, or just use a newer Linux distro?

**Me:** Umm... maybe. But we're talking majority here, not the minorities.

**She:** Minority? Why do you think so lowly of us? I'm no techie, but even I've installed Ubuntu and tried it out. Sure, some things I just could not fathom, but for my kind of work it really made no difference what OS I was running! I found OpenOffice.org to be just as simple to type out reports in as Microsoft Office!

**Me:** True, I use it too.

can't help but wonder how beneficial piracy has been to big software development companies.

**She:** See!

**Me:** No, I don't see!

**She:** Typical! Why can't you use your imagination a bit? Think of what would happen if I started using GPL software only at home... Take your own example... don't you use the same software at office as you do at home?

**Me:** Err... yeah, so?

**She:** Well, now imagine the whole world doing that! We'd have open source software being used at home and at work—after all, companies would love to save money on software, wouldn't they?

**Me:** OK! So a lot of people start using open source software. How's that bad?

**She:** It is if you're a "paid" software developer!

**Me:** Ouch!

**She:** Aha, hallelujah, hallelujah! Let there be light, God proclaimed, and took a coffee break to rest her tired self.

**Me:** Her? Oh never mind! (\*pout\*)

**She:** Aww, the pwwoohh baby lost an argument!

**Me:** (muttered bad words)

**She:** OK! I'm going back to office. Let's do this again sometime!

**Me:** (mutter) Let's not!

That was the last time I was going to argue with a stock market analyst!

As I dejectedly stomped my way back to my office, the logic she had used to reach her conclusion started to sink in. It's not like I believe her and will now start pirating software, but I do think she has a point. I know that despite losing the debate, software piracy is still bad, and against the law, but I cannot help but wonder how beneficial it's been to big software development companies. Sure the smaller guys stand to lose everything because of piracy, but then again, since when have smaller companies not risked everything?

Though I haven't found the answer—and I doubt anyone will ever have concrete evidence to ever prove it either way—I now have a possible answer to the question, "Is piracy good?" ■

agent001@thinkdigit.com



# All Part Of The Game

**1** When is Sony preparing to launch Blu-ray, with a few movie titles and the first BD player from Samsung?

- a) May 2006
- b) December 2006
- c) Sony has joined the HD-DVD camp!
- d) Blu-ray has already launched!

**2** The latest rumour about China is that China will...

- a) create its own version of the Internet, with its own TLDs
- b) remove all Internet infrastructure altogether
- c) give the death penalty for porn access
- d) punish online dating by public flogging

**3** Nostalgia: Name two games bundled with Windows 3.1.

- a) Pole Position and Minesweeper
- b) Jetpack and Solitaire
- c) Wolfenstein 0.9 and Snake
- d) Nibbles and Gorilla

**4** What are the world's second- and third-largest software companies respectively?

- a) Oracle and Adobe
- b) Microsoft and Adobe
- c) Oracle and SAP AG
- d) SAP AG and Nullsoft

**5** Windows Vista's user interface is all pretty and nice, and offers good functionality as well. What is it called?

- a) Pyro
- b) Aero
- c) Sky
- d) Aqua

**6** RSA is a public key encryption method. What does it stand for?

- a) Really simple algorithm
- b) Rivest, Shamir, Adleman
- c) Recursive Self-Analysis
- d) Ronald, Smith, Archie

**7** What's the latest news about Technorati, the blog search engine?

- a) It's being taken over by Yahoo! Search
- b) It now tracks 30 million blogs
- c) It's slated to shut down because of falling blog readership
- d) It now tracks more than 1.5 billion blogs

**8** What is the Google Zeitgeist?

- a) A real-time listing of the richest people in the world
- b) the W32.Zeitgeist.worm created by a former Google employee
- c) A listing of the top searches over periods of time
- d) Nothing. This is an April Fool question!

**9** How long would it take a quark-based computer to

multiply two 18-digit numbers?

- a) As long as a "regular" supercomputer would take...
- b) Quark-based computers are too slow to even complete the task
- c) It would do it too fast
- d) There's no such thing as a quark-based computer!

**10** What percentage of Internet traffic was P2P (estimated) in 2003?

- a) Just about 10 per cent
- b) Almost 50 per cent
- c) Between 60 and 80 per cent
- d) Almost all Internet traffic - 98.26 per cent - was P2P

Google, launched in 1998, was first popular as a rival to AltaVista for scientific and other research papers and resources.

Did You Know?

## Answers

1. a) May 2006	6. b) Rivest, Shamir, Adleman
2. a) Create its own version of the Internet, with its own TLDs	7. b) It now tracks 30 million blogs
3. d) Nibbles and Gorilla	8. c) A listing of the top searches over periods of time
4. c) Oracle and SAP AG	9. d) There's no such thing as a quark-based computer!
5. b) Aero	10. c) Between 60 and 80 per cent

Got an interesting question? Send it in with the answer to [tq@thinkdigit.com](mailto:tq@thinkdigit.com) Mark "TQ" in the subject area.

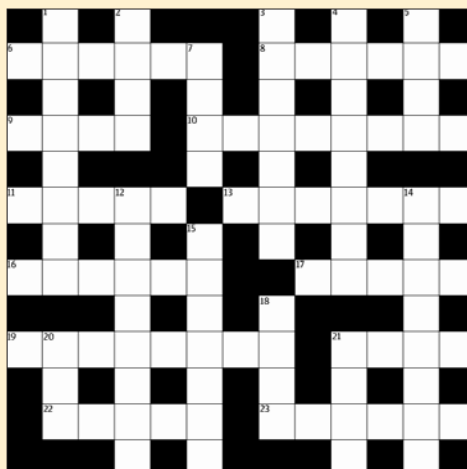
## Crossword

### ACROSS

- 6. State of being connected to the internet(6)
- 8. 'A' in RAM(6)
- 9. \_\_\_ Operating Company-demerged company of AT&T in 1983(4)
- 10. Images or photos(8)
- 11. Integrated Electronic Corporation(5)
- 13. Act of creating, changing and formatting documents(7)
- 16. \_\_\_ratio shows the proportion of height and width of an image(6)
- 17. Move light beams over photos to load images in the computer(5)
- 19. Hardware or \_\_\_(8)
- 21. Personal Access Communications System(4)
- 22. \_\_\_ Or stop unwanted e-mail (6)
- 23. Enter an e-mail account by entering User name, password and click on \_\_\_ (4,2)

### DOWN

- 14. Very small Integrated circuit(8)
- 15. Virus or worm \_\_\_(7)
- 18. Optical device in cameras(4)
- 20. Short for Output feedback(3)
- 21. Paper sheet(4)
- 1. Dish \_\_\_receiving or transmitting transducers(8)
- 2. \_\_\_tool-paint inside an enclosed figure(4)
- 3. Sequence of numbers and vertical lines identifying an item(3,4)
- 4. \_\_\_Coupler-hardware device enabling a modem to connect a voice circuit(8)



- 5. Domain Software Engineering Environment(abbr)(4)
- 7. Electronic Bill Presentation and Payment(abbr)(4)
- 12. Negatively charged subatomic particle(8)
- 14. Very small Integrated circuit(8)
- 15. Virus or worm \_\_\_(7)
- 18. Optical device in cameras(4)
- 20. Short for Output feedback(3)
- 21. Paper sheet(4)

Send in your answers to the crossword with complete contact details to [TQ@thinkdigit.com](mailto:TQ@thinkdigit.com) on or before April 15. One lucky participant will win

Win!



## SCJP Sun Certified Programmer for Java 5

by Kathy Sierra & Bert Bates

Published by



March 2006

No winner for Crossword this month since it was a repeat of Jan 2006  
**APRIL FOOL!**





# THE TERRIBLE

“The most merciful thing in the world, I think, is the inability of the human mind to correlate all its contents.”

— H P Lovecraft, *The Call of Cthulhu*

**H**. P. Lovecraft's *Cthulhu* has a cult following among readers of horror fiction, and any game that aims to recreate the chilling, macabre feel of Lovecraft's books could only fall flat on its face.

Or so we thought.

The atmosphere in *Call of Cthulhu: Dark Corners of The Earth* (DCoTE) is—dare I say it?—perfect. It delivers a potent dose of creepiness and horror that will leave you gasping for breath at the end.

The game starts with police detective Jack Walters (you) investigating a disturbance caused by a cult called the Fellowship of Yith in a dilapidated old house in Massachusetts. Unfortunately, the horrors he experiences in the house that day land him right into the Arkham Asylum, blabbering incoherently.

It is six years later now, and Jack Walters, a shadow of his former self, cannot remember what happened to him during his time in the asylum. As he tries to piece together the last few years of his life, a mysterious phone call finds him in the port of Innsmouth,

investigating the disappearance of a young store manager. His simple investigation turns ugly as he finds himself fighting for his life against dark forces beyond his comprehension.

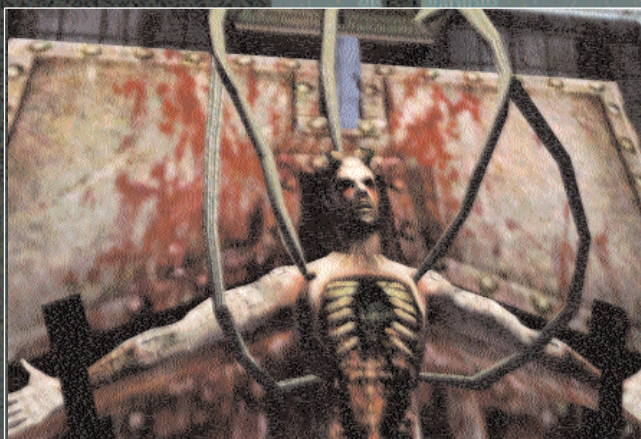
The game is loosely based on Lovecraft's short story *The Shadow over Innsmouth*, which tells of unnamed horrors that befell the little port. Once you've been introduced to its initial chapters, it's an ordeal to wrench yourself away from the game. Colours are dark and subdued, and the cutscenes are presented in an old-film grainy style, and fit in seamlessly with the game itself.

DCoTE is a mix of adventure and first-person shooter, though the bias is clearly on the adventure side—gather clues, speak to people, and solve puzzles. Thankfully, the puzzles involve some cranial activity rather than just running around picking up stuff to fit it here and there—the phrase “good old detective work” comes to mind. Just when the adventure part starts to get tedious and boring, you're thrown into an adrenaline-draining situation that will instantly



Imaging Shrikrishna Patkar





relocate your heart to the general vicinity of your throat. Something that deserves mention here is the escape sequences—scripted though they are, they're still the most heart-pounding parts of the game, where you run like hell, bolting doors and using obstacles to delay enemies by *just* those critical few seconds that stand between you and your coffin. You don't even have a gun in the first chase—a chilling “ohmygodIamgonnadie” feeling. The mix doesn't work as well as an all-out FPS, but it's still one of the better approaches we've seen.

It isn't as straightforward as it sounds, though. You have to remember that even though Jack has been released from the asylum, his mind isn't made of steel, and every disturbing scene he encounters will take a toll on his sanity—his heartbeat quickens, his breathing becomes heavier, his vision blurs—and as this worsens, he will start to mutter to himself, see things, and finally liberate himself with a shot from his pistol. To regain sanity, you must find the (very, very few) savepoints, which give him (and you) a few deserved moments of sanctuary. The idea could have been disastrous, but works in beautifully with the game's extremely immersive atmosphere.

FPS junkies will find the lack of a Heads-Up Display a little disconcerting, but you'll see that it's all part of the experience. There's no accurate gauge of health on-screen, but you can listen to your heartbeat and breathing to decide whether you need to patch up with a few bandages, or if you need a shot of morphine. Of course, this assumes your heart isn't thumping in real life. The health system is much more advanced than your average oh-now-I'm-hurt-but-everything-still-functions-properly. If you get shot in the arm, you won't be able to aim your gun well, a wound to the leg and you'll be limping, and an unattended bleeding wound will gradually drain you of life.

I can't say this enough—*DCoTE* is *creepy*. The story is brilliant (*The Shadow over Innsmouth* and *The Call of Cthulhu* can freely be read online, incidentally), the atmosphere is eerie, and the gameplay is as realistic as it can be—from the superb health system to the very life-like reasoning it takes to get out of tight spots.

And if you're feeling particularly brave, take the game's challenge and play it with the lights off. ■

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Rating: 9/10  
Minimum System Requirements: PIII 800, 32 MB Direct3D compatible graphics card, 128 MB RAM  
Developer: HeadFirst Productions  
Publisher: Ubisoft  
Distributor: E-Xpress Interactive  
Contact: 022-22850245  
Price: To Be Announced



A dramatic scene of a car crash on a road. A dark-colored car is shown in mid-air, having just flipped or crashed, with a massive, bright orange and yellow explosion erupting from its base. The car is tilted at a steep angle, and its wheels are visible. The background shows a clear blue sky with some light clouds and a distant horizon. The road surface is dark asphalt with white dashed lines, and a red and white striped curb is visible on the right side.

# CRASHDAY

Finally, a fun multiplayer game that isn't an FPS...

**C**rashday is a simple game. There are cars, there are guns, and there is some wanton destruction—three gaming ideas that have steadfastly braved the test of time. Though, rarely have all three been found in the same game.

If you are confused about what to do with these three, note this: the cars are to be driven, the guns (oh, and missiles as well) are to be used to inflict said wanton destruction on any other unfortunate car that comes your way.

## All Alone

In its single player mode, Crashday offers you many game options—you can run around an open arena destroying other cars (and getting destroyed yourself) in a Wrecking Match, play a game of “Pass the Bomb”—like passing the parcel, only here the loser goes boom in the end—or a game of “Hold the Flag”, where you need to capture the flag and keep it for as long as you can. There's also the *Speed*-like Bomb Run, where you get blown to bits for falling below a speed limit, the Stunt Show which gives you points for trying

some of the craziest driving stunts (*à la Carmageddon*), and some simple, straightforward racing.

And then there's the Career mode, where you have to do all the aforementioned to get ahead in the Crashday circuit. More than enough, you'd think, to keep the solitary player happy...

## ...For About A Day

All the game modes are a lot of fun, but they tend to get boring after the first few times. The cars are awfully tough to control, but the AI bots don't seem to have a problem





## CRASHDAY

Rating: 7/10

Minimum System Requirements: Pentium 4 1.5 GHz,  
512 MB RAM, 64 MB Graphics Card

Publisher: Atari

Developer: Moon Byte Studios

with them, so while you're floundering about trying to discern your Londons from your Tokyos, someone has already come upon you from nowhere and turned you into scrap metal, or stolen your flag, or passed you the bomb—as the case may be.

The Career Mode is just a pathetic excuse to get you to play all the game modes—there's even a voice narrative before each mission to fool you into believing there's an actual story, but it takes a lot more than that awful German/American accented voice to convince you.

However, the Mini Games, notably the Long Jumps and Blast Jumps (jump the farthest you can before your car blows up), are tremendous fun, especially if you're competing with someone for the longest distance record.

### Party!

To turn around all the gripes with Crashday's single player mode, you'll need to switch to multiplayer. Human stupidity is *much* more entertaining than artificial intelligence—your opponents are faced with the same difficulties as you are, so the chances of your winning an event are more realistic. The Wrecking Match is the most fun here—especially for venting frustrations, caused mainly due to losing pathetically in Mini Games, on bald-headed colleagues (see *Digit Diary*)—we were playing it in the office till 1 AM two days in a row!

You will now notice that *all* the game modes that Crashday offers are geared more towards insanely fun LAN parties and online play than the single player. It

supports up to eight players per event—quite respectable, and more than you'll probably ever need for a good blow-up session anyway.

### Pretty

Moon Byte Studios' attention to the multiplayer mode is also apparent in the graphics of the game—they're quite impressive, but still remain light enough to run on most half-decent graphics cards. The damage modelling is also quite well done, making all the crashes, booms and bangs very entertaining.

Every time you use the nitro boost when driving, the camera changes to wide-angle mode, and comes back to normal mode when you release it—giving the experience a weird rubber-band feel.

### Insecta

Fun though it is, *Crashday* is still quite buggy—it would randomly crash on our ATI cards, but seemed to be happier on NVIDIA's. It's also riddled with graphics bugs: there were numerous instances where the cars would go straight into the ground—with two wheels *below* the ground surface, I mean. It gets even more bizarre in online play—I've even seen cars moving around the map with only their roofs showing over the ground.

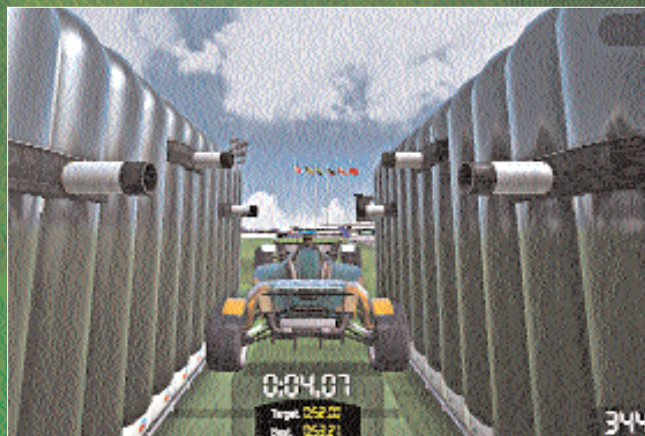
Overall, unless you get addicted to breaking Mini Game records like some of us here have, you're not going to get much out of the game if you don't intend to play it online or over a LAN. But once you *do* get into multiplayer, it's hard to get out.

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# Trackmania Nations ESWC

Here's a chance to win Rs 1.8 crore, and also do your country proud!



The next time your parents or friends tell you to stop gaming and “get a life,” “take more interest in your studies,” or “get off your butt and get a job,” show them this game review! *Trackmania Nations ESWC (TmN)* is a game that can earn you Rs 1.8 crore—provided you're the best player in the world!

Besides being the official game of the e-SWC (e-Sports World Cup), and having the potential to make you a *crorepati*, *TmN* is also one of the best free games to have been released in a long, long time! Yes, you read that right—it's FREE!

Unlike other games in this genre (Arcade Racers), *TmN* comes bundled in a tiny package—just 265 MB. And you don't even have to download it—just pop this month's *Digit* DVD into your drive and start your engines!

The game has some really amazing graphics, especially when you consider how light the installer is. It has both a single as well as a multi-player option, and

you can play it over a LAN, or on the Internet against people anywhere in the world.

I played the game on my AMD Athlon 64 3200+, MSI RS480 motherboard with an onboard ATI Radeon Xpress 200 graphics chip and 1 GB of DDR 400 Transcend RAM. At the highest settings, it murdered my graphics chip! People with an NVIDIA 6600 (or equivalent) and above will have no problems running this game at the highest settings—like I said earlier, it's light!

## World War III

With 60 countries participating in the e-SWC, and millions of individuals vying for the \$400,000 (Rs 1.8 crore) cash prize, I cannot find any other way to describe the game's popularity except to say that World War III is here! *Trackmania Nations* is affectionately called by gamers “The Crashday Killer” (see the *Crashday*

Rating: **8/10**

Minimum System Requirements:

**Windows 98/ME/2000/XP, Pentium II 450Mhz, 64MB RAM, DX9 compatible 3D video card with 16MB RAM**

Publisher: **Deep Silver**

Developer: **Nadeo**

Price: **FREE!**



review in this issue), because no one has time to play arcade racers "just for fun" when there's huge money at stake.

The game's single player mode is just plain crazy: it has 90 race tracks, and you can choose to be one of 60 countries. I chose India, of course, and thought I could help my country move up in the rankings (it was 44th when I last checked); I was wrong! Except for the Beginner mode, which is embarrassingly easy, the game is really hard to play. I found myself having to take 20 turns or more, on average, before I could complete the Advanced or Expert tracks.

## Online

Since the game is light, I expected the Internet gaming experience to be a *little* better than most other games; I was wrong—the Internet experience is quite amazing! Fast local servers also make sure that you don't wait too long, and lag is non-existent. The game is tremendous fun over a LAN as well. Pity the maps don't have more descriptive names though, because it's really irritating to try and find that map you like: "Was it G-1 or I-1? Maybe it was H-7?"

## Track Mania...

...is what the level and map developers were thinking when they designed these levels—the tracks have the most amazing hurdles, but this also makes it a nightmare to play: loop-de-loops, spins, jumps and crashes. What else could you want?

## Drive-Throughs

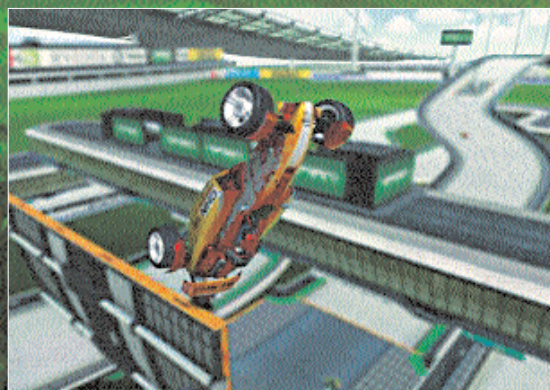
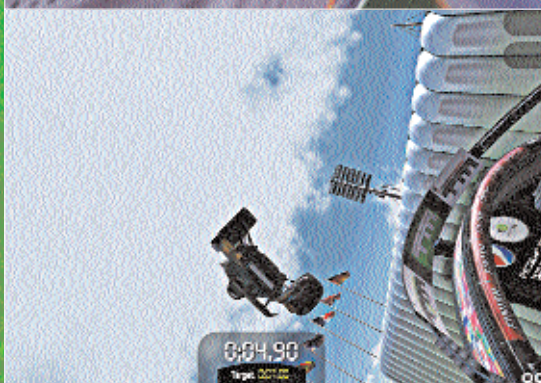
One thing that will seem weird is the whole "you can drive through your opponents" thing. Yes, race with people and you can't fight with them, *Need For Speed* style! It's like racing ghosts; you compete with the track, not with your opponents!

## Customising

For a full free game, the level of customisation is OK - but it's not even remotely as cool as the *Need For Speed* series, and you can't change your cars or your engines—or anything except the colour of your ride, actually. But like I said, since it's a free game and is light on resources, I'm pretty happy.

Anyway, enough with this review; I'll take your leave by giving it an 8/10. Take a look at the screenshots to better understand what the game is like. Or better still, put down this magazine, pop in the DVD, install it and see for yourself. Remember, it is your duty as an Indian citizen to try and get us a little higher in the country rankings, so best of luck, and *Jai Hind!* ■

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Wired.com, March 14, 2006

## Man vs. Machine in Newsreader War



RYAN SINGEL FROM Wired.com rants about how machines could never replace man. Reality or the ravings of a luddite?

Man vs. machine stories are an old standby in journalism.

Think back to John Henry racing a steam drill and forward to Garry Kasparov trying to outmaneuver IBM's Deep Blue in 1997 to the Onion tweaking the genre with its accountant battles Excel story.

But the latest twist on the meme takes it to the meta-level by raising the question:

in the future, will you find your man vs. machine story relying on a human-edited source or from an algorithm?

Standing up for the human intellect, upstart Digg is betting that its formidable legion of users can find better and more interesting news faster than any algorithm Google—or a number of upstart companies—can code.

"I have to admit when we first started experimenting with this a year ago, the verdict was out whether (human filtering) was a benefit or a detriment," CEO Jay Adelson said. "We found that it works, that it works really, really well.... We think people do a better job." On the machine side, the purest algorithmic news finder is Google News, which made waves in the media world when it debuted. With Google News, it's code, and not a team of editors, that decides which stories make it onto the front page.

Today Google News will even tailor the front page to your particular interests as determined by your news reading habits and search history (so long as you are willing to log in to Google with a user name).

Likewise, Tailrank, a San Francisco-based startup founded by Kevin Burton, also relies heavily on smart code to find cool stories—not just from news outlets, but also from tens of thousands of blogs.

Burton started Tailrank as a way to handle the information overload created by access to blogs and media outlets via RSS.

Now he uses Tailrank to read through his 2,000 subscriptions and filter up the most important entries, based on a secret sauce that includes a method of tracking how often stories or blog posts are linked to by others.

The site defaults to the top stories linked to around the web, and lets you switch to a filtered view based on sites you have listed as your favorites. You can set that list either by uploading from a newsreader or using a feature released last week that scans your browser for blogs you have recently visited.

On the humanity side of the man-machine wars, Digg uses a simpler method to find cool stories: humans clicking mouse buttons.

Digg users submit technology stories and then others can vote those picks up, down or simply lame. It's not personalized, but Digg users are fast to find new stories.

So far Digg is limited to technology news, but according to CEO Adelson, the company will be expanding to other "sections of the newspaper soon"—and it just might take on Google News as well.

CNET News.com, March 17, 2006

## If you give a bot a basketball...

WHAT BETTER WAY to get kids interested in math and science than robot sports? CNET's Stephanie Olsen finds out.

If you want a glimpse of the future of technology in the United States, look no further than the Ice Weasels, Space Cookies and Cheesy Poofs.

No, these aren't code names of secret projects at Google. They're the names of high school teams competing here this weekend for top merit in the 15th annual robotics contest sponsored by FIRST (For the Inspiration and Recognition of Science and Technology), a nonprofit founded by Segway inventor Dean Kamen. With about \$10,000 worth of donated hardware and software, high school students were given roughly six weeks to assemble a functioning robot that can move around a court and shoot Nerf basketballs for points, which is this year's chosen game.

"They give you a game that's too hard, with a time line too short and too much stuff, and the kids have to do what they can with it," said Jon Rockman, a physics teacher at the all-girls high school Castilleja in Palo Alto, Calif. Rockman is also team adviser to the green-clad Gatorbotics.

The kooky team names and oddly challenging game belie the genuine techno wizardry and teamwork on display Thursday at San Jose University's event center.

The youngsters' enthusiasm for their robots offers a ray of hope for the future of science and math in the United States at a time when many educators are concerned about test scores and flagging interest among young people in the fields.



Still, it's a truly odd scene, much like a cross between a Nickelodeon fun house and a BattleBot show. The field of play is about the size of a small soccer field, but it's hardly intimidating, cluttered with candy-colored Nerf balls. Instead of bot fights, the robots try to throw the

Nerfs through round holes in translucent walls at each end of the field, and electronic scoreboards on the wall tick higher when a ball makes it through.

A giant overhead video screen and clubby rave music in the background add a teeny-bopper MTV concert feel. If they're not playing a practice round, high school students clad in jeans and team T-shirts are either milling around (sometimes in hand-holding pairs) or engrossed in welding, drilling or just fiddling with their bots.

The competition is a community effort. Part of the challenge is for teens to find and work with mentors who are experts in technology and science.

The Gatorbotics, for example, have been working with Emily Moth, an engineer at Ideo in Palo Alto. Homestead High School in Cupertino, Calif., worked with Ron Crane, one of the founders of 3Com. Homestead's team is sponsored by Apple Computer co-founder Steve Wozniak, who is an alumnus of the school.

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## Video game therapy - a new frontier

GAMERS REJOICE! THERE'S a new rationalization for your habit—it's therapeutic!

Doctors pronounced Ethan Myers brain dead after a car accident dealt the 9-year-old a severe brain injury in 2002. After he miraculously awoke from a nearly month-long coma, doctors declared he would never again eat on his own, walk or talk. Yet, thanks partly to a video game system, Myers has caught up with his peers in school and even read a speech to a large group of students.

"I'm doing the exact same things as them. I'm getting buddies and stuff," said Myers, who had relearned to walk and was reading at a second-grade level before his video game therapy began in May 2004.

"I couldn't remember where I put stuff and now I can. I remember school stuff and people's names," he said in a telephone interview from his family's home in Colorado.

More fundamentally, Myers can now fully open his right hand, which paralysis had curled closed. His brother and sister, who were in the car with him during the accident and each suffered mild brain injuries, have also shown improvement in their memory and other functions.

Ethan and his parents attribute his most recent progress to neurofeedback training on the CyberLearning Technology system, which is often used to play car racing video games. "In the last year, we've seen the Ethan we knew before the accident," said Howard Myers, the teenager's father.



Neurofeedback is a form of conditioning that rewards people for producing specific brain waves, such as those that appear when a person is relaxed or paying attention.

While this form of treatment has been around for decades, incorporating video games marks a new frontier that taps young people's fascination with animation and electronics to sweeten often frightening, lengthy and tedious medical treatments.

Video games are being used, for instance, to help sick children manage pain and anxiety during hospital stays.

A young leukemia patient inspired "Ben's Game," which let him fight the cancer cells invading his body. A private island called Brigadoon in Linden Lab's "Second Life" virtual world is open only to people with Asperger's syndrome and autism.

West Virginia's public schools are battling obesity by making "Dance Dance Revolution"—a step-to-the-beat video game—part of their curriculum, while Nintendo has made a splash with its new "Brain Age" mind-exercising game.

For the complete column, visit [http://news.com.com/Video+game+therapy--+a+new+frontier/2100-1043\\_3-6051269.html?tag=nefd.top](http://news.com.com/Video+game+therapy--+a+new+frontier/2100-1043_3-6051269.html?tag=nefd.top)

## Vista Sucks, No It Doesn't, Yes It Does...

THE ONGOING BATTLE—Will Windows Vista really change our lives? Will it turn our PCs into blubbery masses of nothing? ExtremeTech's Jason Cross muses again.

Thanks in large part to the title, my article called Why Windows Vista Won't Suck got linked to all over the interweb. Of course, five minutes has now passed and the whole world has moved on, updating their blogs furiously with numerous posts about Microsoft's Origami project and more "news" about how the PlayStation 3 won't ship this Spring. Ah, the attention span of the 'net.

I wanted to spend a little time in my editorial column this week addressing some of the comments and emails I received about the feature. And boy, did I get an earful.

Certainly, response was varied. In our own forum, responses ranged from (and I'm paraphrasing here), "Hey, thanks for the great article, I didn't know Vista had such sweeping changes" to "You're just a Microsoft shill and you love DRM and you should die painfully and slowly." To those who found some value in the feature, I'm glad you liked it. To those that didn't, I'm glad you read it anyway, and I hope you just keep an open mind about all software and hardware products—from Microsoft and any other vendors.

Am I a Microsoft shill? No, of course not. Boy, having Microsoft Shill money would be sweet! I bet they pay shills a lot over in Redmond. If I were a shill for Microsoft, paid or unpaid, I doubt I would have had such negative things to say about their digital media initiatives in my column about switching to iPod. That one generated a very concerned phone call from the Windows Media Player team at Microsoft, as a matter of fact. I told them, in effect, to "put up or shut up." I want to see how they're going to compete with iTunes/iPod. I gave Microsoft latest and greatest Laser Mouse 6000 a whopping score of 3, because hey, I think it sucks. We call 'em like we see 'em over here at ExtremeTech, and we go out of our way not to let ourselves be influenced by any corporation.

All I ask is that you bear in mind what the article was all about. I thought the title, description, and introduction made it pretty clear: The feature was a description of the ways in which Vista will be more than just another Windows ME. It was a "Here's why this is a major update" thing. It's not a review, and is in no way meant to catalog all the positive and negative aspects of the upcoming OS. Frankly, it's way too early for that. We'll be sure to let you know what faults we find in the OS when it's complete enough. Just to be fair, when Steven J. Vaughan-Nichols over at our sister site DesktopLinux.com wrote a rebuttal called Why Windows Vista Will Suck, we copied over his intro, pointed to the article on his site, and put it up front and center on the ExtremeTech homepage.

There seems to be some really grave concerns and misunderstandings about the DRM in Vista. Quite a few readers seemed to think that Vista will ship with an amazing, unprecedented amount of DRM, which will prohibit them from doing all the fun non-DRM stuff they enjoy today. This just really isn't true.

<http://www.extremetech.com/article2/0,1697,1936059,00.asp>





### A Paranoiac's Pen Drive!

Kingston recently released a pen drive for the paranoid. The Kingston Data Traveler Elite Privacy Edition thumb drive has a capacity of 4 GB, 128-bit AES encryption, and the ability to erase itself if the wrong password is entered more than 25 times! Data was probably never this secure!



### XP On Mac Proved Possible

According to the "Windows XP on Mac" Web site—[www.winxp-on-mac.com](http://www.winxp-on-mac.com)—a hacker called "narf" successfully managed to load Windows XP on an unmodified Intel-based Apple Mac. Apple engineers, as recently as early March, had said this was impossible!



# Escape

HACKED IN HALF AN HOUR

## Macs Easier To Exploit?

In what turned out to be an exercise in how to insert foot in mouth, a Swedish Mac fan set up a Mac Mini as a Web server and challenged the hackers of the world to "try and gain root control." Less than six hours later, the box was compromised, and the site it was serving defaced with the message "This sucks. Six hours later this poor little Mac was owned and this page got defaced."

The hacker, who goes by the nickname "Gwerdna," later told ZDNet that he achieved the hack in less than 30 minutes. He claims to have first looked for some obvious flaws, after which he proceeded to attack the box through an undocumented exploit that Apple has no patch for yet! Whether or not this is just hot air we don't really

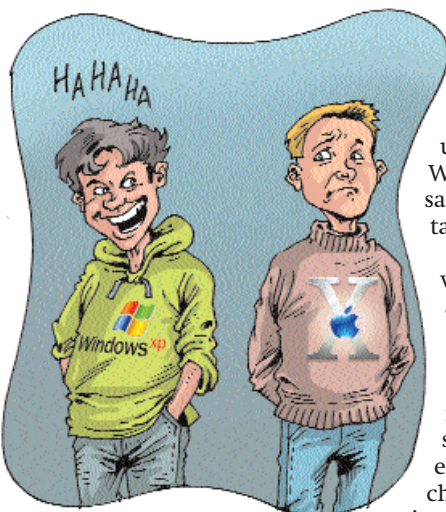
know, but the fact is that the Mac OS box was compromised in a matter of hours after the challenge was thrown out.

Considering that Mac OS has one of the smallest subscriber bases around, not too many hackers are interested in even trying

out their skills on a Mac box. This is what makes the news of the hack even worse for Apple! If hardly any hackers are training to hack Macs, and the Mac Mini was still hacked so quickly, not much can be said for security on Apple's OS.

Many believe that even a Windows box could have held out longer! So is the Mac going to become the new Windows? Well, not unless it can match Windows in terms of sales as well, which is a tall order.

Another thing we were left wondering about is that if the Mac OS is based on the FreeBSD OS, which is considered one of the most secure operating systems around, what exactly have Apple changed, and more importantly, why?



Illustrations: Harsho Mohan Chatteraj

## Whatever Happened To...

### The Simputer?

Five years ago, we all were regaled by the wonderful story of the Simple, Inexpensive, Multilingual People's Computer—the Simputer. Developed in India, it was the sure recipe to bring affordable computing to the masses—yes, even the rural masses. "Illiteracy is no longer a barrier to handling a computer," the Simputer Trust claimed, and the rest of us went, "Ooooooh!"

Constructed like a PDA—with a touchscreen and stylus and everything—the Simputer runs on Linux (of course—affordable, you know), has an Intel StrongARM 206 MHz processor, 64 MB of RAM, 32 MB of Flash memory, and can read smartcards. The simple interface based on graphics and audio was to make it illiteracy-proof. All this at only Rs 9,000 if bought in bulk. And five years ago, this seemed foolproof.

Though it's been out of the limelight, the Simputer still exists and is used minimally. All is not well, though. There's more to a great product than a great concept, and thanks to some less-than-optimal marketing, the Simputer sold only a little over 4,000 units after its release. The sad story is that with other forms of portable computing getting cheaper, the Simputer is already fighting a losing battle, though it might still stand a chance in the villages.

What happens now? Are we witnessing the slow demise of the Simputer, or is it lurking in the background waiting to take us by storm?

## Win! My Desktop

No Winner This Month! Of the many entries that we received, only a few followed the new rules—and there was no winner among them, either! We've seen you make great desktops, so why not tell your fellow readers about them?

We want to know exactly how the desktop was created. As usual, no theme packs, please! Using a shell enhancement is all right, as long as you've customised it *yourself*.

Remember, if we can't recreate your desktop the way you describe it, the entry will be rejected, so please be clear!



Send your desktop with description of how you made it to [mydesktop@thinkdigit.com](mailto:mydesktop@thinkdigit.com) with the subject 'My Desktop' and tell us your postal address, too.



## DigiPick of the month

Booting Up The  
Net!



This month's  
winner is  
**Subhash  
Bhojwani**  
e-mail:  
mirashub@gmail.com

He wins  
**Visual Basic  
Database  
Programming**



by Roger Jennings  
Published by

**WILEY-INDIA**

### WIN!

Send in your entry and you could win an exciting gift just by sharing an amusing picture with a tech angle to it. The picture should have been shot by you, and should not have been published anywhere earlier. E-mail your picture with the subject **'DigiPick'** and your postal address **on or before the 15th of this month** to **digipick@thinkdigit.com**. One prize-winning picture will be published each month.

### HUMAN ROBOTS

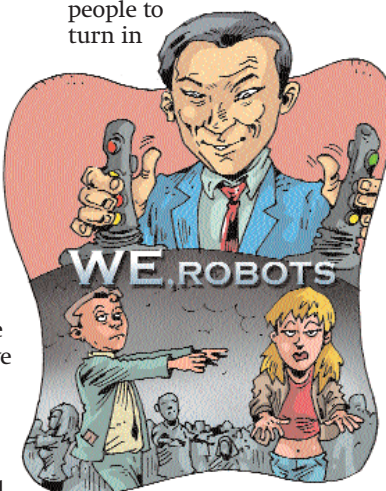
## The Jedi Knights Of Japan

**Y**es, perhaps that's what we should call Japanese company Nippon Telegraph and Telephone (better known as NTT), because they've come up with a way to make you do things you don't really want to! Though not as easily as the Jedi do in the *Star Wars* saga (with a wave of the hand), NTT has made a headset that can force a wearer to move against his or her will! The commands are passed via a pair of remote-controlled joysticks.

The device uses "galvanic vestibular stimulation" (GVS); it basically controls the wearer's balance via their ears. The headset,

which looks like a pair of large headphones, fit over the subject's ears, and balance is controlled using electrical impulses that are passed to the nerves.

Apart from forcing people to turn in



a specified direction when walking, the device also simulates the feeling of turning, even if the subject is motionless—sort of like virtual reality. Thus, the device can even trick the

wearer into feeling motion that isn't really happening.

Enough about the device though: what we're more concerned about is why someone would want to create such a technology!

Though the researchers claim they've developed the device to "enhance" a gamer's experience, we're still at a loss for why a gamer would need his or her mind controlled. Sure you could simulate more surreal motion, but are we really ready to allow games to control any part of our minds (or even ears)?

Thankfully, the device is still not something you can just go out and buy! Because it works by directly applying currents to nerves in a subject's head, it's dangerous, and if wrongly used, could cause burning of the skin or nerve damage—not something a lot of people are willing to risk just to have a more realistic gaming experience.

The technology could advance, going beyond having to attach a headset—GVS opens up a whole range of possibilities. It's the beginnings of mind control. One shudders to think about the possibilities were GVS technology to become mainstream: imagine police using it to quickly disperse crowds, or teens being forced to return directly home from school. Is this how we want to end up? Controlled by the people who can afford the technology? Let's hope there are enough upholders of human rights and ethics to cry foul when attempts to commercialise such technology finally crop up. Some technologies are better left undiscovered!

## People Who Changed Computing

### The Original Computer

It's strange that we've heard so little about Konrad Zuse, a German engineer, who probably invented the computer. "Probably," because there are several



Konrad Zuse

definitions of "computer," and one of his machines—the Z3—has a strong claim to being the first computer.

Formally, the Z3 was the first (functional) stored-program-controlled computer. The Z3 was preceded by the Z2 and the Z1, which was a binary electrically-driven mechanical calculator. All three were destroyed in WWII.

Zuse also founded, in 1946, the first-ever computer startup company, the Zuse-Ingenieurbüro Hopferau. More firsts: he founded another company, Zuse KG, in 1949, which created the Z4 in 1950. At the time, it was the only working computer in Europe excluding Britain, and the first computer in the world to have been sold! One wonders how much more Zuse might have achieved had he been born in a country such as Britain or the US during the War, instead of in Germany. Or if there had been no War at all.

Zuse suggested, as a scientific philosophy, that the universe is running on a grid of computers. After he retired, he concentrated on painting, a long-time hobby. He died in 1995.

In the words of his son Prof Horst Zuse, "Many reference works state that the first large-scale automatic digital computer was the Harvard Mark 1... However, the Z3 pre-dated the Harvard Mark I. Today, Konrad Zuse is acclaimed... as being the most admired and respected computer pioneer." Visit [www.epemag.com/zuse](http://www.epemag.com/zuse) for a biography of Zuse by his son.



# Bluff

YOUR WAY THROUGH

## Chip Fabbing

If you have a one-track mind that thinks chips and wafers are only about food, think again. There's a lot of jargon you've probably heard every day that applies to the manufacture of chips (the silicon kind you put in gadgets), too.

**Fab:** 1. *v.* To "fabricate" chips once they've been designed. E.g. "*These designs are ready to be fabbed.*" (also see *foundry*). 2. *n.* The production system itself—"*Did you hear about AMD's new fab line in <insert city name here>?*"

**Note:** Should never be interpreted as "fabulous."

**65nm *n.*** : The latest chip manufacturing process. The name means that the transistors on the chip are 65 nanometres (a billionth of a metre) wide. For reference, your hair is about 80,000 nanometres thick.

**Nanoacre *n.*** : An area about 2 square millimetres on a chip design—the smallest acre. Really, though, a nanoacre can cost as much as an acre of land if you factor in all the expenses.

**Foundry *n.*** : The company that does the fabbing. Few chip design companies have their own foundries—these facilities eat up billions of dollars just by existing.

**Wafer *n.*** : What results when you cut up a silicon crystal into thin slices. Chips are built on wafers. **Note:** These wafers are inedible, and perhaps even toxic.

**Doping *v.*** : The process of adding silicon to make it conduct electrons better—in its pure form, silicon is about as useful as the sand it's made from. So if you hear someone talking about "doping silicon," the connotation isn't as negative as it might seem.

And now, the best way to explain away a chip malfunction:

**Magic Smoke *n.*** : A supposedly magical blue smoke that is present inside all chips and keeps them from going "poof!". E.g. "It failed? All right, WHO let out the magic smoke?"

## Give us this day our daily fix

It's been a while since a gaming addiction has infested these halls—no, really—a *true* gaming addiction with obstacles to productivity and everything. The start of the month saw Raaabo and Nimish satisfying the urge to blow each other's cars up and compare Long Jump scores in Crashday till the wee hours, with the occasional guest appearance from SKOAR! editor Badri. Raaabo still continues to shatter world records in Long Jump 1 (477m, should you care to try breaking it).

Editor Deepak spent a week at CeBIT, Hannover, causing mixed emotions—jealousy, of course, at the fact that the rest of us didn't get to go to Geek Heaven, but there was also much joy and lawlessness that prevailed in his absence.

Apparently CeBIT is too much for one man to take—the size of the event boggled

his mind to the extent that he even forgot his own BIOS password when he returned ("Someone changed it!" he still insists).

We promised a follow-up on this—Raaabo and Nimish finally got the 5.4 GB NASA image of the Earth to open in Photoshop as a Photoshop RAW, but the battle is only half-won. The image opens fine in greyscale, but still stubbornly refuses to show its true colours. Then one day, Raaabo wondered why the image filled up *exactly* all the free space that was left on his hard drive when he extracted it: "What if it didn't extract properly? There could've been an error, but maybe we didn't notice it." Quick searches revealed the absence of the original compressed download, halting

progress on this front for now. The two are taking a breather from this obsession, but something tells us this isn't the end of this quest.

## DIGIT DIARY

### WEIRD NEWS

## Google's World Domination Plans!

More plans to dominate the world: if you thought the earlier story about Japanese company NTT making devices to control human movement was a step forward towards world dominance, think again! As of now only two companies show promise in the "taking-over-the-world" category: the current world rulers Microsoft, and the younger challengers called Sergey Brin and Larry Page. Since Microsoft's dominance is old and boring, let's look at how Google plans to overthrow the Redmond-based giant...

*The Register* (www.theregister.co.uk) recently published an article based on a photograph (see image alongside) of plans on a whiteboard in "Building 43" which, as *The Register* claims, is the "cyber-equivalent of Area 51"! Though a little jumbled and messy, the poorly-constructed plans on the whiteboard actually seem to be a plan to establish

"orbital mind control," whatever that means.

The plan may be a little too complex to explain here, but we can still get a rough idea of what Google has supposedly planned:

1. Buy New Zealand
  2. Set up shop in a volcano
  3. Launch a spy satellite
  4. Launch Orbital Mind Control
  5. Create clean fuel
  6. Make the Google Football Club
  7. Develop Google OS
  8. Provide the world with 100 per cent accurate weather forecasts
  9. Make robots that have AI and can repair broken computers and finally,
  10. (Our interpretation) Rule the world!
- Sounds simple enough! Well, since we're not even sure that this has

actually come from Google, there's nothing much to say. However, the one thing we have to proclaim is that whoever drew this brain map may be a genius, and perhaps evil as well, but if Google's stock market results are anything to go by, it may be a few decades before Google even attempts a coup on good ol' Bill!

### "IPODS CAUSE HEARING LOSS!"

## Pump Down The Volume

There's news, then there's stupid news. We've already learnt to trust Americans grab by the b\*\*\*s any opportunity to sue, and recently, Apple was sued by a US man who says his iPod can cause loss of

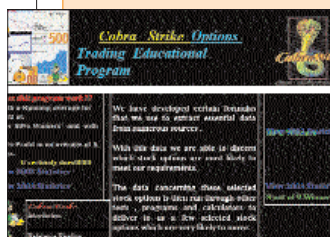




# whatweretheythinking.com

## www.cobrastrike.com

Somewhere, somehow, there's got to be a connection between Cobras and stock options. "Cobra strike options trading educational program," the page is called, and the main text says: "we have developed certain formulas... with this data we are able to discern which stock options are most likely to meet our requirements." OK, so it's something about investing. Then the pitch: "we offer to you the opportunity to purchase our cobra strike



straddle options calculator including instructions in e-book form." Now, on the left: "purchase of cobra strike" "monthly exercise #1"

And on it goes. The links, though, are on the Chinese-looking character to the left of the text.

Oh, we forgot: near the top is the following—"does this program work??"

With a running average for 2002 of: over 80% winners and with a

We're not biting this one...

45% profit in an average of 8 days. It certainly does!!!!!!"

"view 2002 statistics" "view 2003 statistics"

These two link to interesting JPEGs. The Chinese character features on these pages as well—he's a mascot of sorts. There's some good-versus-evil thing going on here, since the cobra is always juxtaposed opposite him.

Clicking on any of the "exercises" brings you to a page where you fork out \$2,500. Disclaimers dominate these shell-out pages. We clicked through to transfer our hard-earned money, but it was not to be—"Parameter Error"! We saw "http://mlm-norway.com/modules/" somewhere in the source—and you guessed it: mlm-norway looks like a get-rich-quick site. Cobrastrike.com is ostensibly a failed offshoot—the ringleaders seem to have abandoned work on the project when they found the cobra-stock connection wasn't apparent enough.

hearing. The lawsuit claims iPods are "inherently defective in design and are not sufficiently adorned with adequate warnings."

Also in the news these days are reports—yes, those officious-looking, billion-dollar-funded project reports—that iPods can cause hearing loss. Like we didn't know that. Like listening to anything at high volumes doesn't cause hearing loss.

This is just a repeat of what happened a couple of decades ago, when the Walkman was blamed for causing hearing loss. Why does the iPod manage to hog a goodish portion of the news every month?

Apple was forced to rework the iPod for France after it was shown to exceed the country's decibel limit of 100. But then, if you really want to damage your ears, you could just pick up a pair of lower-impedance headphones. You can take a horse to the water...

People in some countries use iPods to drown out the noise of subway trains: "The sound in the trains is

already high, so people pump up the volume levels on their players, just adding to the possible damage..." Can't Apple just advise people to use noise-cancelling phones? Or even bring out an iPod with a pair of those?

Now here's the latest: "More research is needed to determine whether popular portable music players like Apple Computer Inc.'s iPod increase the risk of hearing loss, the National Institutes of Health said." Yes, fund that research with a billion more dollars! Why isn't it part of common sense that if you use headphones for extended periods at loud volumes, your hearing is going to suffer?

On a serious note, though, ear-bud style phones, like the ones used with iPods, project sound directly into the ear canal, while earmuff-style ones allow the sound to diffuse. Apple should probably consider switching to earmuffs if they don't want these officious reports to lead to a class-action suit! ■

## Blog WATCH

Some people think Google Mars isn't such a great idea. Then, there are people who think the Internet too isn't a great idea... And no-one's sure if Origami is a great idea, but you can check out the timeline of its development. And finally, is blogging a good idea?

Joe

<http://snipurl.com/aprilblog1>  
(<http://techdirt.com/articles/20060306/086230.shtml> #comments)

### Don't Be Hurt, Internet, Some People Just Don't Care About You

Believe it or not, some people just aren't interested in the Internet. In recent years, the growth rate for Internet adoption has slowed dramatically, while those saying the Internet doesn't interest them outnumber those who can't afford to get online. What matters is whether individuals use their time productively and pleasurably, not whether that time is spent online...

Ouriel

<http://snipurl.com/aprilblog2>  
([http://ouriel.typepad.com/myblog/2006/03/google\\_mars\\_thi.html](http://ouriel.typepad.com/myblog/2006/03/google_mars_thi.html))

### Google mars: this is what happens when you have too much money...

Google just released mars.google.com. When my colleague told me so I thought it was a joke. But I checked further and I indeed find it. Doing Google earth was a smart idea. Copied by everyone since then. But Mars? What the hell are they going to do there? Locate the nearest pizzeria?

Come on guys. Make us a better down to earth search engine and invest your money in something that makes sense!

Dustin

<http://snipurl.com/aprilblog3>  
([http://origamiproject.com/blogs/team\\_blog/archive/2006/03/09/19.aspx](http://origamiproject.com/blogs/team_blog/archive/2006/03/09/19.aspx))

### What's the Hubbub?

O.K., if you are reading this blog chances are you've in one way or another heard about the "Microsoft mystery" project named Origami. You probably also know by now that Origami was the Microsoft code name for the Ultra-Mobile PC project. We liked the code name so much we decided to use it for our community site, [origamiproject.com](http://origamiproject.com).

So, what was that teaser all about? Well, since I was a primary driver of the buzz campaign, I thought I'd set the record straight by using a timeline to illustrate how events unfolded....

Jeff Jarvis

[www.buzzmachine.com](http://www.buzzmachine.com)

### Lesson No.1

Georgina Henry, an accomplished newspaper editor, makes the switch to blogging, heading up The Guardian's week-old Comment is Free, and she takes away the most important lesson: "the randomness, that sense of never quite knowing who's going to post when and what, is both the joy of the new site and slightly scary. It's the lack of control you feel you have at times - and control, I realise, is the one of the hardest things for editors to cede."





## Calendar Please!

The March issue was *superb*! The article on XML made all the difference. I know you're positioning yourself as a digital lifestyle magazine, but a lot of us geeks out there really love to roll up our sleeves and get to work on something other than PPTs, so more of the same please. How about articles on things to do to your mobile phone, are there cheat codes for mobile games?

On the subject of suggestions, I've got a peculiar request. It would be great if you could include a monthly fold-out calendar that one could put on soft-boards on our desks, with stuff that is bound to make people stop by to start a conversation (the calendar is just an excuse to have it on our desktop, justification is needed due to increasingly paranoid BPO security policies). I'm sure you'll be able to come up with something; screenshots and cheats from games, A-list of shortcuts and tips for XP, Excel, Winamp or even PowerPoint if you must. Anything that will make people curious and get them talking and make them aware of technology, and a desire to walk with those who hack, crack and cheat at Minesweeper.

**Raja**

Dear Raja,  
It's good to know that you found the XML article interesting. I agree we took the unusual decision of entering the developer's domain by including this article. Hitherto, we have always been a technology and gizmo kind of magazine, but sometimes we do drop our guard and try and find something that can be as enticing for even non-developers or programmers, and get a bit geeky ourselves. Our Tips & Tricks this month is partly devoted to Mobile Devices, so your first wish has been granted. As for your suggestion regarding a calendar or a desktop to lure others at your workplace to enter into a technology or a so-called digital conversation, well, this can be done. In fact, it's a very good idea—let's try and figure out what's best that *Digit* can give with its CD/DVD, or even as a New Year calendar for one's home or workplace. Keep writing in!

—Associate Editor

## Tales Of An Overclocker

Would the world work faster if we overclocked it? Can I overclock myself? This was the question I had when I read about it in your magazine five years ago. I was in high school then, and the

"geek" word had just spread around campus, with my name associated with it.

Here's a true story that happened at my school—Sudarshan Vidya Mandir—in Bangalore: my friends and I decided to overclock our library PC. We tried to use the BIOS for tweaking, but the speeds were locked. We had to play with the DP switches on the board to remove the lock. We increased the multiplier by a factor of seven! In no time the fan started to emit thick white smoke—the processor had burnt! We made up a story to tell our teacher: there was some kind of power surge. And the PC was replaced with a brand-new Pentium 4. (Though finally one day we confessed and the teacher forgave us.)

Overclocking still turns me on, and I hope millions of Indians out there will be inspired to do so.

**Ajaykumar K S**

Dear Ajaykumar,  
We do a bit of tampering with our PCs now and then, but overclocking is not something we indulge in too often. Can't be burning out so many computers time and again, you see. But I am glad that *Digit* got you hooked on to this passion so early on in life. Not that we would advise our readers to go ahead and overclock their PCs beyond the limits, but yes, being a geek sometimes involves such indulgence!

—Associate Editor

## Digit Games Poster?

The *Fast Track to Troubleshooting Your PC* was excellent! With the help of that I've been countering 99 per cent of my problems. I'd really like to thank *Digit* for publishing something so useful. I'd like to give two suggestions too:  
' If possible, publish a *Fast Track to Graphics Designing* with tips and tricks.  
' It would be really good if you included one poster (or more!) of the games you review in the magazine every month! Eagerly looking forward to the next issue.

**Eshwar**

Dear Eshwar,  
Glad to know that our March *Fast Track* will prove to be a source of help for many of your



PC problems today and in future. Your suggestion number one is already playing on our minds—watch out for our future issues of *Fast Track*, they will definitely enter the graphics designer's domain. As for your second request, well, we can certainly either publish the poster ourselves or source it from the game developers; to circulate any poster with games would require permission from the game developer.

—Associate Editor

## Audio-Video Formats

Hey Mr Editor,

I have been reading *Digit* since your first issue. I owe a lot to both your magazine as well as the Thinkdigit forums—especially now that I've made so many cool friends!! Why don't you guys publish an article running a shootout for various video and audio formats such as MP3, MP4, etc. It would be of great use and interest to many readers.

**Praveen**

Dear Praveen,  
Glad to know that our forums and magazines have been a good resource to increase your tech quotient. Shootout of audio-video formats is indeed a valuable suggestion, although let me tell you honestly it is purely subjective and merits of each one can vary depending on one's own needs. Yet, still, let me try and figure out if we can do this.

—Associate Editor

## Give Me Something To Do!

Dear Editor,  
I'm in the 9th standard, and have been a patron of yours for the past four years. You guys rock. By referring to your issues, we've won loads of quizzes and contests at school. However, we're on vacation now, and are getting really bored... I suggest you publish some kind of project that your numerous teen readers could undertake. A couple of years ago, a similar magazine had published a step-by-step creation of a little car that connected to the parallel port and with some C++ programming, could be controlled through the PC! Using simple equipment that are easily available, who wouldn't want something like that on his desk? Do think of something on these lines, which would help all your teen readers indulge in some cool and creative gizmo making....

**Abhinav Nayar, Jamshedpur**



## Write to the Editor

E-mail: editor@thinkdigit.com

Snail Mail: The Editor, Digit, D-222/2, Om Sagar Building, MIDC, TTC Industrial Estate, Nerul, Navi Mumbai 400 706

Digit will publish the best letters on these pages. Letters may be edited for clarity. You must include your complete address in all communication.

For subscription queries, call the help desk at 022-27629191/9200, fax 022-27629224, or send an e-mail to help@jasubhai.com

# Inbox

Dear Abhinav,  
We're aware that a large proportion of our readership is in your age range. We are indeed trying to include more DIY kind of stuff in our magazine—keep reading *Digit*, you might soon find something that gives your itchy hands a break!

— Associate Editor

## Suggestions, suggestions

First of all, accept my sincere thanks for your *Fast Track* on Troubleshooting. It was really a boon for me. Now I solve any problem regarding my PC myself. Your article on Vista was also remarkable, but the CD and DVD contents were not up to mark. I have some suggestions:

' Please bring out a *Fast Track* on image editing software such as Photoshop, Corel Photopaint, etc.

' If possible, bring out the *Fast Track* in colour even if you have to increase the price.

' Increase the number of software reviews.

Akshit Gaur

Dear Akshit,  
We've been receiving several requests for a *Fast Track* on image editing software, and it's very likely that we'll bring out one soon. We also know we should get heavier on the software reviews, and that will be implemented soon as well. As for bringing out *Fast Track* in colour, the fact is, the price will indeed have to be increased - which not too many readers will appreciate!

— Associate Editor

## Bored Of Windows!

Dear Sir,  
I think your magazine is the best computer magazine around. I'd highly recommend it to anyone, and I myself buy every issue—can't wait till the next issue is out! I have an Acer laptop running Windows XP. I am thinking of moving to an Apple iBook. Could you do a full review on the transition problems, pros and cons, and compatibility issues?

I would love for your magazine to start reviewing more alternative OS-based computers. I think a lot of readers would appreciate it. It will give us a perspective on what's out there, other than MS Windows! I hope you would take heed of an avid reader's request, and have a complete Mac review in your next issue.

Gaurav Vadehra

Dear Gaurav,  
The fact is that we did consider a *Fast Track* on something Mac-related. We've also done a couple of Mac-related features, such as one *30 Days With*. However, the fact also is that few of our readers own Macs! Yes, a Mac holds aspirational value, but when you think of our mainstream readership, everyone uses Windows. It's sad but true. Nevertheless, we have devoted an entire *Fast Track* to *Linux* this month, so that should give an alternative OS option to people like you.

— Associate Editor

## Fast Track soft copy?

Dear Sir,  
As a *Digit* subscriber, I receive a booklet in addition to two CDs each month with a copy of the magazine. These booklets titled *Fast Track* contain very valuable information. But of late, due to poor eyesight I am finding it increasingly difficult to read them. It would be of much help if you could make these available as e-books with contents as either Word or HTML documents. If need be, I am prepared to make a nominal payment for this facility being made available. Kindly give this request careful thought.

H Subramanian

Dear Mr Subramanian,  
We do give out the *Fast Track* in PDF format once every few months on the CD or DVD. The last time we did so was in January 2006—it was on the DVD; you probably missed it. Do look out for the *Fast Track* PDF on future *Digit* CDs or DVDs.

— Associate Editor

## Money Saved...

The March 06 *Fast Track* to Troubleshooting was a brilliant effort by *Team Digit*. It covered almost all the topics. The article on BIOS and sound helped me a lot. I thank you for not only solving my problem, but for saving my money as well (which vendors charge for doing no work!).

Atul Sharma, Ludhiana

Dear Atul,  
We know that a lot of hardware vendors and computer repair shops charge a lot for problems that require just a bit of knowledge and no hard work—and we're glad our *Fast Track* helped you! Thanks for writing in!

— Associate Editor

## A Laundry List

Hi Ed,  
The A-List is a quick reference for us. Please try and expand it—for example, mid and low-range graphics cards are not given, only the high-range cards are mentioned. Also try and devote pages in the A-List for software; this is absolutely essential! Two software each for paid as well as free should be given which you think are the best. It could be updated each month too as you find good software.

The sections could include word processing, spreadsheets, 3D modelling, morphers, video editing, audio editing, image editing, etc.

Also include games in the A-List—for example, different genres such as RTS, Action, Adventure, Puzzle, FPS, Racing, RPG, etc. It should contain the names of two games that you think are currently the best.

Also, how about including the best Web sites, classified according to genres—news, games, software, tech?

In the *Digit* Archive, I put in "karaoke" in the "search by description," and the Feb 06 CD came up with two software; both were shareware, and in those versions, the karaoke feature had been not included. This means that in the entire history of *Digit*, you haven't included a single karaoke player! Do something about this. I would like to see a headphone shootout - wireless, wired, over the head earphones, behind the head, etc.

Please run articles on:

' Displays affecting the eyes, that is, which is the most eye-friendly display, and which display (LCD, TFT, CRT, plasma) an eye-conscious person should go for.

' Home Internet plans; which is the best—cable, DSL, or wireless?

Ken Thompson

Dear Ken,  
We're planning on doing a feature on broadband shortly—as well as a headphone shootout, though that might be a few months away.

Featuring games on the A-List wouldn't be correct, since gaming experiences are subjective. However, expanding the A-List in general, and putting in more software, are good ideas, and we might very well implement these. Thanks for the suggestions.

— Associate Editor

LETTER  
OF THE  
MONTH



# Tabloid TECH

People And Events That Grabbed Headlines—For Better Or For Worse

## The iPope!

**W**e promise this will be the last piece in this space about the connection between The Faithful and the iPod. But here's the latest: Pope Benedict XVI unwinds by listening to music on his iPod: he was gifted an iPod Nano by staff at Vatican Radio. Officials have, of course, loaded it with religious music, but there's also pieces by Beethoven, Mozart and Chopin. Religious compositions such as the Missa Solemnis, we presume.

The Pope has been spotted around the Vatican using his



iPod with its distinctive white earphones. A spokesman for the tabloid *The Sun* said: "He is very pleased with the iPod. The Holy Father likes to unwind listening to it and is of the opinion that this sort of technology is the future."

Here's an open letter to the Pope: Holy Father, we'd like to remind you the Walkman has been around for decades—you could have unwound just as easily using one of those! Please do tell us what this thing is about the iPod and The Faithful!

## Skyping Penelope Cruz

**"C**lear your throat, lose those jitters, and get set to Skype Penelope Cruz! For the first time ever, you can bid to spend 10 minutes of Skype time with Penelope Cruz. Get your questions ready, it is certain to be a memorable experience.

"100% of the proceeds will benefit The Art of Elysium, a Los Angeles-based organization that encourages artists to dedicate their time and talent to underserved, at risk and hospitalised children..."

"About Penelope Cruz: Penelope Cruz has proven herself to be one of the most versatile, young actresses by playing a variety of compelling characters..."

That's the gist of an eBay auction we caught on 15th March. It ended that day,

but worry not—you probably will still be able to Skype Ms Cruz (and other celebrities), because we found that a similar auction had ended 3 March. Google "Skype (celebrity name)", and you just might have luck on your side.

One small hitch, though: you'll never be able to find whether it's for real, because you probably don't have voice recognition software installed. But here's an idea—involve your sister and create your own "Skype Aishwarya" auction!

## Liberty Or Death!

**G**uillermo Fariñas Hernández, a 41-year-old Cuban psychologist, wants to surf the Web without restrictions or censors. That's easy for you and me, but the government in Cuba controls Internet access, and it is only possible to visit local sites. Hernández wants the government to respect his right to information, so he went on his first hunger strike on 31 January. He gave it up on 9

February, but resumed it later and has thus far done 20 of these fasts.

Pictures of Hernandez on the Internet show him in an emaciated condition, and there are even a couple of before-and-after pictures. There are several blogs that keep you updated on what's happening, and a few that ask you to petition for him. Spare a thought for someone who can't go Googling whenever, wherever!

## Show Me The Source

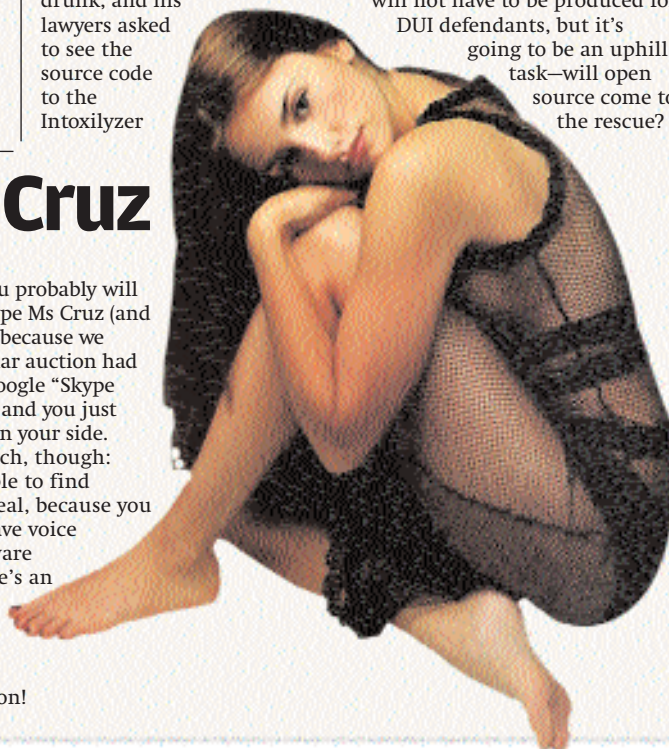
**I**n the US, it's your right to face your accuser in court. Of course, but things get all topsy-turvy when that accuser is a piece of code.

Proving that American lawyers can uphold just about any case, they are now getting drunk drivers off charges by demanding to see the source code of the software used in alcohol breath tests. And they have a valid precedent: Timothy Muldowny had been driving drunk, and his lawyers asked to see the source code to the Intoxilyzer

alcohol breath analysis machine—which was the police's main evidence against him. The company, of course, did not want to hand over the code—and Muldowny's case was chucked! Ever since then, DUI suspects in various parts of the US have had their cases thrown out or reduced to lesser offences.

Lawmakers are now considering bringing in new laws that will mean source code will not have to be produced for

DUI defendants, but it's going to be an uphill task—will open source come to the rescue?



### 3-Easy-Steps to Freebies!

- 1 Log on to [www.thinkdigit.com/digitpatron](http://www.thinkdigit.com/digitpatron) to register.
- 2 Enter this 16-digit code and score points (you will find your code at this place every issue)
- 3 Your points get added every month and can be redeemed for exciting gifts!

