

August 2007

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digit

YOUR TECHNOLOGY NAVIGATOR

Smooth Talkin'

39 of The Coolest Cell Phones Tested!

Riding The Stream With
The Latest GPUs



On The Lot: Your Own
Open-source Movie

Dual-boot Joy: Share Firefox
and Thunderbird Dat



Build Your Own NAS
Server



LINUX SPECIAL

- ▶ 10 Distros With A Purpose
- ▶ Linux Desktop Environments
- ▶ Tips 'n' Tricks: Open Office Calc, Evolution mail client

Editorial

Vendor1, Consumer2.0

TECHNOLOGY—IN PARTICULAR the Web 2.0 phenomenon—played an interesting role last month in the upcoming 2008 American presidential elections. CNN teamed up with YouTube for a telecast of its popular debate amongst the Democratic presidential candidates. Voters invited via YouTube posed questions directly to candidates and raised issues of concern to *them*—not policy matters of interest to the journalists or the so-called expert panel that so often graces such events.

Viewers of the debate, aired on CNN, saw videos of people asking their own questions—and the Democratic presidential hopefuls were to answer them all. The inclusion of these videos in this year's debate ensured politicians did not skip or gloss over questions. It might be possible to ignore a question (or refuse to answer one) when confronted by a journalist, but you dare not do that with your voter. The CNN-YouTube debate saw the highest viewership for a debate among adults aged 18 to 34 in the cable news history of America.

Though CNN got to choose the video-queries that were aired, this ultra-democratic orientation, as tech would have it, to the American presidential elections has possibly altered the way political debates—at least American ones—will be conducted in the future. It has brought in more accountability to the process of electioneering.

Now let's please not speak about Indian elections being radically revamped by YouTube. Imagine our politicians confronted with a thousand YouTube videos talking about "mundane" issues as taxation and inflation...

But leave aside the politicians—the Web 2.0 phenomenon has certainly reached Indian shores. The effects of YouTube-aided citizen activism were witnessed in India last month: an unhappy resident of the prominent Unitech Builders' residential project—Uniworld City—in Delhi uploaded a video on YouTube detailing his all-too-common builder-related problems. The video graphically portrayed the builder's lackadaisical approach towards its maintenance, the unfulfilled promises of a functional swimming pool and a children's swing. This video was uploaded as a last resort by the residents: their complaints to the builders had fallen on deaf ears, they knew.

YouTube did come to their rescue. Within a few days, there was a sudden turnaround by Unitech—they did what was required. The promised pool is now



Deepak Ajwani Executive Editor

“Months' worth of complaints and letters to a company and a community Web site could not achieve what a video aired on YouTube did”

ready to use, and the swings have been fixed.

Months' worth of complaints and letters to Unitech and a community Web site could not achieve what a video aired on YouTube did.

Indian consumer-product companies are warned. They'd better realise the potential of Web 2.0, in particular, the power of the tools it brings to the consumer. If corporate America is crazy about lawsuits, we as consumers in this country are crazy about complaints—and rightly so, looking at the way we are treated. Accountability takes a nosedive when there is confrontation; moral responsibility is absent in this vendor-is-king situation; we in this country sometimes just do not have enough decency, and we've gotten used to it.

Tech can change this; in the social sense, it is the magic leveller. Sure, those with the upper hand won't like it, but nothing will prevent me and you from logging on. Do it.

A handwritten signature in black ink, appearing to read 'Deepak'.

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



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Want your product reviewed by *Digit*?
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Software On DVD/CD

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 I-mate Jasjar
 Nokia Communicator E90
 Nokia E50
 Nokia E61
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 O2 Xda Stealth
 O2 Xda Zinc
 RIM BlackBerry 8800
 RIM BlackBerry Pearl
 Sony Ericsson M600
 Sony Ericsson P990i
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Multimedia Phones 55

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 LG KE820
 LG KG920

Motorola KRZR K1
 Motorola ROKR E6
 Nokia 5700
 Nokia 6300
 Nokia 8800 Sirocco
 Nokia N70
 Nokia N73ME
 Nokia N80
 Nokia N93
 Nokia N95
 Samsung SGH-E490
 Samsung SGH-E840
 Samsung SGH-X820
 Sony Ericsson K790i
 Sony Ericsson W610i
 Sony Ericsson W810i
 Sony Ericsson W880i
 Sony Ericsson W950i

SOFTWARE

Off-beat Linux Distro 28

Damn Small Linux 3.4
 SLAX Standard Edition 5.1.8.1
 GeeXboX 1.1
 Dyne:bolic 2.4.2

Ubuntu Studio 7.0.4
 Ebox 0.9.1
 AsteriskNOW Beta 6
 Edubuntu 7.0.4
 IndLinux - Rangoli 1.0b
 live.linux-gamers.net 0.9.2

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Hardware

ASUS P5K Deluxe
 Billion BIPAC 7402G
 Canon PowerShot A460
 Corsair Dominator XMS2
 Foxconn P35A
 Gigabyte GA-P35-DQ6
 MSI P35 Platinum
 Samsung SyncMaster 932B
 Thecus N4100
 VU Boss

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Corel Paint Shop Pro Photo XI
 XMIND 2007
 xplorer²
 ZoneAlarm Security Suite 7.0.363.000

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ISPs should not be responsible for users' behaviour...?

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FileRights: the all-new P2P copyright defender

Digital Passion

28 Pimped Out Penguin

A problem of plenty is the case with Linux distros, we think. So why not enjoy it?

Reviewed: off-beat distros for specific purposes, from networking to gaming



Insight

21 Riders On The Stream

The G80 and the R600—from NVIDIA and ATI—are hot names in the graphics card empire. So what's the difference? Plenty! All demystified here!



Do It Yourself

26 Share Firefox Between Windows and Linux

Dual-booting, are we? Feels powerful, doesn't it, an OS for a task... but some things can be a pain. Like Firefox profiles. Get over it.

30 Days With

36 The Serpent And The Arachnid!

A mouse and a keyboard, that's what our reviewer spent 30 days with. And he actually bothered to write all about it. But they're Razer, and they aren't 200-rupee devices...

38 Droolmaal

It is indeed about how much good stuff costs, but we like the good, not the cost. We liked a certain set of cans from AKG, an Alienware machine that isn't all about gaming, a Klipsch speaker set with an exquisite name...

40 Take A Crack At

Yes, yes, you're the budding system admin spouting filth at worms contemptuously called "users." So can you disable access to the Control Panel? And the printers as well? *Win!*

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Digital Tools

Main Story

41 On The Lot

First find out what an open source movie is, and if that sounds cool, go about making one. We can't go into too much detail, to be frank, but here are the basics



Agent001

88 Onboard's Awful!

In this day and age and era and century, are you *still* stuck with an onboard graphics solution? Your trusty Agent eases you along the way to graphics card glory

Know More About

90 Linux Desktop Environments

Desktop Environments are the platforms that decide the rules of dragging and dropping, look and feel of the OS, etc. It goes beyond KDE and Gnome

3 Incredibly Useful Sites

92 New-age Wonders

Web 2.0 is usually light on the eyes, but some of these newfangled sites *are* very utilitarian. Build a WAP site, find a Web 2.0 application, use a cool new news aggregator... at these sites we've reviewed

Cover Story

46 A Cell, A Bell, And A Whistle

Presenting phones you know you want, and which will do your ego proud, and which are useful at the same time—and they don't *all* cost an arm and a leg!



Digital Business

Smart Business ☒

102 Lockdown

Laptop and PDA and Bluetooth and cell phone and Wi-Fi and lots and lots of data all over, in tangible and intangible state, begging to be *locked down* before they're stolen and misused? Here's a good dose of paranoia



Trend ☒

108 Companies Going Green

You've seen it in processors and other hardware. Now we're seeing it in technology companies, this drive towards eco-friendliness—they're trying to save on paper and electricity. They're concerned for the environment. They're taking the baby steps.

Tech Careers

97 Master Of Penguins ☒

It takes more than a geeky (or aspirational) interest in Linux to make a career of your knowledge of it. But you can. Constant learning is key, as are several other factors... We've clarified a lot of the things you need to know if you *think* you want a career in Linux. The upside? The downside? The good, the bad?



Smart Soho ☒

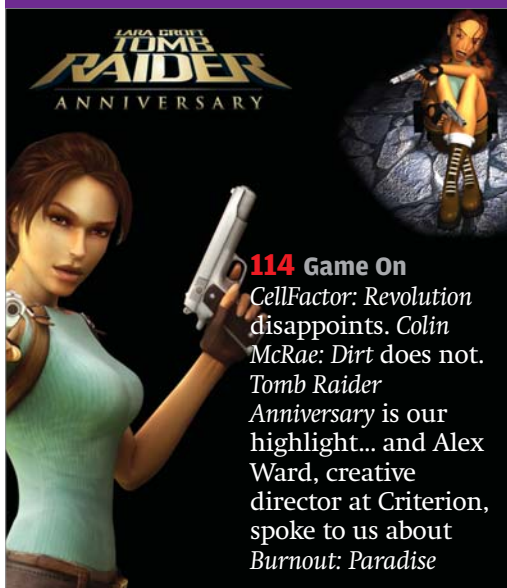
104 The Devil Has Your Data

Put an old computer to good use: make a NAS (Network Attached Storage) server of it. This is essentially a cheaper alternative to a dedicated file server



August 2007

Digital Leisure



114 Game On

CellFactor: Revolution disappoints. *Colin McRae: Dirt* does not. *Tomb Raider Anniversary* is our highlight... and Alex Ward, creative director at Criterion, spoke to us about *Burnout: Paradise*

Touched by Tech

111 Generosity 2.0 ☒

Do we upgrade too often? Yes... Do those old boxes need to be trashed? No! Do more with them than recycle the parts. Here's what, and how



Tech Quiz

132 Of Lasers And Security

If you get them all correct, we won't give you anything! But you can tell your friends you did... and quiz them while you're at it

Tabloid Tech

133 Accessories Anonymous

Our monthly dose of all the celebrity stuff that does the rounds on the Net, and what Big People are doing with and about tech

Escape



121

James Ferguson gave us liquid crystals in a form such that they could be put to good use

120

Someone got so immersed in a game, they forgot to give their kids *food to eat!*

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DUAL LAYER
8,700 MB Of Quality Content!

Productivity

PERSONAL **Celestia-1.4.1-ED for Windows**



Celestia is a free space simulation that lets you explore our universe in three dimensions. Unlike most planetarium software, Celestia doesn't confine you to the surface of the Earth. This is a customised version of Celestia, made for use with the educational add-ons provided in this DVD. Be sure to check them out!

- Celestia Educational Activities 1 & 2 - The Universe
- Celestia Educational Activity 3 - The Inner Solar System
- Celestia Educational Activity 4E - The Outer Solar System-Extended
- Pagico (Basic) 2.1.0626
- pdf-Office 6.0.2
- Platinum Word 2007 Gold Edition
- XMIND 2007

DEVELOPERS **C Code Library 1.7.6.21**



C Code Library is a powerful multi-language source code library with the following benefits: 1. Built-in library with 50,000++ lines of code 2. Quick and powerful search engine 3. Powerful printing capability 4. Password protection & strong 448 bits encryption (optional) 5. User notes & attachments handling 6. Favorites & rating support 7. Full integration with *all* major programming IDEs And much more!

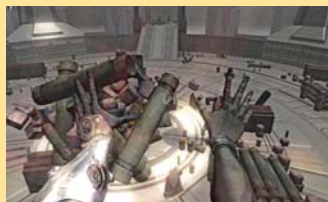
- Microsoft Expression Blend 2 May Preview
- myApps



- VcSmith 2.2.2
- Advanced Installer for Java 5.0
- C Code Library 1.7.6.21
- Editor.NET 1.47

Gaming

FREE **CellFactor: Revolutions**



CellFactor is an FPS with an epic storyline, set in a warfare industrial atmosphere. It features 3 playable main characters, each with distinctive play styles. It was created to promote the Aegia PhysX card, though you don't need one to play the first two levels of the game.

Hidden & Dangerous 2: Sabre Squadron

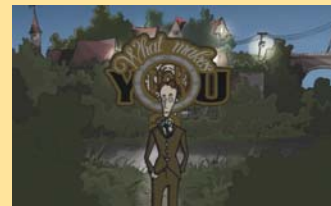
Reprise your role as commander of the elite Special Air Services (SAS) in World War II as you take on the Axis Powers in nine new missions set in France, Africa



and Sicily. Fight through these campaigns alone or play co-operatively with friends. Sneak past enemy lines, infiltrate heavily guarded bases and outposts, and utilize superior tactics to eliminate the opposition.

What Makes you Tick

Young Nathan has been sent by his university to deliver an important message to a retired professor. We are not initially told how or why the university knows this information, but the professor's life is apparently in danger, and Nathan must find him. He is sent to the professor's last



known residence somewhere in the countryside, and he soon learns that he is not the only one seeking the professor.

- In Cubation
- UFO: Alien Invasion

DEMOS **Ratatouille**

Fast-paced game packed full of missions, mini-games, daring heists, frenzied pursuits, and wild chases!! Relive the movie's most intense action scenes through the eyes of Remy.

- G.H.O.S.T. Hunters: The Haunting of Majesty Manor

Tools

MULTIMEDIA **Bryce 5.5**



Create breathtaking realistic 3D landscapes and animations with DAZ 3D Bryce. The easy user interface simplifies the design process for a novice or the seasoned professional. Start out building or importing a landscape as impressive as the Grand Canyon. You'll have to register your copy of Bryce at www.daz3d.com/bryce55 to gain access to your free Bryce serial number.

Softimage XSI Foundation Trial



Spend some quality time with the most advanced 3D animation and character creation software. Experience XSI's Gigapolygon core, elegant artist-friendly interface, and non-destructive workflow for modeling, character set-up, animation and rendering. You will need an active internet connection for this to work.

trueSpace 7.5

trueSpace7.5 modeling capabilities are unmatched. You have at your fingertips literally hundreds of modeling tools for



polygonal modeling, Subdivision surfaces, NURBS, metaballs, implicit surfaces, you name it, all accessible via intuitive direct manipulation interface. You need to register at

- http://cart1.caligari.com/ts5demo/form_downloadts7.asp?adsouce=&v=TS75 for your trial serial key
- AnimatorDV Simple+ for home use
 - aBasic Editor 10.4
 - Sony Sound Forge 9
 - Ulead Cool 3D Production Studio

SYSTEM **Autopatcher XP May 2007 Core Release**

This release is based on the all-new AutoPatcher 5.6 for Windows XP SP2 (x86)

Vembu StoreGrid Backup Software-Free Edn 2.2.1



'Vembu StoreGrid' is a very well designed backup and restore utility. Ideal for small networks, StoreGrid can facilitate intranet, client-server, and remote backups.

- Quick Heal Total Security 2007
- FreeNAS
- Microsoft XNA Framework
- Parted Magic 1.7
- FlashBack 1.21
- Hard Drive Inspector Standard Edition

INTERNET **Apple Safari for Windows 3.0.2 (522.13.1) Beta**

Experience the web, Apple style, with Safari: the fastest, easiest-to-use web



browser in the world. With its simple, elegant interface, Safari gets out of your way and lets you enjoy the web—up to 2 times faster than Internet Explorer.

Caligari iSpace




For web designers and developers who want to design the different look of their website, iSpace provides a web graphics design tool that enables the creation of stunning 3D web graphics. Working in concert with traditional web design tools, iSpace delivers the full range of 3D capabilities in a familiar drag & drop environment. Unlike other 3D web design tools, iSpace works seamlessly with your main HTML editor such as Front Page, Dreamweaver or Adobe GoLive and uses a standard HTML format for input and output of the entire fully formatted page. iSpace is also an ideal companion tool for a trueSpace artist who wants to create an HTML page or 3D libraries for iSpace itself.

- Collanos Workplace
- IVBot 2.0
- oSync 0.8.1 Beta 2
- Qnext (Video Conferencing) 3.0
- Windows Live Mail Desktop 8.0.1226 Beta
- Caligari iSpace
- Mundu Radio
- Radmin Remote Control 3.01

INTERACTIVE

LINUX SPECIAL



ArtistX is a live DVD which turns a computer into a full multimedia production studio. It is based on Debian GNU/Linux and contains nearly all the available free audio, 2D and 3D graphics, and video software for the GNU/Linux computing platform.

**LG3D Live CD**

LG3D is based on Sun's Looking Glass Project. Imagine this stunning 3D environment on your desktop—in less than two minutes. Just burn the CD and get going!

**LinspireLive!**

Test drive Linspire Five-0 and the innovative CNR Service, your ticket to thousands of popular programs. There's no need to install anything on your hard drive. LinspireLive! boots and runs directly from your CD drive, and it won't affect your current system or settings.

**NimbleX 2007v2**

NimbleX is a small but versatile operating system which is able to boot from a small 8 cm CD, from flash memory like USB pens or Mp3 players and even from the network. Because it runs entirely from a CD, USB or network it doesn't require installation or even much hardware. NimbleX is based on Slackware with the use of linux-live scripts and it has a lot of this distribution advantages.

**Damn Small Linux**

It's the smallest fully functional Linux distribution you can get your hands on! Boot into it from a mini-CD, USB Flash drive or even from *within* Windows!

Entertainment



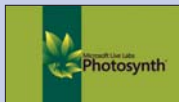
VIDEOS

23rd Chaos Communication Congress: How to Design a Decent User Interface

Take a look at software from a user's point of view and improve your applications. Prepare to be brainwashed! This talk wants you to switch from the developer's perspective to that of an average user to design better UIs. Open the video in VLC Media Player or Media Player Classic—you can find them both on this month's CD

23rd Chaos Communication Congress: Body hacking

What happens when we leave behind cosmetics and start to modify our bodies and minds to enhance who we are and what we can do? In this talk, journalist Quinn Norton explores how technology and flesh are coming together. (from the 23rd Chaos Communication Congress) Open the video in VLC Media Player or Media Player Classic—you can find them both on this month's CD

**Microsoft Live Labs Photosynth Demo**

Photosynth takes a large collection of photos of a place or object, analyzes them for similarities, and displays them in a reconstructed 3-dimensional space. Watch this demo to see what it's capable of.



MOVIES

Dr. Jekyll and Mr. Hyde

John Barrymore stars in this 1920 renowned silent adaptation of the Robert Louis Stevenson classic about a Victorian scientist who turns himself into a murderous abomination. This is one of several versions of the silent film production.

COMPACT
disc
DIGITAL DATA

SHORT MOVIE

The Phantom Inventory

The storyline: a bailiff visits an old man in a wheelchair who collects old mementos ("souvenirs that no one wants", says the old man). He discovers a vast attic full of curious objects and sets out to take inventory of all the treasures that are there.



GAMING

**FREE
Apprentice**

In Apprentice, you play the unlikely hero Mortimer "Pib" Pibsworth. This game is right up there with the best of them. Compared to Pleurburgh on occasion this game has the perfect blend of humour, puzzles, gameplay and graphics.

The Yetisports Collection

Join the Yeti as he makes his way through eight games—Pingu Throw, Orca Slap, Seal Bounce, Albatross Overload, Flamingo Drive, Bigwave, Free-Ride and Jungle Swing.

- Fiat Panda Fun Racer
- Fiend
- Ragdoll Matrix Reloaded
- SimSheep 2
- Speedway
- Zelda Classic

DEMOS

The Apprentice: Los Angeles

Compete for a dream job with Donald Trump in this innovative twist on time management games! Test your skills in four iconic LA settings, each with its own gameplay style. It's like having four games in one! You'll prepare food, manage your assistants and control your inventory!

- Dirk Dashing: Secret Agent!
- Nanny Mania

ENTERTAINMENT

FUN SOFTWARE

Rekkaturvat: Truck Dismount

The aim of this game is to injure someone, as badly as you can, in a truck accident that you have control over. Control the speed of the truck, the position of the poor helpless victim, even place ramps to try and score as much damage as possible.

- Cartoonist 1.3
- Water Rocket Fun
- AV Voice Changer Software Gold Edition 6.0.10

MUSIC

Creative Commons Music

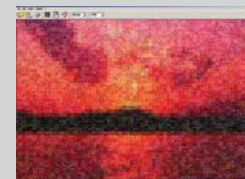
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Digital Spaceland 4 by Project System 12

According to the band: "Number 4 in the series—dreaming in Space—Adventures at strange places—Fantasy". Just that.

TOOLS

MULTIMEDIA

PhotoMosaïque 1.6

PhotoMosaïque facilitates very easy and fast creation of picture mosaics. The final image comprises about a thousand tiny images (thumbnails).

- RealPlayer 11 Beta
- iTunes 7.3
- JetPhoto Studio 3.8
- Reaper 1.873
- Teen Spirit 0.91c
- TV 2.0

SYSTEM

Returnil Virtual System Personal Edition

Returnil Virtual System is a powerful technology that clones a copy of your System Partition in memory and can create a file based Virtual Partition where you can save documents, data, and files while using the System Protection feature.

- ClamWin Free Antivirus 0.90.3-3c
- Driver Magician Lite 3.26
- Keyboard Extensions 1.0 build 53
- Mz Cpu Accelerator 1.4
- PowerPro 4.7
- Returnil Virtual System Personal Edition 1.62 Build: 4107
- RightMark Audio Analyzer 6.0.5
- SmartGesture Lite 1.0.1
- ClickyMouse Advanced Scripting Edition 6.31



By Demand

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

Sony Sound Forge 9

Size: 68 MB

Latest Autopatcher XP

Size: 340 MB

Celestia + Add-ons

Size: 607 MB



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This Month's Question

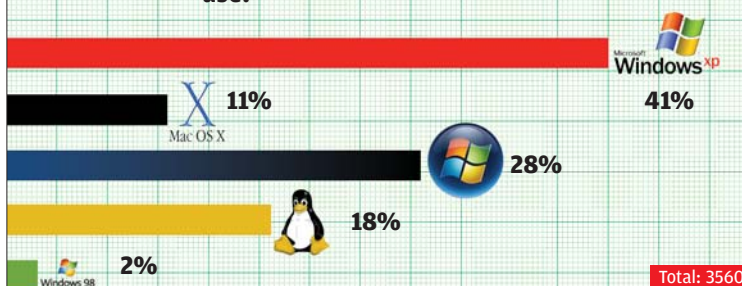
What security software do you have installed on your computer?

- ☐ Everything, from anti-virus to anti-phishing software.
- ☐ A firewall, an anti-virus, and anti-spyware and anti-malware.
- ☐ Only an anti-virus.
- ☐ Security software... what's that?

To vote Log on to www.thinkdigit.com

Last Month's Question

Which Operating System would you like to use?



taste technology at www.thinkdigit.com

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

This month, we feature the second-hand goodies being sold on our Forum by its members.

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Second-hand goodies being peddled in Bazaar

What: BIG 7600GS
Who: ROCKING7575
How Much: Rs 4200
Where: Gandhidham, Gujarat
Link:
<http://www.thinkdigit.com/forum/showthread.php?t=63351>

What: XFX 8600GT
Who: regenade
How Much: Rs 7,000
Where: Bangalore
Link:
<http://www.thinkdigit.com/forum/showthread.php?t=63224>

What: Athlon 3000+, K8V-MX , Geforce FX 5200, 512 MB ZION RAM
Who: jack_sparrow
How Much: Negotiable
Link:
<http://www.thinkdigit.com/forum/showthread.php?t=62679>



What: Transcend 2x 1 GB DDR Memory
Who: codeguru
How Much: Rs 2,500 each
Link:
<http://www.thinkdigit.com/forum/showthread.php?t=58974>

What: Gameboy advance SP with 8 bundled games
Who: ankush
Where: Delhi
How Much: Negotiable
Link:
<http://www.thinkdigit.com/forum/showthread.php?t=61939>

What: Asus 8800GTS (320 MB) + Corsair 620 W Power Supply
Who: Scudmis
Where: Mumbai only
How Much: Rs 23,000
Link:
<http://www.thinkdigit.com/forum/showthread.php?t=63402>

The iPhone Is Hackable!

Researchers at Independent Security Evaluators, a company involved in testing clients' computer security, informed of an Apple iPhone vulnerability which was detected by hacking the Wi-Fi connection and also by browsing to a Web site containing malicious code.



Xbox Warranty Woes

19 July, Microsoft said it expects to spend more than \$1 billion (Rs 4,000 crore) to repair widespread hardware problems in its Xbox 360 video game console. A large number of them have broken down of late after firmware upgrades by consumers.



Enter



Anand Virani,
Associate Vice President, Geodesic

Mundu Radio is a mobile-based application that allows you to connect to any Internet-based radio station you'd want to. We caught up with Anand Virani, associate vice president of Geodesic, the developers behind Mundu Radio, for a quick salvo of questions...

What sets Mundu Radio apart from other players like the Nokia Internet Radio Client?

Virani: Most internet players have a fixed playlist, or cannot search for third-party Internet radio stations. Mundu Radio is one of the only applications that allow users to add their own stations to the list. In future editions of the application, a search feature labelled "discover" will be added; this will allow members to search for stations based on genre, time period, and more. Mundu Radio is also the only cross-platform player—it works on Series 60 Symbian as well as Java-based phones.

How much will Mundu Radio cost once out of beta?

Virani: We are in the process of rolling out a commercial version of Mundu Radio. Since the cost of bandwidth in India is high and unlimited data plans are expensive, we are looking at providing the service at a very attractive rate. The pricing model could be based on a "one time downloading fee," though that will be decided later.

Will you bring in your own local content as well?

Virani: India is a key market for us and local content is very popular. There are about 50 Internet radio stations we have found that air local content. If you access the "India" genre in the playlist, you will find most of the popular stations there. We are constantly being approached by Internet radio stations, and are looking to partner with as many of them as possible.

OLPC NEWS AGAIN

Intel Steps In, Unexpectedly

A brief recap: under the OLPC (one laptop per child) project, a laptop loaded with XO software, costing \$100, would be given to every child in participating developing countries to aid learning. This was the brainchild of Nicholas Negroponte, founder of the well-known MIT Media Lab.

It didn't remain a Negroponte affair. It became a low-cost-PC-for-the-third-world thing, even if no-one actually used the word "third world." Intel hopped on the proverbial bandwagon of low-cost PCs, unveiling their Classmate PC, a laptop for children—but more expensive, and with more features.

The scene became almost ugly: Intel chairman Craig Barrett referred to Negroponte's XO Laptop as "a \$100 gadget." A miffed Negroponte ranted: "Intel should be ashamed of itself. It's just—it's just shameful," in an interview with the BBC News Web site. Mr Gates himself later pointed to the lacking design of the XO laptop, its lack of a hard drive, and its small screen.

Negroponte went on to say Intel's problem was that an AMD-designed processor was being used in his XO laptop. The competition and differences were increasing.

Brace yourselves: Intel, out of the blue, joined hands with the OLPC project. Everyone was taken by surprise, taken aback, even.

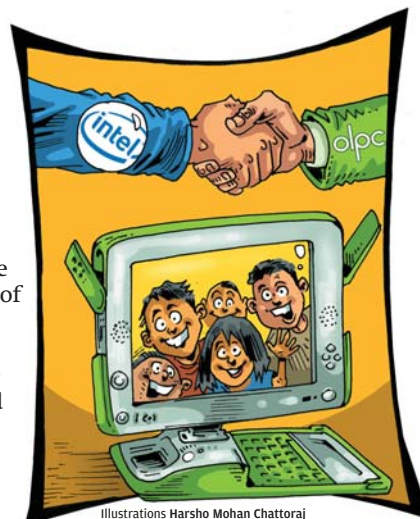
A delighted Negroponte said, "Intel joins the OLPC board as a world leader in technology, helping reach the world's children. Collaboration with Intel means that the maximum number of laptops will reach children."

Software for the Classmate PC would run on the XO laptop. Future XO models could have Intel chips, speculation went. The question that now arises is about the role of AMD, who have been silent about the entire issue. Whose processor would the XO laptop carry?

That hardware decision will be taken by the OLPC Foundation. "Eventually, different PCs with different hardware and software would be offered by OLPC," Walter Bender, head of software development at OLPC, informed the BBC News Web site.

Then again, the OLPC project needs to tackle several issues that surfaced in the course of their pilot test. The most recent is that of setting up filters in regards access to explicit content; Nigerian students have used the laptop to surf porn.

This project has been ongoing for the past five years. Pilot studies are still



Illustrations Harsho Mohan Chatteraj

on. Issues such as explicit-content filters, the cost of a proprietary OS, eco-friendly hardware, longer battery life, and storage in terms of a hard drive need to be addressed by the OLPC project. However, Negroponte's bottom-line is: "This is an education project, not a laptop project."

The icing on the now-musty cake is that the project still faces criticism; some say children in developing countries need food, clothing, and shelter—not laptops. The latest updates say the XO Laptop is now in production and might be released late December 2007.

Still, it's not now a one-man show, a one-project drama. Intel's stepping in will make a difference: the chip giant isn't in it for charity. There will be



Security Watch

Sour Cup Of Java

The Problem

Sun has reported a serious vulnerability in the Java Runtime Environment (JRE).

In the JRE, it's a buffer overflow vulnerability. This might allow a non-trusted applet or application to change system privileges. For example, an applet may grant itself permissions to read and write local files or execute local applications. A second vulnerability here may allow a non-trusted applet or application to cause the Java Virtual Machine to hang.

The Solution

Visit <http://tinyurl.com/2mnjae> for information on what you need to do for your OS.

QuickTime Woes

The Problem

Multiple critical vulnerabilities have been reported in Apple's QuickTime, wherein malicious people can compromise a user's system.

The Solution

Update your copy of Apple QuickTime—<http://tinyurl.com/2vwdxc> for Windows, and <http://tinyurl.com/35zvwv> for the Mac

competition (AMD is still in the picture). There will be collaboration. And we can hope for something concrete to result.

ERASE YOUR TRACES

Anonymous Surfing Goes Mainstream

As you know, search giant Google keeps a history of your searches after you log into Google accounts. The following might seem insignificant for those with the technical savvy and inclination to cover their online tracks if and when they need to—whether by way of cookies or by way of using the feature Google provides to manage search history—but the fact is, not everyone is savvy, and not everyone is inclined that way enough to bother—and really, not everyone has the time to bother.

In view of this, Web-search portal Ask.com thought of going against the norm set by Google. Ask recently introduced a tool

called AskEraser to its portal: AskEraser will allow users search anonymously and set a privacy level. If the user doesn't want any search history maintained, he or she can select the option of not retaining any such data whatsoever.

If AskEraser is not turned on, the machine IP address will be stored along with cookie information and the URL the visitor goes to. Ask will stop linking searches to IP addresses after a period of 18 months. However, a halt on data deletion will be ordered if the US government has to retain data for investigation.

Microsoft will join Ask.com on the same front, allowing their users to search anonymously on Windows Live Web sites. They, too, will scrub all search query data after 18 months, data that could identify the searcher. Google, too, recently announced it would make the data it stores about its users anonymous after 18 to 24 months. All this comes at a time when what terrorists and would-be terrorists are searching for has come under the scanner.

As a matter of fact,

HOT

Yahoo! Mail Beta

IM integrated with Web mail is almost the norm now. Google added the chat feature to Gmail in June 2006; users could have chat sessions and mail in the same window. In February 2007, Yahoo followed suit...



Hotmail

...But despite being the pioneers of Web mail, MSN Hotmail (now Windows Live Hotmail) still doesn't seem to get it. There might still be a lot of users of the once-Hot mail, but the others have a definitive edge now.



search engines retain user data for site improvement, which brings in the risk of data being hacked or misused. Pressure from the European Union on the time limit for retaining users' search query history has led to this situation. Microsoft and Ask.com are looking forward to invite Web portals like Google, AOL, and Yahoo!, as well as privacy advocates, for talks

Opinion Poll

(One Silly Question makes way for Opinion Poll. You, too, can participate at www.thinkdigit.com)

What security software do you have installed on your computer?

1 Everything, from anti-virus to anti-phishing software.

2 A firewall, an anti-virus, and anti-spyware and anti-malware.

3 Only an anti-virus.

4 Security software... what's that?

2



"I like to try out new software, so I have almost everything installed. The anti-phishing software I don't use because I do not do Internet banking or other such transactions on the computer."

Pommy Bal
Mumbai

1



"Definitely. I want to keep my computer clean and safe. I don't want it to stop working."

Santhosh S
Bangalore

2



"No anti-virus or anti-spyware product is perfect—for example, if Avast! detects a file as a virus or Trojan, Kaspersky finds the same file safe."

That's why I keep two types of anti-virus, anti-spyware, and firewall installed on my computer. I also like to check their working and performance—and how secure and safe they are on the PC."

Anurag Pandey
Delhi

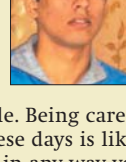
3



"I don't have the Internet on my PC at home, so I don't need anything apart from an anti-virus. I use Avast!, which I keep up-to-date using the updates you provide on your CD."

Priyobatra Sharma
Bangalore

1



"Today, a leak in your security could mean anything—losing your bank balance, theft of sensitive personal information—the consequences are unthinkable. Being careless with your security these days is like being ready to be looted in any way you can be."

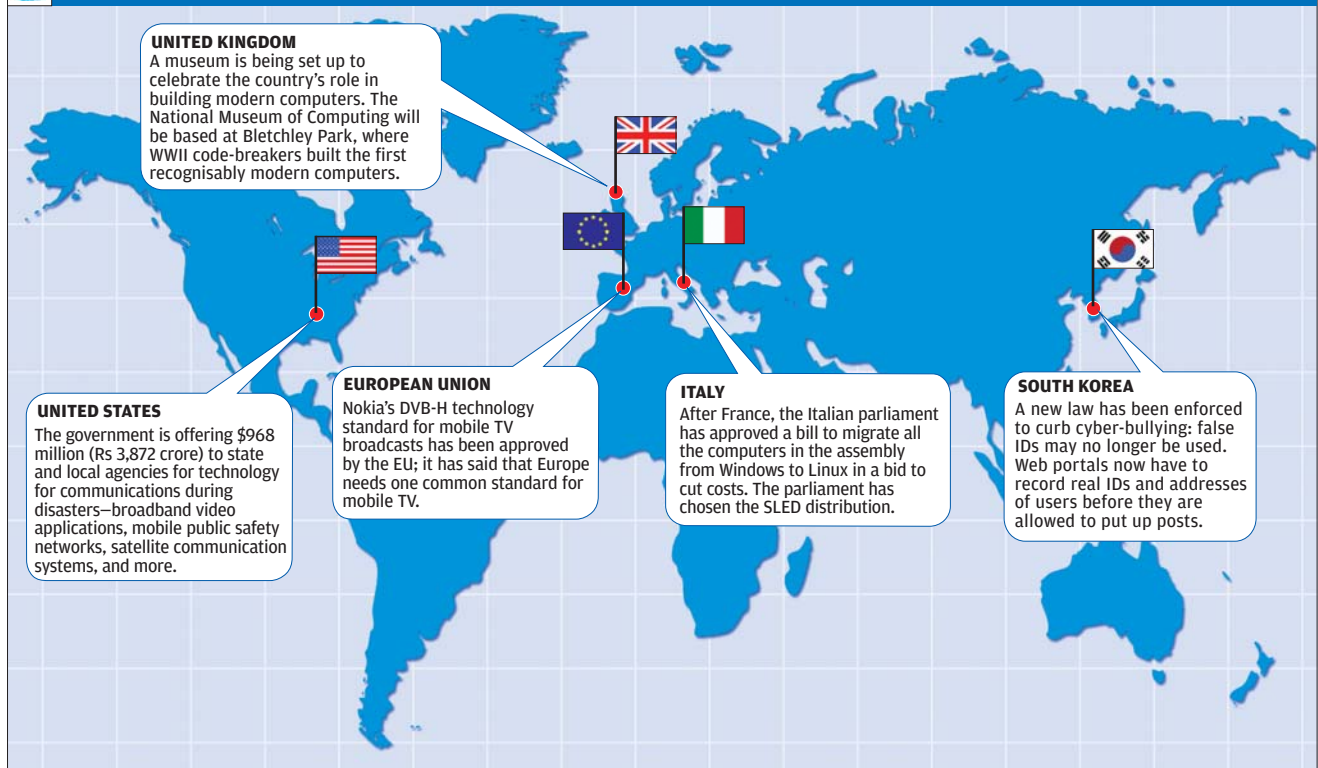
Rohit Patel
Rajkot

4



"I use Linux full-time!"

Prakash J Kokkattu
Hyderabad



to better handle the privacy of users' search query history.

Whether these privacy-maintaining steps will be successful or not, users will certainly feel better about it. Users need no longer feel "under surveillance," and also, the chances of misusing data would be reduced. Search portals seem to be looking to protect you: still, they need industry consensus and collaboration to make the move a success.

AGAIN...

Chips Off The Clock

Age old rival warlords Intel and AMD seem to be ever creating some buzz or the other to remain in the news. Their rivalry in the silicon chip market continues to keep the media orchestra playing. Both recently announced the roadmaps of their next-generation processors, creating yet

another buzz in the chip market and getting consumers all excited.

Intel gave out additional details of their 45nm processors—Penryn—due out later this year. Also, Intel shared a few details of their next-generation architecture called Nehalem for its Penryn processors. On their mobile platform Santa Rosa, fresh new mobile Penryn Core 2 Duos will be available before the next generation Montevina mobile processors.

On other hand, to catch up with the quad-cores from Intel, AMD's quad-core Barcelona's performance reports are yet to come. AMD spoke about GPGPU flexibility and their Fusion processors. Also, AMD announced plans for their second-generation Stars (quad-core and dual-core), and the single-core Sparta processors. AMD also announced their 65nm Athlon 64 refreshed single-core Lima processor would be replaced by Sparta, set for launch in September 2007.

Call it leapfrogging or a

bullfight, but the two chip giants seem to enjoy sharing their plans and leaving consumers confused with processor code-names! The processor wars took a twist when Intel announced Core 2 Duo stepping and price-cuts of as much as 50 per cent for the Core 2 Duo series. Also, fresh quad-core processors will soon join the Quad family. Following in Intel's steps, AMD, too, announced a price cut for their single-core and dual-core processors.

What's been done is nothing new except for the sharing of their processor roadmaps. However, the timing creates a situation where the possibility of loss due to price cuts haunts AMD. If Barcelona outperforms and meets expectations, Intel stands to suffer from the price cut. But if, on the other hand, Barcelona fails to cut it, AMD would have to cut prices, which could even compel them to change their roadmap. AMD has already suffered a \$600 million (Rs 2,400 crore)

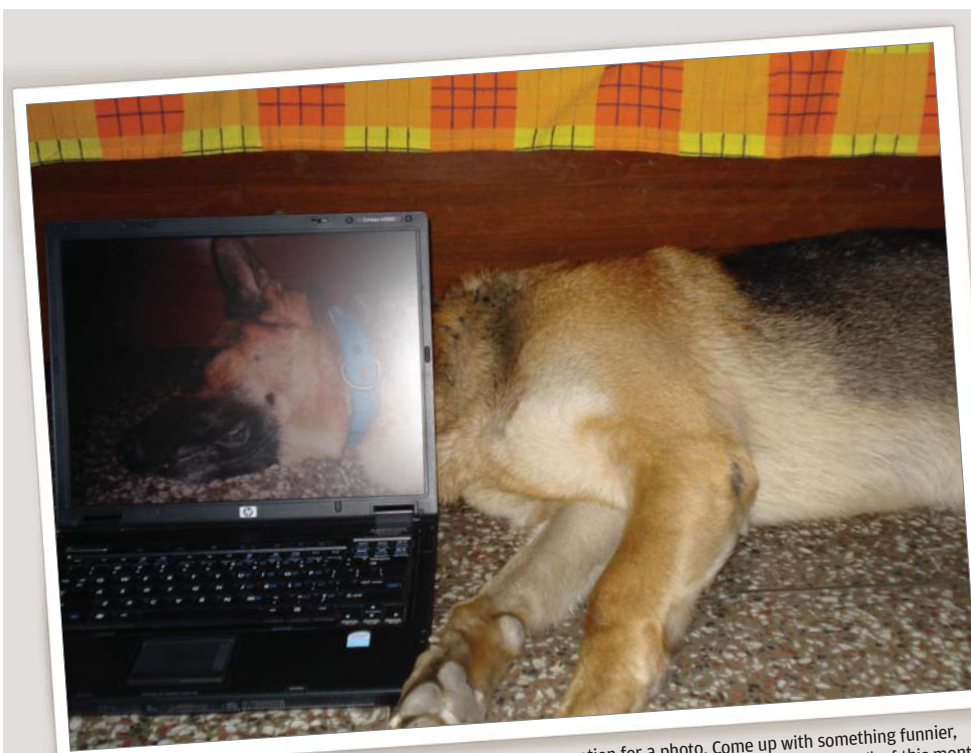
loss in 2nd quarter of 2007.

Both will be affected by their price cut strategies, and as usual, the consumer will have more options. But the upcoming processors will only make consumers drool if there are revolutionary features added to the cores rather than evolutionary functions. All this is yet another case of the rivalry heating up, and we cannot help but report it!

THE CLASSMATE PC

Will These Dinkies Deliver?

The much-awaited learning companion for students, Intel's Classmate PC is finally here. Intel and HCL Infosystems launched it last month. The launch of the Classmate PC is part of Intel's World Ahead Program (WAP) for promoting technology as learning and teaching tool.



Photograph Amandeep Singh

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 20th of this month.

Beat That!

Digit Caption

"Windows Siesta"

Last Month's Winner!

Ashwin Gupta,
Ashwin Gupta, Kanchili-532290
Sriakulam dt. A.P.
"SANI-AMIR-ZA"



E-mail your caption with the subject "Beat That", and your postal address, to beatthat@thinkdigit.com and win

Beginning XML 4th Edition

by David Hunter,
Jeff Rafter, Joe Fawcett

Published by

WILEY-INDIA



The first shipments of HCL-branded Classmate PCs are expected in August / September 2007.

Pilot tests for the Classmate PC have been conducted by Intel in certain schools in India since December 2006. Intel had initiated pilot programs by deploying Classmate PCs in three schools at Ghaziabad, Faridabad, and Bangalore.

Intel director for marketing (South Asia) John McClure has said that the Intel Development Center in Bangalore had extensively designed both the hardware and software for the Classmate PC, which is rugged and could withstand the using pattern of small children starting from class three.

The specifications of the Classmate PC seem good on paper and possibly otherwise: a 900 MHz Intel Mobile Processor, 256 MB DDR II RAM / 512 MB SO-DIMM, 1 GB / 2 GB NAND Flash memory, a 7-inch LCD screen, and sporting either Windows or a Linux OS. It

weighs 1.45 kg and has a six-cell Li-on battery, which is expected to last four hours. For connecting to the Internet, it uses Ethernet (10/100M) and Wi-Fi (802.11 b/g) connectivity. Pretty good for use by kids up to age 12; they don't need quad-cores!

The laptop carries a special educational feature set integrated for teacher-student and teacher-parent collaboration. This feature can be used as an innovative teaching aid. For instance, teachers can demonstrate diagrams and graphs from their laptops onto a projector / LCD TV screen, and using the Wi-Fi / Ethernet, the diagram or graph will simultaneously appear on the students' Classmate PCs.

HCL announced tie-ups with content providers and Education Service Providers (ESPs) to bundle their content with their HCL Classmate PCs. HCL will provide more educational content and learning solutions. The Original Equipment

Manufacturer Partners Wipro Infotech and Zenith Computers will also offer Classmate PCs shortly under their brand name.

With an estimated price of Rs 18,000 for the standalone model, the Classmate PC would be bundled with teaching aids, educational programs, and even training content for teachers to make the best of it. The entire system could be offered to schools on a monthly subscription basis, said Rajendra Kumar, executive vice president, HCL Infosystems. Also, parents can access feedback from the teachers.

An anti-theft security feature is included, which upon being enabled through the network works through digital certification. Also, audio / video and educational applications can function on it. McClure has said, "The initial target audience would be private schools, and then it will move to government-run programmes".

It would be interesting

to watch how Indian schools will make the best of this educational tool. The bottleneck of limited storage capacity (no hard disk, just 1 or 2 GB of Flash) can be augmented using network-based storage. But this depends upon the school's policy and the nature of usage for education.

SILLY NAME, BUT...

Low-cost, Green PC: All Good

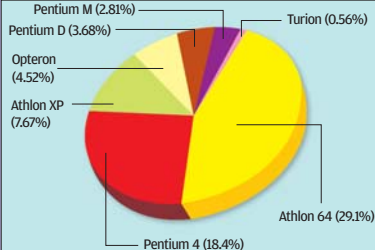
An energy-efficient and environmentally-friendly computer has always been the ideal. Here's something along those lines: the Zonbu Computer, a \$99, eco-friendly little box-like PC, a subscription-based solution devised by Grégoire Gentil and Alain Rossmann. Gentil is the CEO of Zonbu; his last successful start-up, Twingo, was acquired by Cisco in 2004. Rossmann is an ex-Apple employee and



Stat Attack

It's all in the numbers

CPU types worldwide as of July 2007



The average download speed on Internet connections in the US is 1.97 Mbps. Japan: 61 Mbps

India's video game console market is expected to grow to Rs 506 crore by 2010

Google served 3.8 billion searches in April 2007

India produced nearly 3.1 crore mobile phones in 2006—worth about \$5 billion (Rs 20,209 crore)

Indian cellular services revenues amounted to \$9 billion (Rs 36,000 crore) in 2006, and are projected to grow at a compound annual growth rate (CAGR) of 18.4 per cent to reach \$25 billion (Rs 1,00,000 crore) in 2011

well-known technology entrepreneur.

Gentil came up with the idea of Zonbu after having witnessed his father's Windows PC constantly crashing. Then he, along with Rossmann, worked on Zonbu. It will be sold from the Zonbu.com Web site. It comes with Gentoo Linux loaded, and has ready-to-use apps like Firefox, Skype, OpenOffice, a media player, graphics editing tools, and

more. What it doesn't come with is monitor, keyboard, and mouse.

The Zonbu is sold in two versions—Locked and Community. The Locked version costs \$99 with restricted access to the root of the Linux OS. In the Community version which costs \$249 (Rs 10,000), the root is accessible, so more applications can be added using Gentoo Package Manager. The company,

however, doesn't commit support for the Community version.

The Locked version demands a monthly subscription fee of \$12.95 (Rs 520), and includes 25 GB of free online storage. Storage capacity can be increased.

The computer is based on a 1.2 GHz Via C7 ULV chipset and has 512 MB of RAM, integrated graphics, and a 4 GB Compact Flash card. It's a fanless, silent PC drawing much less power than a regular PC: a Zonbu spokesperson has claimed, "Zonbu uses around a tenth of the power of a traditional PC."

The founders have also claimed receipt of the highest possible certification from the Green Electronics Council (GEC), a non-profit group that has created a product classification standard known as Electronic Product Environmental Assessment Tool (EPEAT).

Such a solution has never been available for home users: Zonbu is a decent enough standalone PC for users not so comfortable with computers. MSN TV is a similar solution meant for audio-visual entertainment, but it doesn't sport the features Zonbu offers.

It is developing countries like India that are the potential market for such products. The only drawback is the storage model: think of broadband penetration here.

Even so, on a positive note, we must appreciate the efforts of those who are out to prove that PCs

need not be energy hogs; that they need not have advanced configurations to be functional; that alternative storage models might very well work. On the other hand, we must ask: is this merely the brainchild of two people out just to see if their idea will make it big? Will a subscription-based model work for a PC? Will there be switchers-over to "simple and small" in the current scenario?

Questions abound, but we're reporting this primarily because Zonbu seems to be cheap. Is that the next wave?

WE'RE JUST THE CONDUITS

Washing Their Hands Off It

Music piracy as you very well know is rampant on the Web. No sooner does an album get released than it gets uploaded on P2P networks. A historic decision was ruled by a Belgium court earlier this month. The court decided that one of the largest ISPs in the country would be given six months to install a technology that would block or filter copyrighted-infringing content shared via P2P networks.

A Brussels court-appointed expert mentioned seven ways to install filters or block P2P traffic. These filter technologies are automatic in nature, so they won't

Buzzword of the MONTH

Cloud OS

Apart from improving its existing services like e-mail and IM, Microsoft is working on a concept to unify all the services it offers onto one platform called the "Cloud OS," a.k.a. Windows Live Core.

Cloud OS will run Web-based applications like Microsoft's Live service, using it to unify platforms from Windows on the PC to the Xbox platform to Windows Mobile. Customers will then be able to access their data from any platform—it will be stored online. If you took a

photograph using your Windows Mobile based phone, you'll be able to access it seamlessly on a PC. Or, save game-related notes from your Xbox and access them on your mobile phone. Microsoft is solidifying its stance with the launch of two new Live services: one for storing and sharing photos online, and another for storage of any kind of file.

There's quite a bit of speculation and unconfirmed reports regarding the exact nature of the end product—but it's in the general direction of MS getting up there on the Web the way it stands on the Desktop.



FileRights

What is FileRights?

FileRights is a collaborative programme devised to prevent copyright content from being distributed on the BitTorrent network.

How does it work?

A Web site for original content developers and BitTorrent Web site owners will host a database to which the original content developers can upload details of their movies, TV shows, and songs. FileRights then distributes these details to participating BitTorrent sites so that copyrighted content can be removed from their search results. FileRights will use the file's digital signature, or MD5 checksum—also known as “hash values”—to detect this content over their network.

Why is it a good thing?

Currently, the only way for original content developers to remove their content from a BitTorrent site is to issue Digital Millennium Copyright Act (DMCA) affidavits for each and every torrent file on the site. FileRights will take much less time to implement.

Where lies the problem?

Since FileRights uses hash values to detect content, even the smallest alteration to a file, like the adding of a frame to a video, will make the file unique and untraceable by the database, thereby debunking the entire system. Moreover, Digital Millennium Copyright Act take-down affidavits are worrisome only to BitTorrent sites hosted outside the US.

When did it start?

The FileRights network programme was launched in July 2007.

Who is developing it?

Ironically, the team behind the popular torrent site TorrentSpy, a site that hosts torrent files of pirated content, has developed the system. They hope to rope in more original content developers and BitTorrent sites.



breach the customer's privacy. John Kennedy, chief executive of the International Federation of the Phonographic Industry (IFPI), praised the judgement and commented, “The Internet's gatekeepers, the ISPs, have a responsibility to help control copyright-infringing traffic on their networks.” The IFPI represents recording industry worldwide.

However, after this, British ISPs expressed firm discontent against the ruling. The UK's Internet Service Providers Association (ISPA) re-asserted that ISPs should not be held responsible for the music sharing that takes place via P2P networks. According to the eCommerce Directive (of 2002), ISPs are mere conduits of information, noted an ISPA representative.

But certain ISPs have realised their liabilities, and are moving away from being labelled “pure conduits.” Danny Prieskel, a telecommunications lawyer, believes that UK ISPs would strongly oppose it if such a liability is imposed upon them. David Cameron, UK Conservative Party leader, said in a speech that if child pornography could be removed by ISPs, then they would block the sharing of copyright-infringing content. In regards this, the ISPA justified themselves saying two different things

were being talked about: child pornography is a criminal case, and copyright infringement would be a civil case. Cameron added that Internet censorship should take place at the government level and not a corporate level. People are responsible for uploading and sharing of illegal content, not ISPs, he reiterated.

The ISPs seem to be pretty much sick of it, and just want to wash their hands off the issue. If the ISPs were to start examining every data packet transmitted, one can imagine the increase in the workload on systems. It could even cause data congestion and slower speeds.

In India, certain ISPs believe in their own liabilities just to the point where transmission of copyright-infringing content becomes a major issue. However, customers are smart enough to install key-loggers on their systems and put them to surreptitious use, installing several packet masking software, and even employing router hacks. Should ISPs be responsible for what's transmitted across the wires? It's a debate almost as large as that of P2P and DRM itself.

COSYING UP

What Price Privacy?

Here's another case of kiss and make up: earlier this year, Google sued Microsoft in regards Vista because it left no scope for competition—Vista had locked down the Desktop search program. Google wanted to develop search-based products for Vista, and complained against incompatibility issues with the OS.

Microsoft initially called Google's complaints

baseless. But the software giant is currently enjoying a boost in their profits—of about 11 per cent—for Vista and other products. And recently, they announced they would change the Desktop search features in the engine. This would allow users and OEMs to choose Desktop search programs in Vista other than Windows Instant Search. This change will be activated from Vista Service Pack 1, due in the last quarter of this year.

Microsoft will provide technical details of the Desktop search to other Desktop search providers so they can design their product for optimisation of computer resources. It will make independent software vendors' search products interoperable with Vista. The royalty-free programme for software vendors will be extended to 18-months.

In July, Microsoft filed a patent for ad-supported desktop search versions. The patent focuses on using software that will display ads after the gathering of information lying on the user's hard drive. Data security would be of the utmost concern, keeping users in mind.

Well done, Microsoft, for patching up with Google. But they are planning to put the security of user at the highest form of risk. The ad version of their desktop search could well create compatibility issues, and raise the risk of malware attacks as well. The adware might even gather information based on the user's files and documents. It's a case of keeping potential lawsuits at bay by giving the users something to worry about. Of course, users will have the option of not installing either a Google or a Microsoft tool, but when they're there, we believe a large number—if not the majority—will go ahead and do it anyway.

May the mini-drama unfurl! ☒



28 Pimped Out Penguin



36 30 days with DeathAdder



38 Droolmaal

Digital Passion

Fuelling The Pursuit Of Technology Knowledge

Insight

Riders On The Stream

We take more than a peek at the innards of the latest high-horsepower, pixel-grinding top guns as NVIDIA's G80 squares off against ATI's R600

Michael Browne

It's been an impressive sight to anyone even loosely following developments in the graphics industry. NVIDIA's G71 and ATI's R580 nearly doubled performance in all the games that were new back then, and visuals were improved dramatically. There was, however, a limit to what either vendor could do with DirectX 9.0's Shader Model 3.

Then Windows Vista was announced, along with the new, backwards-compatible DirectX 10. Speculation ran wild as everyone tried their hand at calculated guesses as to what the new standard would amount to in gaming terms. More importantly, who would emerge top dog from among NVIDIA and ATI—two companies that have been slugging it out since DX 8.1 days. With both companies now offering DX 10 capable GPUs, all speculation has been laid to rest. There is still uncertainty, because we still don't know how the latest cards perform under DX 10. Here, we hope to clarify things, however, by peeking under the bonnets of ATI's R600 and NVIDIA's G80.

A Demystification Of The Basics Shaders: Colouring at the speed of light!

As we all know, while rendering any 3D scene, texture (pixel) and geometry (vertex) information is sent to the graphics card for processing. Earlier, cards used to have a set of fixed algorithms hard-wired into them; this was used to process the data. It was known as the FFP (Fixed Function Pipeline). Game programmers could only select from the limited functions hard-wired onto those cards. Restrictions on the programmer and limitations in the flexibility of the code itself meant games couldn't look as realistic as developers wanted.

Shaders were developed in 2001, and their sole purpose was to give programmers more liberty with the code. There were primarily two types of shaders—*Pixel* and *Vertex*. On a software level, a shader is in essence a small algorithm that describes mathematically how a particular material or texture is rendered onto an object. This shader algorithm also specifies how light affects the appearance of the object. So a shader actually defines an object's physical properties in a 3D scene. This (shader) code is loaded into the graphics card's memory, and from there fed directly into the graphics pipeline, where it is executed.



On a hardware level, a shader unit is essentially a little engine of its own that can process a particular type of 3D information. Shader units are designed to execute shader code based on a particular API, or compatible with a certain set of APIs—such as OpenGL and Microsoft's DX. A graphics card will contain multiple shader units, enabling it to process, in parallel, large volumes of data. DX 10 makes programmers' lives even easier, as there is no distinction between pixel and vertex shaders on the hardware level. Some of the software restrictions have also been removed. This gives coders the liberty to implement new and improved techniques to give improved visual quality... the Holy Grail for developers and gamers.

Graphics Pipeline: But Where Are The Pipes?

This isn't like a real *physical* pipe per se. The word *pipeline* refers to individual stages required to perform a much larger task. The key to remember is that a graphics card (much like a CPU) is rapidly fed with a lot of data to be processed. In order to achieve this repetitive task, some streamlining is needed. Each pipeline represents a single task to be performed in order to give you that gorgeous display on-screen. Multiple pipelines get fed with data and instructions; they work on their specialised tasks, complete them, and pass the results forward. In a nutshell, the graphics pipeline is tasked with accepting some form of a 3D scene and processing it to deliver a 2D scene to your monitor. Keep in mind that this is not a simple process, since every object in a rendered 3D scene is basically a completely discrete 3D model—referred to as an *entity*—and involves the following:

- ❑ **The Transformers:** Transforming objects in part or whole from their original space to the desired space in the 3D scene. This part of the process involves scaling. Size scaling of 3D objects is not easy, as every entity has its own coordinate system (remember Coordinate Geometry in high school maths?), and the entire object has to be accurately rendered from each and every angle while maintaining this scale. This stage of the pipeline is also tasked with rotation of the objects in the scene, also called *transformation*. This rotation could be along either the X- or Y-axis, or both.
- ❑ **The Wide Angle:** The next step involves the viewer and his perspective view and orienting everything in the scene to that view. This is called the *camera angle*. This also involves scaling, rotation, and even translation (movement along a defined axis). All this is done to appease the field of view of the user; nearer objects will be larger than objects far away.
- ❑ **Exterminatus Triangulus:** The third stage involves efficiency management. It's time to remove all the hidden triangles that are uselessly composing invisible objects. There's no use rendering the back surface of an object, or the detail behind a wall facing the perspective view of the viewer, is there? This stage reduces the work the graphics card has to do, and is called *Occlusion Culling*. In modern games where there are transparent objects that themselves may have other objects visible through them, this part of the pipeline is very

Matters of the Core

Parameters	8800 Ultra	8800GTS	HD2900XT	X1950XTX	7900GTX
No. Of Transistors (million)	681	681	700	384	278
Core Speed (MHz)	612	500	740	650	650
Number Of Shader Units	128	96	320	48+8	24+8
Shader Unit Speeds (MHz)	1500	1200	*	*	*
Memory Bandwidth	103.2	64	106	51.2	64
No. of TMUs	32	24	16	16	24
No. of ROP/clock	24	20	16	16	16
Number Of Z Compare Units	192/48	160/40	16/32	16	32

* Identical to Core Speed

important. For example, fish swimming in a pond cannot be treated as invisible.

- ❑ **Light My Fire:** Next, the scene has to be lit (illuminated). This is done keeping in mind the locations of light sources in the scene and its effects on the Objects. The properties of each object such as change in colour, reflectance, and refraction, among other surface properties of each object, in response to the light from a particular source, has to be taken into account. Take into consideration six different light sources of varying intensities and you'll see how difficult this stage can become! Once again, the triangle-cutting scalpel is applied to speed things up by reducing GPU load. All that needs to be lit in a scene is what appears to the viewer from his point of view.
- ❑ **Lose that Z axis:** This involves the final conversion from 3D to 2D, that is, your monitor. All the data that is held in textures and vertices must now be converted to pixels displayable by your monitor. Then there are the final touches to be added including Anisotropic Filtering, Anti-Aliasing, Shadows, Fog, Alpha Blending, Shading, Filtering, stencils, and depth, among others. This entire stage is called *Rasterization*.

With the basics clear, we can move on.

Making Shade(r) Light(er)

TMU: A texture mapping unit is responsible for adding detail to a bitmap that is part of a 3D image.

Primitive: In 3D animation, this means the most elemental level of detail, the very basic of building blocks. A point, a line, a polygon, a bitmap, all represent Primitives.

MADD: Stands for "Multiply Add". This is a floating-point operation consisting of a multiplication and an addition instruction fused together, mainly because it is more efficient to execute for any processing unit than a separate multiply and add function. It is called a multiply accumulate, and in terms of algebra, is denoted by $(a * b) + c$, where "c" is added to the product of a and b.

Transcendental Operations: The term literally means higher-order operations, or very simply operations requiring complex computation to arrive at a result. For example, $\sin()$, $\cosine()$, $\logarithm()$, $exponent()$ etc., as opposed to simple arithmetic operations like $power()$, $multiply()$, $divide()$, and $add()$.

SIMD: The acronym for *Single Instruction Multiple Data*. This is a technique where a single instruction is performing the same function simultaneously on multiple streams of data. It's used in image and video streaming, where data streams are usually identical (in this case, pixels).

MRT: The acronym for *Multiple Render Targets*. This is a technique in programming implemented in shader hardware to conserve resources. The shader unit renders a single texture, which is then used to simultaneously paint multiple pixels that share this texture in a 3D scene.

Unlikely Twins

Let's take a look at the salient core specifications of the G80 and R600, with the R580+, (X1950XTX) and G71 (7900GTX) thrown in for reference.

Some (rare!) common ground and a very significant addition over all previous-generation hardware is the *Geometry Shader Unit*, which is present on both cards. Geometry shaders are an extension of vertex shaders; they can work on many vertices (in 3D terms, called a *mesh*), unlike vertex shaders, which work on a single vertex. The unified shaders on the R600 and G80 and all their derivatives can now perform pixel, vertex, or geometry operations. This translates to efficient use of shader units—the load is balanced between pixel, vertex, and geometry, and none of the shader units are left idle. Traditionally, in the case of heavy, pixel-processing frames, the vertex shader units would idle, though in an always-on state (consuming power).

The R600 a.k.a. HD2900XT's 80nm fabrication process propels it to higher clock speeds within acceptable thermal limits as opposed to the 8800GTX/Ultra a.k.a. G80's 90nm process.

With more than double the shader units and a higher clock, not to mention the 512-bit memory interface, the HD2900XT might seem to bury the 8800GTX, but this isn't an apple-to-apple comparison; the two companies' approach designing and implementing DX10 parts is quite different. The 320 vs. 128 shader-unit argument is equally pointless. And as you will see, there is much more at play than simple on-paper specs.

Is 320 Equal To 128?

The more shaders the merrier, is a general thumb rule. This because a single stream processor can do only so much work in a single clock. Pixel operations in particular are complex and multi-threaded, often needing more than one SP working on the same pixel data (called a dependency).

ATI's 320 Stream Processors: Is more necessarily better?

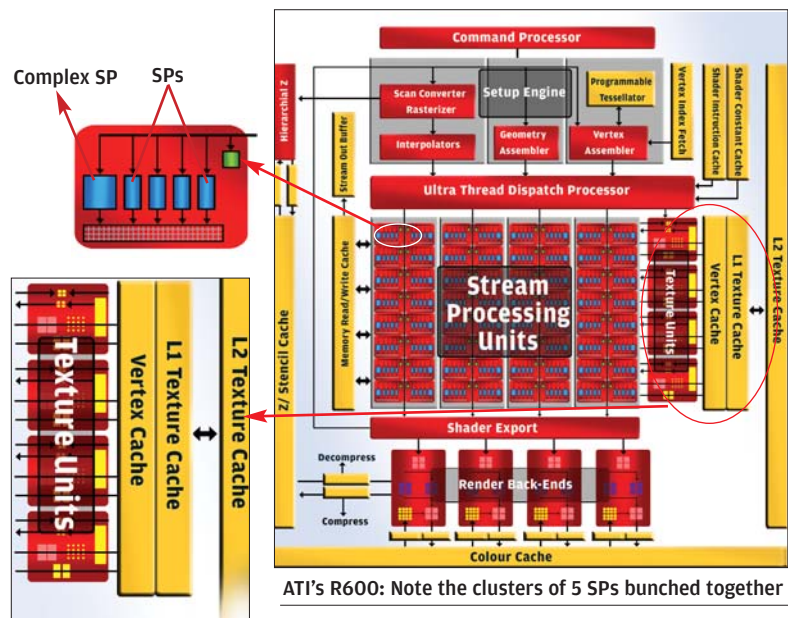
ATI has taken pains to explain that *most* of the Stream Processors (hereon referred to as SPs) on the R600 aren't capable of special function operations, that is, they are simpler than the SPs on the G80. Also, if you look at the diagram alongside, you'll see that five of these SPs are bunched together in a cluster, and only one SP in the block (the large one) can handle either a regular floating point (FP) such as a MADD operation or a special function operation such as SIN (sin), COS (cosine), LOG (logarithm), or EXP (exponent). This SP is called a *special function SP* by ATI. The other four SPs can handle only simpler integer operations such as ADD (add) and MUL (multiply). There is a sixth unit in the SP cluster, which is a branch execution unit responsible for tackling flow control operations like looping, comparisons, and calling subroutines.

Another limiting factor is that each cluster of five SPs can handle only a single thread, be it vertex, pixel, or primitive, in a single cycle. This means essentially that each bunch of five SPs are handling only a single FP operation per cycle, while a single SP in the bunch can do a transcendental operation (read: special operation).

While ATI has gone through pains to ensure that each cluster of 5 SPs is always busy, it is extremely difficult to ensure that each SP in a single cluster is always occupied. Therefore the R600 essentially consists of 64 SPs with 5 ALUs (Arithmetic Logic Units) each, though ATI prefers to refer to the total number of SPs as $64 \times 5 = 320$.

NVIDIA's 128 Stream Processors: Parallelism unparallel?

At the very outset, NVIDIA designed the SPs on the G80 to be independent. No clusters here—just 128 SPs (96 on the 8800GTS) that can perform a single operation per cycle, unless one operation is a simple one. This could be either an FP operation (like a MADD), or a special function (SIN, COS, etc). A single SP can complete a MADD and one integer operation like a MUL in a single clock cycle. So we can have 128 threads running in parallel in a given clock cycle. However this doesn't mean 128 discrete operations because vertex and pixel data contains multiple threads. For example, eight SPs may be working on a single thread in a single clock! Keep in mind that the G80 has eight SIMD blocks each containing a cluster of 16 SPs (see diagram on page xxx).



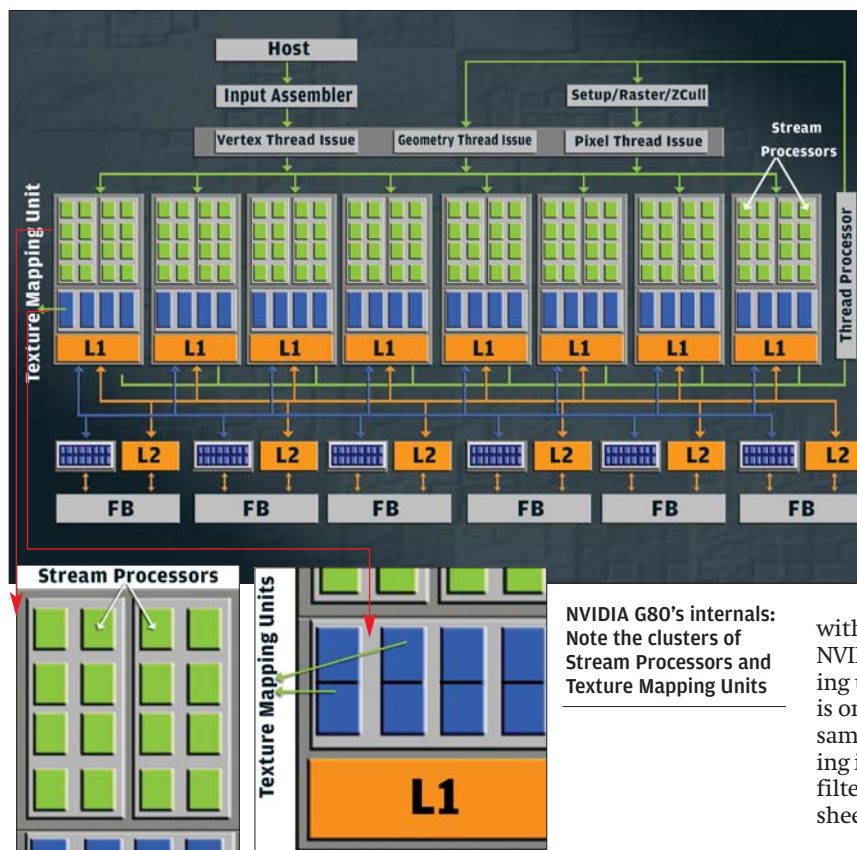
ATI's R600: Note the clusters of 5 SPs bunched together

Before getting fed to the SPs, each vertex operation is divided into 16 threads, while pixel and geometry operations are divided into blocks of 32 (16 threads are executed over two clocks).

Which is better, 320 or 128?

Each SP on the G80 can perform two simultaneously-issued scalar operations per cycle, say a MADD + MUL. This is in contrast to the R600, where only one SP in a cluster of five can handle such an operation. So the G80 can handle twice the number of threads (128 vs. 64) in parallel.

However, due to the fact that each thread is worked upon by 5x the SPs on the R600, more work is *potentially* getting done on each of the 64 threads than on the 128 threads on the G80. In the *best case scenario*, the R600 can execute five parallel operations on each thread. This is, of course, assuming no dependencies among any of



the five threads. The G80 can only handle a single operation (albeit on double the number of threads, that is, 128).

Notice we said “best case” because such a situation is rare in real code, and this peak performance (5x) is not sustainable, and possible only rarely. The performance difference in such a case is restricted to the difference in the number of SPs: $320 / 128 = 2.5x$. Do remember that these scenarios are largely code-dependent. In a worst case—where there are no dependent threads—we’d see the G80 with a 2x advantage, that is, 128 threads vs. 64. All the above are hypothetical situations, and we’ll see developers optimising code for one or the other GPU.

There’s another variable to consider, in that the G80’s shaders are clocked at much higher speeds (see table *Matters Of The Core*). In fact, at double the speed of the R600 (1500 MHz vs. 740 MHz), the overall throughput should remain the same. This is more or less confirmed when both companies reveal their GPUs’ performance figures—475 GigaFLOPS on the R600, and 520 GigaFLOPS on the G80.

In our opinion, in practice, therefore, the G80 should in most cases be significantly faster than the R600, unless code has been heavily optimised for the R600, wherein its heavy-duty computing engine comes into use.

Texturing: How Much Is Enough?

There are two methods in vogue for displaying spectacular visual effects in games. The older method employs complex textures specifically, consisting of complex code written for each texture, while newer games—in general; there are

exceptions—use shaders. All GPUs now feature programmable hardware shaders, for which code can easily be developed.

Look at the table *Matters Of The Core* and you’ll see the Texture Mapping Units (TMUs) on the R600 remain unchanged from the earlier Radeons at 16 (texture filter units). The TMU on R600 is brand-new, with many improvements over predecessors, namely improved Anisotropic Filtering, filtering of FP 32-bit textures, in addition to support for larger texture samples in compliance with DX 10.

The TMUs on the R600 are additionally able to work on both unfiltered and filtered textures. While filtered textures mostly represent image-based data like pixel textures, unfiltered textures represent vertex data and other blocks of data (which are not related to images). In true compliance with DX 10, the R600 can display FP formats from 11:11:10, (R:G:B), up to 128-bit.

NVIDIA’s G80 is at a direct advantage with double the number of TMUs (32). Although NVIDIA has double the number of texture filtering units (64), the number of texture address units is only 32. The G80 only works on filtered texture samples, somewhat limiting its capabilities (keeping in mind true unified architecture), but texture filtering should be faster on the G80 because of sheer numbers.

Pixel Mascara: Shading Up To Kill

Pixel operations bring up the last few steps in the rendering pipeline before the output is diverted to the screen. ATI’s nomenclature for this part of the core is *Render Back Ends*, while NVIDIA uses the handle *ROP Units* (Raster Operation Units). The ROP unit is basically a complex processor responsible for compression and decompression of textures, Alpha Blending, frame buffer, and Anti-Aliasing, to name a few functions.

The R600 has the same number of ROPs as its predecessor, that is, four; one for each SIMD unit. The maximum throughput these four ROPs maintain is 16 pixels per clock (four pixels per ROP). Although ATI has mentioned improvements in efficiency over the previous-generation R580+, the huge number of shader units (320 or 64, whichever way you look at it) will be seriously bottlenecked in the ROP portion of the R600’s hardware pipeline.

The G80 has six ROP units, each capable of four operations per clock. That’s 24 Raster Operations per clock on the whole. So while theoretically the G80 has more processing power, remember here that the ROPs are clocked at core speeds, so the R600 should be able to hold its own here (740 MHz vs. 648 MHz), with maybe a slight edge going to NVIDIA’s hardware. We don’t expect the difference to effectively more than 10 per cent either way.

Memory Bandwidth: Multi-Lane Traffic Control!

ATI’s *Ring Bus* was talked about on the R500 series. This was basically dual, 256-bit unidirectional buses used to carry blocks of vertex, pixel, and data around the various subsystems of the core

and eventually to the memory. The R600 adds two more parallel buses for a total of data path width of 1024 (256 x 4) bits. This Ring Bus is fully duplex. ATI has referred to this design as *fully distributed*, meaning there is no central hub or controller. Defying conventional topologies, the controller itself is distributed over the entire ring.

The kind of bandwidth the R600 provides may seem a gross overkill for today's games—but when one takes into consideration DX 10 and the additional memory load, this kind of headroom makes sense. ATI has not gone GDDR4 this time, although it is supported by the memory controller.

The G80 uses a controller similar to the earlier GeForce 7 series. There are now six paths of 64 bits each (instead of four sections), so in essence, the 8800GTX and Ultra versions sport a 384-bit memory controller. Incidentally the lower-end 8800GTS features a 320-bit bus, presumably with one less path than the GTX and Ultra versions, that is, five instead of six. There are 12 chips of GDDR3 memory aboard the 8800GTX/Ultra, 64 MB each, and each gets a discrete data path spanning 32 bits. The 8800GTS has 10 such memory chips. GDDR4 is supported on the G80's controller, but we're yet to see it implemented.

Different Stream, Same Horizon?

These two are undoubtedly the fastest graphics hardware on the planet, and easily outperform all previous-generation cards by at least 200 per cent in all DX9 titles. DX10 is the proverbial dark horse here, and just how well both these new architectures do is yet to be seen. Of course, this

Which of the two architectures is faster is still debatable

was something both these cards were bred for! Sure, DX 9 proves overkill for them, but we know how developers love to bring hardware to its knees. We fully expect this trend to continue, but fervently hope this is achieved through better visual content and not just horribly optimised code as we've seen in the past. In fact, there are a few DX10 titles on the market that exemplify this point. There have been flashes of brilliance, games like *Far Cry*, *F.E.A.R.*, *Oblivion*, and *Company Of Heroes* being shining examples.

Which of the two architectures is faster is still debatable. We're trying hard to get our hands on both cards to end the suspense once and for all with a full-fledged test. ATI has already launched a 1 GB version of its HD2900XT, with which they hope to combat the 8800 GTX/Ultra. NVIDIA is expected to launch something to the tune of an 8900GTS/GTX, but details are sketchy, and the company itself tight-lipped as of now. We can also expect to see an 8950GX2 (remember the two-GPU, two-PCB 7950GX2?).

One thing's for sure—which architecture does better will also largely depend on which side of the fence game developers choose to sit on, optimising their code for one or the other GPU architecture. NVIDIA with their "The Way it's meant to be played," and ATI with their "Get into the Game," are beckoning developers with promises of title promotion and support. It's just a matter of developers going red or green... As for us, our verdict is reserved until both contestants grace our PCI-Express slots! ☒

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Share Firefox Between Windows and Linux

Dual-booters rejoice! Now you don't have to worry about losing your settings between operating systems

Abey John

If you dual-boot Linux and Windows, you will know the pain of not being able to access the same settings and data for Firefox and Thunderbird under both OSes. If all your e-mail in Thunderbird is configured for the Windows login, for example, and you need to quickly access an important e-mail when logged into Linux, you would, in a conventional configuration, reboot into Windows, open Thunderbird, read the mail, shut down, and boot back into Linux. And you'll do some further gymnastics if you want to copy some text—say a command line string—from the e-mail to the application you are working with under Linux.

There is, of course, a better way to go about things. The procedure is fairly straightforward:

1. Move all Firefox and Thunderbird data to a partition that will be recognised by both Windows and Linux.

2. Configure Firefox and Thunderbird under each OS to use the same data set.

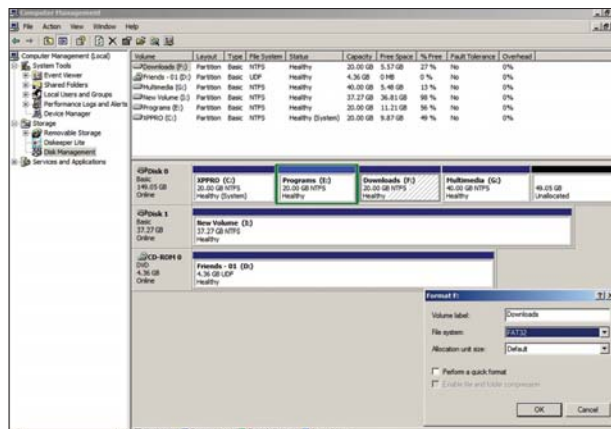
With hard disks today being as large as they are, it is common to partition one physical disk into many logical drives. Under Windows (2000, XP, and above), partitions are most often formatted using the NTFS filesystem. Many Linux distros do not support NTFS, but some—like Ubuntu—do. If your Linux distro supports NTFS, configuring a separate partition may not be necessary: you can configure the Linux versions of Firefox and Thunderbird to use the data from the Windows partition. This is assuming, of course, that the e-mail and browser settings / data that you want to use reside under your Windows login. If your data and settings reside on the Linux partition, which is a non-FAT32 or

non-NTFS partition, then you will need to create a separate FAT32 partition, which can be read by both OSes.

It is easier to create the partition under Windows. Right-click on My Computer, select Manage, and click “Disk Management”. You will be presented with a graphical view of all the partitions and hard disks your computer has. Select an unpartitioned area, or reformat an existing partition, using the FAT32 filesystem. Be careful not to accidentally delete or erase any Linux partitions; these might show up as unpartitioned space.

Once you've created the partition, the next step is to move all the data to it. Here, you will need to choose between the data under your Windows or Linux login—you cannot merge the data. The data and settings are stored in what is known as Profiles. These can be usually found under: C:\Documents and Settings\username\Application Data\Mozilla\ABC\Profiles in Windows, where “ABC” would be either “Firefox” or “Thunderbird”. In Linux, the usual locations are ~/.mozilla/firefox/ and ~/.mozilla-thunderbird/Profiles.

In the new partition, create a folder called MozillaCommon, and create two sub-folders called Firefox and Thunderbird. Then copy the Firefox and Thunderbird profiles you want to use to the respective folders under the MozillaCommon folder.



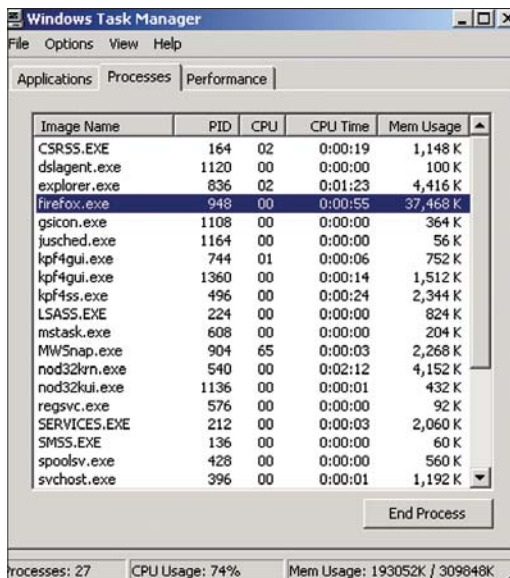
Use Windows Disk Management to create a FAT32 partition



Change your Profile Location using the Profile Manager

The last step is to configure Firefox and Thunderbird to use these folders, using the Profile Manager. In Windows, run `firefox -profilemanager` or `thunderbird -profilemanager` to open the respective Profile Manager.

Make sure both Firefox and Thunderbird are closed, and also that they aren't running in the background. To find out if they are running in the background, of course, look in the Processes

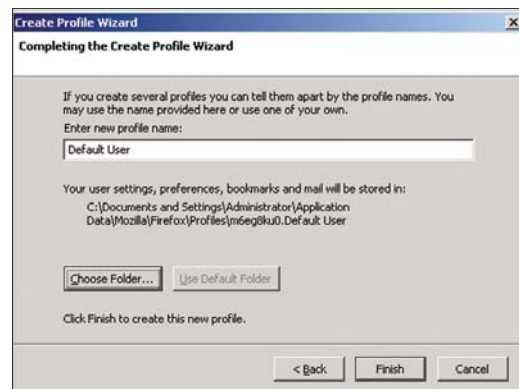


Make sure both Firefox and Thunderbird are closed, and also that they aren't running in the background

Check if Firefox or Thunderbird is running in the background

tab of the Task Manager, and kill the processes if they're running.

In Linux, open a terminal window, and at the command prompt, execute `cd firefox` or `cd thunderbird`. If the directory names are different, make the appropriate changes. To start the Profile Manager, execute `./firefox -profile-manager` or `./thunderbird -profilemanager`. You also need to ensure the programs are not



Point Firefox or Thunderbird to the new profile location

running in the background. If you get an "already running..." type of error, use the `ps` or `kill` commands to shut down the applications running in the background. To learn more about these commands, look up the man pages (execute `man ps` or `man kill`).

Once you've opened the Profile Manager, click **Create Profile...** and then **Next** in the Create Profile Wizard. In the Completing the Create Profile Wizard screen, select **Choose Folder**, and select the profile on the new partition.

And that's that. Now, whenever you browse using Firefox or open an e-mail in Thunderbird, all data and browsing history will be seamlessly available irrespective of OS. ☑

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PIMPERED OUT PENGUIN

While they're not trying to replace your current Desktop, these Linux distributions come in really handy when you need a bunch of purpose-built software in one place

Rossi Fernandes

It's extremely rare to have Windows preinstalled with all the software you need for, say, multimedia authoring. Then again, for a half-hour's work, you don't want to scour the Net hunting for software, so we turn our attention to Linux. The large number of open source tools available for it makes Linux a very good base to build a purpose-built operating system on. There are a lot if you look for them.

We've decided to take a look at distributions that have been created specifically for certain purposes and filling gaps left by most of the Desktop distros. They've been creating waves on the Internet for their functionality, though they aren't recommended for regular Desktop use. We have divided them into categories that should cover the majority of your computing needs outside of basic Desktop computing.

Most of these distributions are Live CDs, so you don't need to bother with installation—just boot off the CD or DVD to try them out. In the odd case that a distribution needs to be installed, you can first test it in a virtualised environment like VMWare or the free VirtualBox. Refer to the

30 Minute Expert to VirtualBox in our July issue for more. Once you're comfortable with the installation process and have decided on a distribution, go ahead and install it.



Linux On A Stick

Portable Linux Distributions are compact operating systems meant for users who would like to carry their operating systems along to work or wherever they need to go. They need to be as feature-packed as possible without going overboard on the resources and storage space front.

Damn Small Linux 3.4

Site: www.damnsmalllinux.org

Size: 49 MB

Damn Small Linux (DSL) is what first comes to mind when you think of portable, compact Linux distributions. The Live CD loads up without any issues into a Fluxbox-powered interface. You can switch to the jwm window manager if you don't like Fluxbox, but it isn't as nice looking. The interface is minimal and clean. A transparent panel on the right of the Desktop shows you statistics for system resources, network speeds, and so on. This adds to the geek factor that most people generally associate with Linux.



A very compact distribution with the bare necessities

Functionality-wise, there's a lot stuffed into DSL, considering it's just short of 50 MB. There's almost everything from browsers like Firefox to PDF readers to the remote access programs Rdesktop and VNCViewer. There's even a command-line-based CD/DVD burning software, cdw. Instant messengers are limited—there are text-based AIM, IRC, and Jabber clients, but nothing for the more commonly used MSN or Yahoo!. A utility called DSL Control Panel allows you to change settings and turn services on and off quickly using buttons on the interface.

As for entertainment, audio playback shouldn't be a problem with xmms around. A video player could have been included, though, without sacrificing much on space. Moving on to games, you'll only find card games in DSL—other than a Tetris game here and there. Fortunately, extensions can be added to Damn Small Linux through the Internet using a program called MyDSL Extension Browser. You can also install extensions downloaded to the local drive using the same application.

Let us put it this way—Damn Small Linux is pretty *damn* small as its name suggests, and it packs in loads of features despite its constraints. It is the geek's Swiss Knife, and can be carried about on portable USB drives. Its compact size is what makes it stand out, and also what cripples it by not letting it be a complete Desktop. The lack of a video player or even a proper word processor is proof of this. Still, you can do almost everything you would on a Desktop with DSL. It's an adequately functional Desktop replacement for those who travel a lot.

SLAX Standard Edition 5.1.8.1

Site: www.slax.org

Size: 192 MB

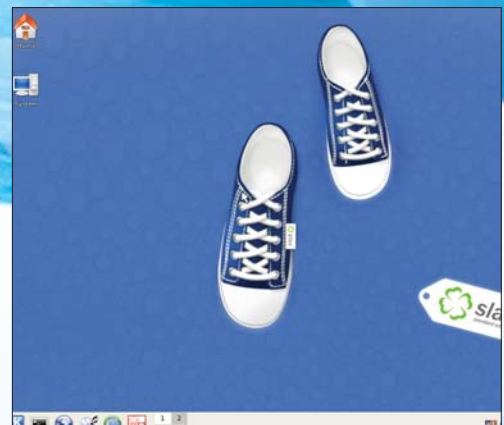
At 192 MB, SLAX doesn't come close to Damn Small Linux in terms of portability, but with 2 GB USB Drives available for under Rs 1,000, portable disk space isn't an issue any longer. Also, at 192 MB, it has many more software packages than DSL does.

The Live CD boots into the console, after which you are required to enter the root username and password. You then need to type `startx` to load the X Window System—this could all have been automated, but that tiny bit of disappointment ends here. SLAX looks a lot better than DSL—much more like a proper Desktop operating system.

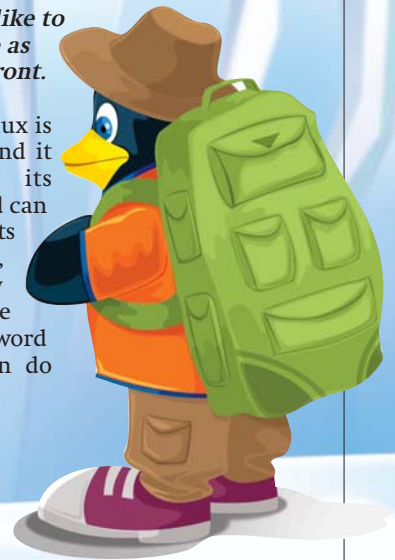
The first thing you notice when you go through the menus is they seem to have everything made for KDE in it. That means no Firefox, no Abiword, no xmms, nothing. Those who love KDE shouldn't have any problem, but GNOME fans might find it a little hard to digest.

That aside, the distribution has components out of KOffice for word processing, spreadsheets and presentation. Konqueror automatically becomes your browser. Unlike with DSL, you can play video—they've included a media player called Kplayer (it comes pre-installed).

SLAX doesn't allow you to install programs, but there are ways to configure the ISO to add modules. The command-line RPM (Red Hat Package Manager, though the term is rarely used) module is



A complete Desktop in a compact package



installed, so you can also add programs using RPM packages.

Games don't seem to figure anywhere in the list of priorities for the creators of SLAX—the same old set of card games on most distributions can be found on SLAX as well. Since it's based on KDE, customising and setting up the

OS is really simple using the KDE Control Center.

When you think of DSL and SLAX as portable operating systems, SLAX doesn't feel like one—it feels more like a full-fledged OS. Anyone wanting the smallest OS with the bare necessities should blindly opt for Damn Small Linux, but if you want anything more, SLAX is your best bet.



The Media Centre

These are distributions meant to take the place of your entertainment centre—playing music and movies and providing some image viewing features, to be specific. The distributions will allow you sit back on your couch and use a remote control or a wireless keyboard to control all your entertainment content.

GeeXboX 1.1

Site: www.geebox.org

Size: 8.8 MB

The distribution we had to try was GeeXboX. The size of the distribution is shocking—with a download size of close to 9 MB, we were wondering if this was even a real distribution! The interface is colourful with a simple menu, and fonts like the ones you would find in cartoonish games like *Worms 3D*.

GeeXboX can play movies and music, and display images and slideshows if you wish. Once completely loaded into memory, the Live CD is ejected, so you can put in your CDs or DVDs. There is no mouse control whatsoever, so you have to depend on the keyboard's direction keys or a remote control.

We had some issues with slideshows switching to next and previous image—we couldn't navigate to them, and had to jump back and forth to the index for this. But movies and music playback worked perfectly—GeeXboX plays back everything from AVIs to MP4s



This is a tiny Linux-based, dedicated media centre

encoded in H.264 or QuickTime. It even played WMV files and Flash video clips—all this through the Live CD, without having to install any third-party codecs or players.

You don't always have to use the Live CD—you also have the option to install GeeXboX on a hard drive, which speeds up its already quick startup time. This distribution is perfect for those who have fairly old machines with some life still in them. Plug in a card with a TV-out function, and you have yourself a media playback centre for free! Check out our October 2006 issue to find out how.

Media Authoring

Content designing and digital media creation has become a common hobby the world over, not to mention a growing business area. Taking advantage of this trend are distributions aimed at all sorts of media creation and editing—perfect if you have multimedia leanings but don't know where to start.

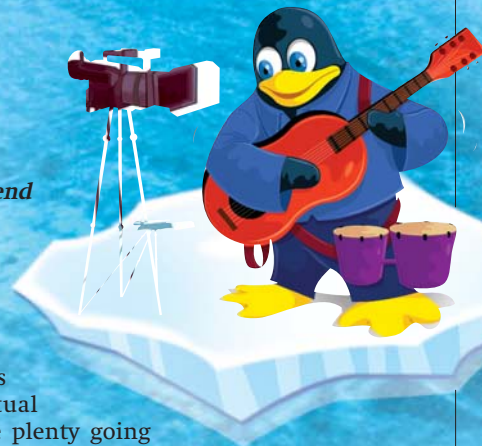
dyne:bolic 2.4.2

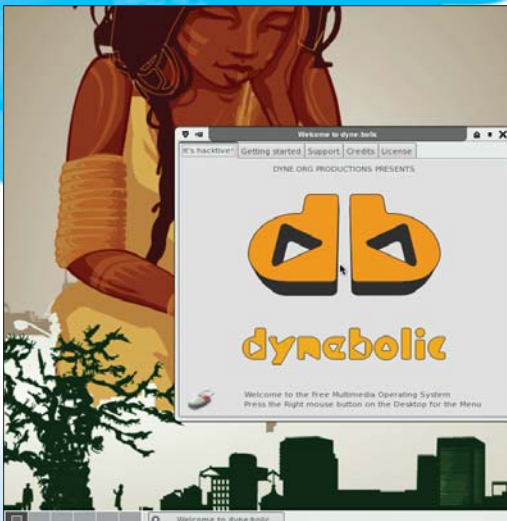
Site: www.dynebolic.org

Size: 654MB

Multimedia authoring distributions often conjure up the idea of a software suite that extends into the gigabytes, but dyne:bolic fits on a single CD. The distribution starts up to a pretty-looking interface—

clean with colourful icons. You can customise it by changing to one of the many themes to suit your taste. The interface comes configured with six virtual Desktops—useful when you have plenty going on: drawing, 3D, animations, compositing, communicating with other members in your team, etc. Programs are well-categorised accord-





Now here's a well-customised distribution with media creation in mind!

Dyne:bolic is a great way to go for anyone wanting to get their hands dirty with CG-related tools

ing to the tasks you want to perform—whether it's viewing video or creating music. There is also software for streaming media over a network or the Internet to create your own live performances. It features tools for print media, such as Scribus for Desktop publishing, and vector imaging tools like Inkscape. The good thing with a distribution like this is that you get to choose from a variety of software for each task depending on which one you like.

The distribution also has the now-standard set of software like Firefox, Thunderbird, XChat, and a few P2P applications. There's even VoIP software like Kix and Ixcomm, and VNC for remote access.

All this functionality stuffed onto a 655 MB Live CD distribution is just amazing, and very good for anyone interested in computer graphics. When you're done with your work, you can save your data on either a USB drive or a hard drive using a tool called Nest.

We're rather pleased with Dyne:bolic overall. It seems like they've thought of almost everything by putting useful tools not for just for the multimedia authoring, but also for general Desktop use. Like we said earlier, Dyne:bolic is a great way to go for anyone wanting to get their hands dirty with CG-related tools.

Ubuntu Studio 7.0.4

Site: www.ubuntustudio.org
Size: 867 MB

Ubuntu Studio is another highly-spoken-of Linux distribution. This isn't a Live CD like Dyne:bolic, so you're going to install it on your drive or use VirtualBox. The installation is rather sad with no GUI—much like distributions from the '90s—though it still is easy and straightforward; it's just poor presentation.

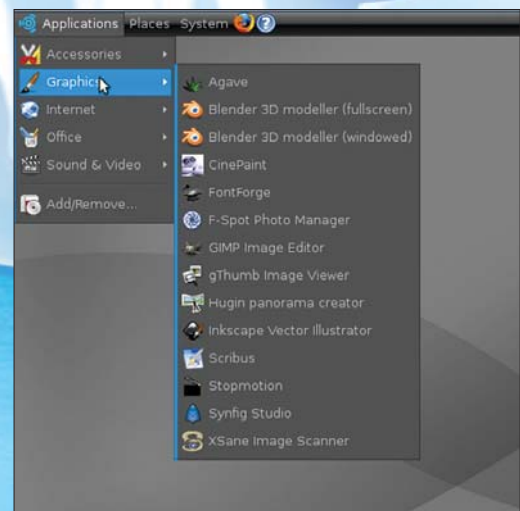
The interface doesn't look anything special, and is very similar to that of another

multimedia authoring distribution called ArtistX (which you'll find on this month's DVD). There are no virtual Desktops in sight, and unlike Dyne:bolic, applications aren't sorted and categorised into menus; this can be very confusing. The only distinctions made are between still graphics editing and audio/video tools. A lot of emphasis seems to have gone into the audio recording and editing components.

The software in Ubuntu Studio is more or less similar to that in Dyne:bolic. There are quite a few interesting applications, like terminatorX, which acts like a virtual turntable and allows you to record tracks as well. Another interesting application is Synfig Studio, which is animation software for vector images; it can be used to create 2D cartoon animations.

Ubuntu Studio does not give any emphasis to streaming media over the network—everything is for the local machine. Quite a few other desktop applications are missing as well—of the OpenOffice suite, you'll only find the word processor, and Firefox and GAIM bring up the rear. There aren't any mail clients or games either, but you can install all the missing software using the Add/Remove Applications tool.

At 867 MB, Ubuntu Studio forces you to use a DVD, but the size disappoints—they could



A content-creation distro based on the well-known Ubuntu

have put many more applications into the distribution, or made it a CD-size distribution like dyne:bolic.

We expect Linux distributions to select only the best software, instead of simply packing all the available applications and calling it a distribution—which is what Ubuntu Studio tries to do. Any Ubuntu fan inclined towards digital media creation and computer graphics would be interested in trying Ubuntu Studio. It must be said this is the first release and it's doing pretty well already—things can only get better, and it won't be long before it matches the might of other distributions in its class.



eBox 0.9.1

Site: www.ebox-platform.com

Size: 205 MB

eBox is a really unique distribution with a lot of potential, not just for home users, but even small offices, and can scale to much larger networks. It acts like a router with a dozen additional features like proxy, firewall, routing, VPN, and many others thrown in—things a router normally can't do. It's a full-fledged, remotely controllable network server. eBox is a 200 MB distribution that boots off the CD without any trouble.



Your all-in-one network server!

There is no user interface—no taskbars, no menus, nothing! It directly loads an elegant page on Firefox which is, in fact, the Web interface from where you control all the features of this operating system. This means you can remotely access the server over the network too.

There is a lot this distribution can do: you can add multiple network interfaces and gateways. You can then set it to load-balance requests to the gateways. Traffic shaping allows you set bandwidth limitations. The HTTP proxy can be configured to block files of certain extensions, MIME types, or entire sites altogether. Easy switching of strictness for the proxy can be done by changing a single setting called Content Filter Threshold.

The firewall in eBox can be set up to block ports and also for port forwarding. eBox can also route data from one network to another.

The VPN capabilities here are very interesting indeed. OpenVPN is a free, open source application that comes with eBox; it allows multiple users from all over the network or the Internet to connect and form a virtual network. There is no limit to the number of connections.

Communications And Networking

What do you do with an old PC that you can't sell? Linux is a perfect operating system for network servers. Here are some distributions that take your scrap-worthy machine and turn it into a network server or a telephony box.

There is an option to back up settings to a drive, but we found no option to install the OS. The eBox site has a separate installer image for download for that purpose.

You should be able to run eBox on pretty much any machine. The highlight here is that it's easy for non-technical people to use, thanks to the Web interface.

AsteriskNOW Beta 6

Site: www.asterisknow.org

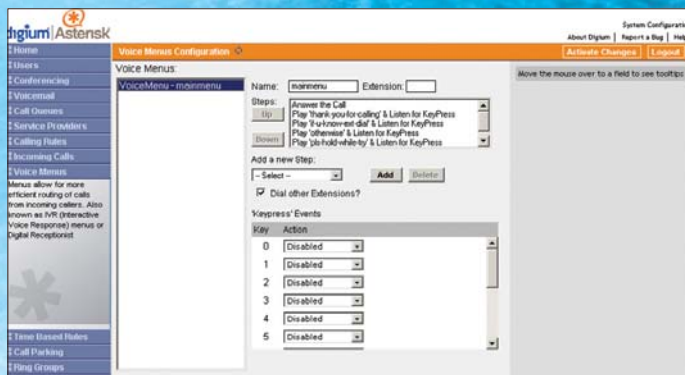
Size: 447 MB

AsteriskNOW is a Linux distribution that turns your computer into a mini PBX (Private Branch Exchange)—a mini phone exchange—for both telephone and VoIP calls. It is not a Live CD, so you'll need to install it to disk. Upon boot-up, you'll see just a text-based interface, and there's nothing that can be done here.

To get to the most functional part of the OS, you need to connect to the AsteriskNOW machine through a browser from anywhere on the network. The setup Wizard helps you set up the system the first time you log in, and the Web interface is well-laid-out.

You can set up multiple phone providers and then assign them to different users—not only can you use your regular analogue phone line, you can add online VoIP providers as well.

Connections can be set up in a manner such that numbers starting with certain codes can be routed through different providers, and calls coming from a particular provider can be automatically sent to particular extensions. It also supports conferencing in addition to the standard three-way phone calls. In addition, there are voice menus to interact with callers, and you can assign functions to a number of keystrokes.



This can be your personal telephone exchange

AsteriskNOW gives you reports of system information such as CPU loads, network interface information, system logs, and even a text console for executing direct commands to Asterisk. It's claimed that a machine with a 3 GHz processor and 1 GB of RAM will be able to sustain up to 15 simultaneous connections. You can monitor all active connections using the Web interface, and back up and restore all your settings and data as needed.

You obviously will need some hardware to act as an interface for the telephone lines for

Asterisk to function. Digium is a company that uses and works closely with Asterisk as software to run their hardware. Digium hardware can be found through a couple of distributors in India, too. Visit <http://asterisk.pbx.in> for more. The software works fine with other manufacturers as well, though. They make PCI cards that allow many phone lines to be connected to a computer.

It is clear that AsteriskNOW isn't meant for home users, but for a SoHo setup, it's a very cheap solution.

Education

It's pretty hard to put "Linux" and "education" in a single sentence. This category is for school-going children who can use Linux in their daily academic life and also as a regular operating system in their free time.

Edubuntu 7.0.4

Site: www.edubuntu.org

Size: 695 MB

Edubuntu, like Ubuntu Studio, is based on Ubuntu and is targeted at the young ones. Unlike Ubuntu Studio, this distribution comes as a Live CD, and has a GUI for its installer as well.

Edubuntu isn't just for schoolkids—there are quite a few applications meant for very young children as well. Tux Paint, for example, is a drawing application for children, much like MS Paint. The interface is stacked with large, colourful icons. Another educational game that should be fun for kids is called GCompris, a collection of many simple math games and puzzles. There are also some simple games and quizzes that ask the user to find colours, as well as some reading games. They're all meant to teach kids real stuff while keeping it fun.

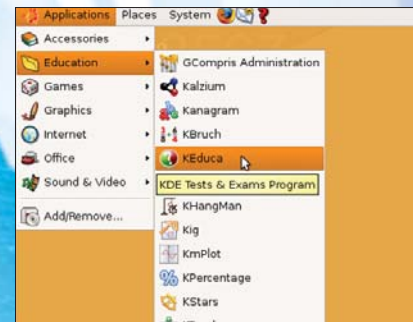
For the slightly grown-up, there's an application called KTurtle, a KDE clone of the old programming language called Logo, where you use text commands to draw. There are some maths programs as well.

KEduca by itself is a program that allows students to take tests, and marks are given accordingly. KEducaBuilder is a program that

accompanies it, and lets you design tests that can be run on KEduca—really useful for teachers and parents alike. Kalzium is a program that shows the periodic table of elements and a lot more information like chemical data, history details, and more. It even shows photos for quite a few of the elements, which makes it more interactive and interesting.

Edubuntu doesn't throw out the standard software package, though—you get the OpenOffice suite, some media players, instant messengers, Firefox, and Evolution for your mail. You can also add and remove programs with simplicity similar to that of Ubuntu.

This operating system meant for kids could have been designed to be a lot more colourful and interactive to make it even more appealing—something like the software in it, like GCompris. They also could have given the user a choice of choosing between a couple of different layouts and schemes, each suited for a different age group. All in all, it's an operating system with lots of fun things to do, with bits of educational value added.



Learning and fun together on a Linux distribution. But make sure they learn



The Indian Flavour

A few enterprising Indian groups have decided to make Linux easily accessible to non-English speaking public by creating distributions for them.

IndLinux—Rangoli 1.0b

Site: <http://www.indlinux.org/>

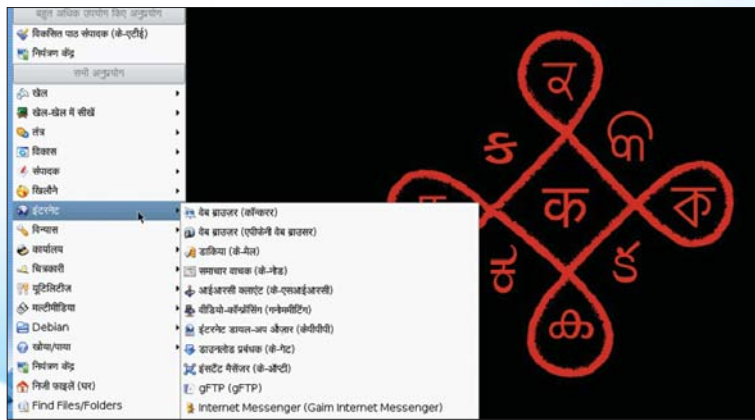
Size: 688 MB

IndLinux is one of the more prominent Linux distributions we came across, and we had to look at it. It's a Live CD based on Morphix, which in turn is a derivative of Debian.

When you first boot from the CD, you can choose from seven languages. You can also choose to use KDE or GNOME if you select Hindi. The other languages boot up into the GNOME desktop environment.

Not all menus and programs are translated into the regional languages, though, and this differs from language to language. You can switch between languages for





A Linux distribution with support for Indian languages—marking a step ahead

typing using a menu in the KDE taskbar, though you can't do so in GNOME.

This is no scaled-down operating system—a large number of programs are included. There's

everything from browsers and text editors to games and even videoconferencing tools. A couple of very important programs are missing, though—there's no Firefox, but you will find the Mozilla Web browser. The KDE documentation, for those who need it, has topic names in Hindi, but the text is all in English. Translating it all would be a mammoth task, we'd imagine.

People who are used to English versions of Linux as their Desktops might find using the regional languages a little confusing, but newcomers to computers and to Linux might find this a lot easier.

IndLinux sets out in the right direction—it's really good for people who want to use computers but don't have good command over the English language. It doesn't have support for all the regional languages in our country, but the IndLinux site links to teams developing and translating programs to other languages. Perhaps future releases will implement more languages.

Gaming

A lot of people hesitate from using Linux because of the lack of games, not to mention the trouble of hunting down the few games that do exist, and then set them up. A lot of distributions, however, do all the dirty work for you, so all you have to do is play!

live.linux-gamers.net 0.9.2

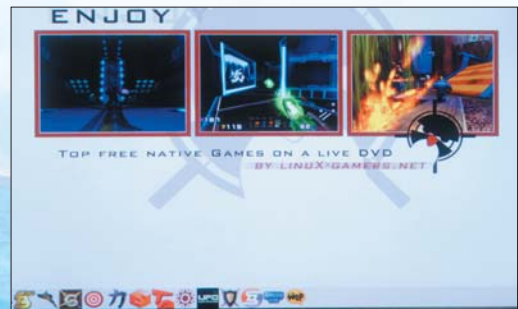
Site: <http://live.linux-gamers.net/>
Size: 2.36 GB

The Linux Live Game Project is a compilation of games for Linux, and requires no previous knowledge on how to set up Linux and all its applications. It's a Live DVD that's based on Arch Linux, so there is no need to create space and partition drives, either.

Depending on your hardware, you'd be well warned that some of your drivers may not be open source. We ran our tests on an NVIDIA-based motherboard. This can be a little irritating to see every time you boot up: you need to agree to continue, and once you do, the drivers are loaded and the GUI boots up. There's not much to see here other than a thick bar with a list of games there.

Now the games on this distribution aren't your typical low-end-card games you find on your Windows and Linux Desktops. These are full-fledged 3D games, including FPSes like *Warsow*, *Tremulous*, and *World of Padman*. *Sauerbraten* is another pretty good-looking game that makes use of some fancy-looking shaders.

It's not all FPS mayhem either—games like *Foobilliards*



A distribution for less-than-casual gamers

(a pool game) and *Blobby 2* (a 2D ball game) will appeal to casual gamers. Real-time Strategy (RTS) and Role-playing Game (RPG) fans can always try out *Warzone 2100* and *The Battle for Wesnoth*. For those with a need for speed there's *TORCS* (The Open Racing Car Simulator)—a fairly decent-looking car racing game, and *gl-117*—a rather bad-looking flight simulator.

The performance of the games on our test machine—an AMD64 3800+ with 1 GB of RAM and the onboard NVIDIA 6150 graphics—was more or less satisfactory. What is irritating is the amount of time games take to load off the DVD. You can save your settings on a USB drive if you wish.

Unfortunately, other than playing games, there's nothing much you can do with this distribution. If that's all you want, then Linux Live Game Project has a decent collection of games where you can spend a lot of free time. ☒

rossi_fernandes@thinkdigit.com



3D games form most of the distribution

The Serpent And The Arachnid! *July 2007*

Michael Browne

Any gamer worth his frag will relate to Razer, one of the most hallowed names in that fraternity. True to their naming conventions—"Copperhead," "Diamondback," and "Krait"—they've brought out the DeathAdder, an 1800 dpi optical mouse based on an infrared sensor. Complementing the mouse is the Tarantula, a keyboard that when judiciously used should result in many deaths. While gaming, of course...

Day 1

The Tarantula is much larger than conventional keyboards, and has numerous nifty shortcuts including multimedia buttons, though these are a touch too hard. The keys themselves have a nice feel to them—short travel and plenty of feedback, though I personally prefer the softer, less immediate travel of some Logitech keyboards. The DeathAdder has soft keys. They're large though, which is good, but too soft for my liking (especially while gaming). Still, they're very comfortable for regular use.

Both the Tarantula and the DeathAdder have a backlit, glowing Razer logo that pulsates—very fetching. The palm rest on the Tarantula is decent. It's treated with a sweat-resistant matte finish that feels comfortable. The DeathAdder has a similar finish, but feels (and looks!) so much better thanks to a velvety coating.

Day 3

My impressions of the mouse after a couple of hours of Quake 3 on a Razer Mantis Speed mat: precise, quick, but no more so than the 1600 dpi Logitech MX518. What is really significant is the frequency, which determines the accuracy while tracking—and the DeathAdder feels every bit as good as the excellent MX518—even better. The DeathAdder is good for large-handed folks. The comfortable and well-sculpted body feels excellent—especially over prolonged use.

Day 6

The Tarantula comes with a beautifully functional key remover—ultra-utilitarian. The keyboard itself will hog two USB ports, but in turn provides two additional USB ports (1.1, not 2.0). Headphone and microphone cables are provided, meaning your headset can be plugged into the keyboard!

Day 10

Gamers hark: ten backlit macro keys! They are on either side of the keyboard, and are

programmable, able to store a multiple-keystroke combination for each profile. Imagine an action game requiring six different keystrokes—each at the proper time to complete a combo attack on an opponent—being bound as a single key-press to one of these macro keys!

Day 13

After wading through the Tarantula's software menu, I'm a bit boggled. The Logitech G11/G15 duo has a more intuitive menu structure on the whole. I feel the regular keys on the Tarantula are also smaller than what I am used to, and while typing out e-mails, I end up with quite a few typos.

Day 19

I miss sideways scroll with the DeathAdder—a boon for spreadsheets, although the vertical scroll on the wheel is deadily accurate. Incidentally, the DeathAdder is priced at Rs 4,249; with the MX518 at Rs 1,600, and the G5 at Rs 3,200, this one is a little overpriced.

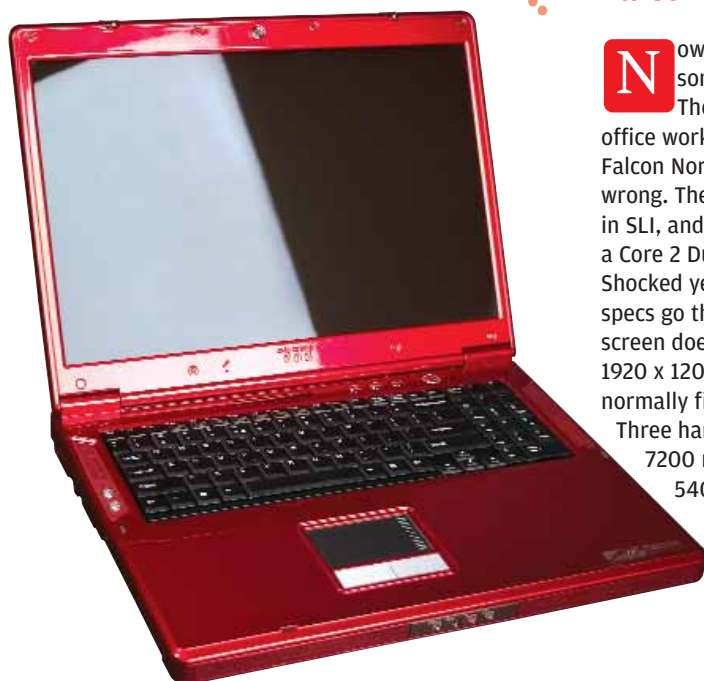
Day 24

Time to bid goodbye to this deadly duo! By now I've gotten used to the Tarantula's smaller keys—a great keyboard for typing, too! I'll even miss the ultra-comfortable DeathAdder. Bah... my colleagues won't be quaking in their boots every time I pick up a railgun any more. Still, for anyone but brand freaks and die-hard Razer fans, I'd recommend passing up getting stung and bitten, especially at this price point.

michael_browne@thinkdigit.com



Falcon Northwest DRX



Now, most of us believe gaming isn't something you do on laptops. They're meant for general office work—Word, Excel, e-mail, etc. Falcon Northwest is out to prove us wrong. The DRX has two 7950GTX cards in SLI, and the processor driving them is a Core 2 Duo X6800 @ 2.93 GHz. Shocked yet? The rest of the specs go thus: the 17-inch screen does a resolution of 1920 x 1200, something you normally find on 24-inch monitors.

Three hard drives are provided—a 100 GB 7200 rpm for performance, and two 160 GB 5400 rpm ones for mass storage. A TV-Tuner and four speakers are built in as well. Surely all this must be really expensive—well over the \$3,000 mark? Actually, it's close to more than twice that: \$7,687 (Rs 3,15,000).



Droolmaal

The good stuff.
Stuff to lust after.
Stuff for the well-moneyed.

Wacom Cintiq 21UX



People love their music a lot, and some love it even more. The AKG K701 is perfect for the latter. These cans, meant to be used for reference, are some of the most stylish ones we've seen. The frequency range goes from 10 Hz all the way beyond 39 kHz! Who'd even think you'd need to go beyond 20 kHz? The leather headband has been designed with bumps, so wearing comfort has been taken care of. The jacks and contacts are gold-coated, so quality is not compromised.

And the impedance rating is 62 ohms! Don't say goodbye to your *el cheapo* Rs 2,000 phones quite yet—unless you're willing enough to part with the \$400 (Rs 16,500), that is.



HTC Advantage



The HTC Advantage X7500 might look like some sort of tiny laptop, but it's more than that. You get a practical, usable keyboard and a 5-inch screen. It is powered by a 624 MHz processor with 128 MB of RAM and 8 GB of space—quite a bit for a mobile device such as this. No fear of it getting lost either—the HTC Advantage comes with an inbuilt GPS unit that uses TomTom Navigator 6. Bluetooth, Wi-Fi, and 3G are all implemented. There are two cameras—a 3MP still camera, and a standard VGA camera for video. The latest version, the X7501, comes with Windows Mobile 6 but without the second (video) camera. The price for the HTC Advantage X7501 is rumoured to be around \$900 (~Rs 37,000).



pieces of lighter greys gives it a rather cool look. All the speakers are magnetically shielded. Klipsch recommends adding their Sub-12 to the setup to add punch to the sound; this is a 12-inch, 300 RMS woofer. It's \$950 (Rs 39,000) for the speakers, but if you want the Synergy Sub-12 woofer, add a further \$499 (Rs 20,500) to the bill.

Klipsch Quintet SL

Klipsch makes some really expensive, high-performance, stylish audio products. The Quintet SL is a flat speaker set based on one of their older best-selling speaker sets. You get two vertical speakers and a horizontal speaker panel. The two smaller rear channel speakers along with the front panels combine to give you the perfect surround sound experience. The dark grey colour scheme with bits and



Alienware Hangar 18

Alienware never disappoints, as a general rule. The Hangar 18 departs from the super-gaming-machine scene. It is, in short, a home theatre system running some pretty mighty hardware. It runs on an AMD Athlon 64 X2 processor and can have up to 4 GB of RAM. Vista is the primary operating system.

There are two digital TV-Tuners and two analogue ones, using which you can record videos of up to 1080p resolutions. The 2 TB of storage space should arguably be more than enough for your HD video, photos, and music, and the 1000 W amplifier will inarguably satisfy those with a taste for really loud music. Starting price: \$1,999 (Rs 81,000).





46 39 Coolest Mobile Phones



75 Open Source Apps, CS3, PowerPoint Tips



88 Onboard's Awful!

Digital Tools

Technology For Personal And SoHo Productivity

Lead Feature

ON THE LOT

All the gear you need to make your first open source movie

Nimish Chandiramani

It's no coincidence that this article shares its title with one of TV's most popular (and you must admit, inspiring) reality shows. Eventually, if it hasn't already, the thought of your own movie will pop into your head... "What will it be about? Who will I cast? *How* will I get it done?"

We can't help you with the first two questions—you're going to have to figure out that for yourself—but we can give you a friendly nod in the right direction for the third.

But First...

What, you might well ask, is an open source movie? The concept has two interpretations: the first is that an open source movie, like open source software, is available not only in its final, finished form, but also as a collection of raw footage and soundtracks, so anyone can make their own version of the movie using the same material. The second interpretation doesn't need the movie's source footage to be available, but slaps on the requirement that the movie be made only with open source software. It should then be released under an appropriate Creative Commons License (the Attribution-NoDerivatives-NonCommercial license seems to be the popular one). Of course, you can still make the source files for your movie available to the general public, and they might thank you for it.

How you release your movie is your decision; we're here to tell you about the best open

● Producer ● Director
● Writer ● Cinematographer
● Art Director ● Editor

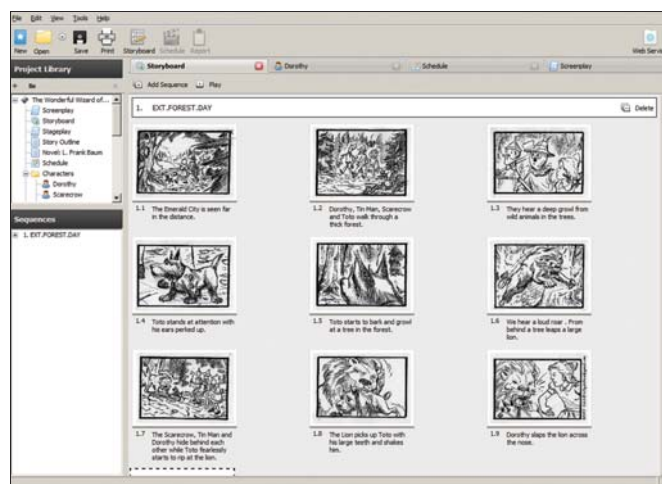
source software to help you get there. You'll find nearly all of them in ArtistX, which you can boot into using this month's DVD.

Before It All Begins

You can't just inflict your camera-toting self on the world and hope to create the next big thing in film-making. Apart from a sense of reality, you need a plan. Convenient though it might be, great movies don't just *happen*—they start with scripts, storyboards and characters. For that, you need Celtx.

Celtx (you'll find it on our July CD) calls itself a "media pre-production" tool for prospective movie makers. It lets you take your movie from a fleeting idea to a well-planned project. It lets you outline your story, create a screenplay and storyboard for your movie and add characters' profiles. If you're a more serious film-maker, you can use Celtx to set

Celtx calls itself a "media pre-production" tool for prospective movie makers. It lets you take your movie from a fleeting idea to a well-planned project



If you're serious about making your movie, you should start with Celtx

filming schedules, manage actors, wardrobe and props.

Celtx starts new projects with a screenplay and a storyboard, and you can right-click in the left pane to add items like a story outline to descriptions of special effects you intend to employ. A logical way to start would be to add a story outline before anything else. Next, add your characters: give them family backgrounds, eccentricities, even a physical descrip-

tion. The next step would be to start building your screenplay, and then the storyboard. While you're writing your screenplay, Celtx makes things easier for you by letting you add annotations and notes, and by giving you an autocomplete menu when you start typing character names.

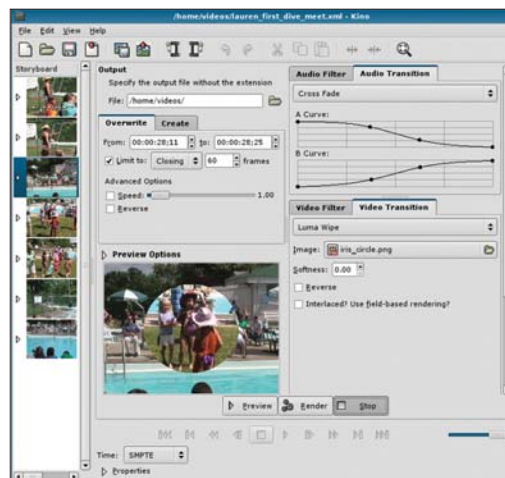
Once you've made a plan, you just need to execute it.

Aside: The Lazy (?) Way

If you don't want to shoot your own footage—whether it's laziness or a lack of equipment—there are sources on the Internet where you can get yourself a whole cornucopia of raw footage, just waiting to be edited and mixed into a new film. One such site is MOD Films (www.modfilms.com), where you can get your hands on over nine hours of raw footage, loads of concept art and more. They've even made their own re-mixable movie, called *Sanctuary*, which you can modify to your own tastes. But we digress...

Capture And Cut Up

If your camera uses a proprietary driver to connect to your PC, chances are you have no choice but to use its own bundled software to dump video to your drive (Sony camcorders are quite notorious in this respect). You could use VirtualDub—a greatly undermined tool—to import



Kino is the need of the hour to turn lots of raw footage into a decent movie

Off-track

You don't really need to go out and shoot real people and real things to make a movie—if you've got a webcam or a respectable PC and lots of determination, you can create your own stop-motion or 3D movie, à la *Elephants Dream*, which is easily the most famous open source movie in recent times. What you need:

Blender

Its interface takes getting used to, and creating a good 3D model takes plenty of skill—not to mention animating it—but Blender lets you create some really amazing animations. Setting up animations for human and animal models is made easy with its Skeleton Creation Mode and walk cycles, and you can use Python to write more complex animation scripts.

Stopmotion

The good thing about stop-motion animation is that you only need a webcam at home to do it, but that good is quickly offset by the amount of work that'll go into your actually creating a stop-motion feature.

Stopmotion is a simple tool. There's not much technology can do when your biggest effort involves moving the arms and legs of a doll while ensuring that your set or camera doesn't change position by even an inch. But it does offer you a few helpful features like Onion Skinning, which lets you overlay previous shots over your current camera view, so you can create a tighter, more fluid-looking animation.

video from your camera to your PC, if the camera supports the Video for Windows capture driver—find out in its documentation. VirtualDub is a great tool to process and encode video from your camera, but it comes up short if you need to edit your movie in true film-editor fashion.

To cut up and edit movies, you need to use Kino, one of the most popular non-linear editing (NLE) tools for Linux. It lets you break up your movie into scenes, stitch movies together, add special effects and a lot more. It can even capture video from a FireWire-based camera.

Like all video editing tools, it takes a bit of tinkering to get used to Kino, but once that's done, working with it is quite pleasant.

A Little Make-up

Once you've finished editing your movie, you might want to consider a bit of touching up: Kino won't help you much if you have to make changes to single frames, or if you want to try your hand at rotoscoping, a technique where you draw on each individual frame to convey the impression that you've animated something very well. Think of it as a primitive version of motion capture. If you want to edit individual frames, you need to turn to CinePaint.



CinePaint—it's The GIMP for movies!

CinePaint's former name—Film GIMP—should serve as a hint to what it does. The program supports all major video formats, including high-definition formats like Kodak's Cineon and ILM and NVIDIA's OpenEXR. The interface looks just like that of The GIMP, so if you've used The GIMP before, you shouldn't have any problems. Use CinePaint to make corrections in frames that didn't come out too good, add titles to your movies if you're not satisfied with Kino's capabilities in that department, or add your own weird animations—but remember that working on individual frames can be as exhausting as it is rewarding.

Tell The World!

When your movie is finally done, you'll need a good video encoder to be able to inflict it upon the masses. If you want to make your own holiday DVD, complete with menus, use DVD-Styler. For more advanced encoding features, there's AVIDemux, which also doubles up as a DVD authoring tool when extended with software like dvdauthor.

If YouTube is your chosen route to fame, then you don't have to worry much—as long as you encode your movie to be less than 100 MB and in a file format like AVI or MPEG, it'll get converted by YouTube once you upload it.

The last step is to e-mail your friends and tell them to e-mail their friends about your new creation! (The open source tools for that would be Firefox or Thunderbird, but you already know that). ☑

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A Cell, A Bell, And A Whistle

Now these aren't your run-of-the-mill cell phones... they're miniature computers aimed at making your existence just a little more upwardly mobile!

Michael Browne

From being play-toys of the rich to becoming tools of some necessity, to trickling down to (most of) the urban masses, the mobile phone has taken almost too short a time to get to where it is in this country! There was a time around the mid-'90s when some people actually used to rent cell phones—the bricks of that era—to flash around at momentous occasions and social

gatherings. Costing as much as they weighed, these devices were dysfunctional clods compared to what we have today.

The technological improvements in cell phones have been colossal—comparable in scale to perhaps the difference between a 133 MHz Pentium 1 processor of yesteryear and a Core 2 Duo of today. Add to this the fact that underlying allied technologies have become phenomenally cheaper and you have the explanation behind the explosive growth of the cellular industry, not only locally but worldwide.



To the layman, what this translates to, of course, is better phones at lower prices. In fact, with respect to some of the devices we've tested this month, calling them *cell phones* is tantamount to an insult. They represent the new era of smart and truly connected devices.

Although we'd initially meant to test mostly PDAs and smartphones, we haven't forgotten our promise in May of covering a few of the mainstream models as well. You'll find a smattering of them in our entry-level category. We did a lot of market research and dug out some of the hottest handsets around for this comprehensive shootout. We've also split up the test into two very distinct categories—business-oriented devices (including PDA phones) and multimedia-oriented devices, to enable quick buying decisions!

BUSINESS PHONES

Fondly called *smart smartphones*, PDA phones are the Einsteins of the handset world. In general, a PDA phone will have better hardware under its hood, and will be capable of running a greater variety of applications than will a regular smart-

phone. A faster processor and more memory equate to greater productivity, and a PDA phone will also offer additional connectivity and productivity options.

Earlier the cherished darlings of the rich, PDA phones have now become sufficiently inexpensive to be sought after by lesser mortals like executives and managers, who can utilise their many functions in a productive way. In fact, a PDA phone is also very much within reach of your average urban college-going spoilt brat (with a little money management).

Most PDA phones offer users the ability to work seamlessly with documents and spreadsheets, and will provide the flexibility of a full QWERTY keypad while providing wireless connectivity and e-mail client support, should you need to mail your labours to your boss in office while on a tour. A PDA phone is also a fraction of the size and weight of a laptop.



We called for 18 PDA phones, representing between them perhaps the best replacements for a laptop that your money can buy.

Gorgeous Value

(Up To Rs 17,000)

Features

A few years ago, expressing the desire to buy a smartphone (let alone a PDA) at this price point would probably mean a trip to a psychiatrist. These phones aren't strictly PDAs, and do sacrifice on some functionality in order to keep prices within bounds, but at half the price of a traditional PDA, heck, who's complaining...?

At under Rs 10,000, the **Nokia E50** is truly light-weight, inexpensive and very compact. In fact, it is the slimmest phone in this category, and catches the eye because of its compact form factor. The colour itself (dull black) will not inspire much. The screen, though small, is brilliantly crisp, mainly due to the high pixel density (240 x 320). Although the camera is strictly so-so, this is forgivable for a business-oriented phone. The lack of Wi-Fi and a full keypad, and the ability to work with office documents (only document editing allowed, no creation) means this is more a smartphone than a PDA. However the price makes it a killer deal.

Nokia's E61 and E62 duo have had their fair share of attention. With a large, clear, and crisp screen, and an even larger form factor that some like and others hate, these phones are definitely aimed at users looking at affordable PDAs. The two look identical, and are extremely well-built—very solid in-hand. A brilliant 2.8-inch TFT with 16 million colours is the right way to go, and the



Nokia E50
Business is sleek!

only difference between the functionality of the two is the inclusion of Wi-Fi and 3G capabilities on the E61. The QWERTY keypad is awkward to use at first, but after a couple of days, we really got used to them. Nokia should have made this duo slimmer—these phones just aren't for jeans! A single ear-bud is provided, meaning music wasn't given importance. Battery life is stellar thanks to the huge 1500 mAh battery on both phones. For some weird reason, both phones miss out on HSCSD (High Speed Circuit Switched Data), a feature present on the more basic E50.

Sony Ericsson's M600 is definitely a winner as far as looks and form factor go. Compact enough to fit denims, it also feels substantial in larger hands. The gorgeous screen feels bigger (though it's not) than the E61/E62 mainly due to its vertical alignment (both the Nokias' screens are wider than they are long). Although the touchscreen works rather well and picks up even finger hits, we have two complaints with the stylus: it's too short to write properly with, and after a while, it gets loose and keeps falling out of its holder—not acceptable! The keys on the M600 work surprisingly well—we were initially dubious about having two letters on a single key, but it works well: tap the left side of the oblong keys and you have a Q, tap to the right and you'll get a W. It just needs getting used to.

The only Windows Mobile (WM)-based device in test, **HP's iPAQ 514** is their latest model; it tries to be a compact PDA by losing the QWERTY (typical on all other iPAQs). Based on WM6, this is a powerful PDA in the guise of a smartphone. It's built well, but feels built to a budget unlike other iPAQs, which, considering its price, seems fair. The keypad does feel a little tacky, but is well-

How We Tested

The following is our division of the phones:

Business Phones	Multimedia Phones
Upto 17,000	Up to 12,500
17,001 - 25,000	12,501 - 20,000
above 25,000	Above 20,000

Testing procedures were identical across the categories, except that the business phones were rated on their ability to work with

office documents and their wireless data transfer abilities. Weightages changed too—for example, multimedia phones should have better cameras than, say, business phones, so we did not assign too many weightage points to a business phones' camera. Conversely, a business phone should have multiple connectivity options and a good application bundle, but for a multimedia phone, this isn't as important.

We divided features into the following broad heads, while awarding points for the presence or absence of a feature. Subjective criteria were awarded points on a scale of 10.

Features

Physical specifications: Characteristics like dimensions, screen size, weight, and form factor were considered here.

Memory: Inbuilt memory, expandable memory, and their characteristics.

Other phone features: These include address and call book capabilities, and features like voice recording and voice dial. We also recorded talk time and standby time here (according to manufacturer-quoted specs).

Connectivity: This includes all possible connectivity options like Wi-Fi, Bluetooth, GPRS, EDGE, etc.

Accessories: What came bundled on each phone (applications) and inside each box (accessories)

business functionality: We rated the ability to work with different documents, the interface of the phone itself while accomplishing the task, as well as the bundled applications that aid the purpose. And finally, camera and media player features were listed.

We rated the build quality of the phones, more importantly, we rated ergonomics—from comfort to usability.

Performance

Signal and Voice Clarity tests: This is the most important test for any cell phone or business. Call quality and signal quality were looked at. We used two test zones—one was close to a window thereby giving a better signal (zone 2), and the other (zone 1) was right in the middle of our office, where even the strongest of cell phone signals die a non-mysterious death. We also tested hands-free clarity.

The Camera: We tested all possible aspects of the camera (if present) on each phone.

Multimedia: This test included quality of audio and video playback—basically a good test of the speakers, bundled headphones, and screen of a cell phone, aside from its processing hardware.

We also tested processing speed by multitasking, and Wi-Fi speeds were tested by transferring a 25 MB file from a laptop to the business phones. The laptop was a Core 2 Duo based, 1 GB affair connected to a Linksys WRT54G wireless router via RJ45 to ensure that the only bottleneck would be the wireless connection on the handheld's side.

laid-out and comfortable to use. Voice Commander comes installed on the iPAQ 514, meaning you can go truly hands-free by using voice commands for commonly-used applications. Besides name-based number dialling, you can also voice-dial single numbers, that is, actually call out the number.

One attractive-looking phone, finished in soft matte black, the **Motorola A1200** has a very cool, translucent plastic flip cover over the screen. Like the ROKR E6, the Motoming a.k.a. the A1200 is Linux-based. Missing out on a keypad is never good unless the touchscreen is brilliant, and this is the A1200's first shortcoming—the touchscreen. We saw a lot of mis-registering stylus hits. There's very little space to type out characters, so composing SMSes is painful. Character recognition is not as good as WM or Symbian's UIQ. This mobile version of Linux definitely has its work cut out as a cell phone / PDA platform.

Performance

All the Nokia phones have good antennas, with almost no dropping in calls and reasonable voice clarity even in zone 1. The **E50** in particular excelled here, and is definitely the benchmark-setter in this category as far as this parameter goes. The **Sony Ericsson M600** takes fourth position overall, while the **HP iPAQ 514** brings up the rear (voice clarity in zone 1 became a problem).

Although none of the cameras on the phones in this category are worth too many words, the E50 comes closest to being near-acceptable. The image quality on the iPAQ is poor.

The Sony Ericsson M600's keypad is surprisingly usable—looks can be deceptive. The Nokia E61 and E62 are even better!

If you plan on using your full-time business phone as a part-time music player, you'd probably want to take a look at the Sony Ericsson M600. The E61 / E62 duo do reasonably well—just make sure to invest in a 3.5 mm converter and get a decent set of earbuds. Video playback, too, is great on the E61 / E62, courtesy their large, high-colour displays.

The two brick-like Nokias were also the snappiest while multi-tasking, while the Sony Ericsson was the proverbial tortoise. Thankfully, a firmware flash seemed to get its gears in motion.

The Motoming gave us decent signal reception in zone 2, but very mediocre performance in zone 1. It's also not as good as its multimedia-oriented sibling, the Moto ROKR E6, as far as multimedia playback goes.

With only two of these phones supporting Wi-Fi, it wasn't much of a comparison, but for the record, the E61 is a little faster than the iPAQ 514. Wireless browsing on both phones is acceptable—a sustained speed of 1.35 MBps should be enough for everything except heavy downloading.

Our Conclusion

The phones in this category deviate from the classical idea of a PDA. In fact, as our test revealed, these are simply business-oriented smartphones. The biggest attraction is their price—getting a full-fledged PDA phone for anything under 20,000 rupees is sadly still impossible. This is the next-best thing.

Flashy and gimmicky generally means a touchscreen. If you want a really nice form as well as flash-bling factors, then look at the Sony Ericsson M600. It doesn't have a camera, though.

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Decent music quality and a gorgeous screen (its highlight, really) will be yours for the taking.

The Motomob loses out on functionality. It's definitely not for serious business users; rather, it targets those in between a fully-functional PDA and something flashy. The Motomob is only for Motorola fans who want a touchscreen real cheap...

Nokia's E61 / E62 duo have very good build quality, great screens, and functional QWERTY keypads to their credit. The E61 bags the Digit Best Buy Silver award, and shadows its cheaper twin by a hairsbreadth with the inclusion of Wi-Fi—which in our collective opinion is a must for this type of device. If you need wireless connectivity, this is the sub-17,000 smartphone to buy. If you don't, the E62 will suffice. Being a newer model, the E62 has support for A2DP, something the E61 misses out on.

For someone looking at the flexibility and application support provided by Windows Mobile, look no further than the HP iPAQ 514 at this price point. It has all the basic tools to get your job done, Wi-Fi support, MS Office support, and a host of useful applications pre-installed. At Rs 14,000, this is the cheapest way to go WM!

Finally, we have our Digit Best Buy Gold winner—Nokia's E50 was just too irresistible a package to deny it the award. A PDA it's not, but it's got nearly all the goodies except for wireless connectivity. The inclusion of a camera certainly doesn't hurt. Just right for the executive—who wants something that looks classy, is compact, and has all the necessary features for a business-oriented device, with some multimedia capabilities thrown in.

Beyond The Basics

(From Rs 17,001 To Rs 25,000)

Features

This category is where the fun really starts, as each manufacturer now has a sizeable budget to work with to give even more functionality, and more importantly, *usability*. That word was missing in the sub-17,000 phones. What's the use of all the features in the world when they aren't usable... for example, a PDA that allows you to write MS Word documents, but doesn't give you a proper keypad to accomplish the task. As many

Blackberry's Pearl features a compact yet functional QWERTY keypad and a roller-ball-type joypad that makes navigation a snap

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AUGUST 2007



Sony Ericsson P990i
Features galore

users will testify to, working with T9 predictive text is a pain for anything longer than 30 words.

HTC's Touch was something to look at. Based around the iPhone-like TouchFLO navigation, this is one smart-looking phone. It's well-finished in velvet black, which gives it a soft feel. The navigation button on the front bezel looks amazingly attractive—large and white set in a chrome bezel. TouchFLO tries to cash in on the iPhone concept of using your finger to swipe around the screen, and it works pretty well on this phone. For example, swiping your finger on the HTC logo grants access to multimedia (music, photo, and video) content. The swipe also works well for contacts—swipe left for previous and right for next, and so on. The swipe motion needs you to exert a little extra pressure, which most users will have to adjust to.

HTC's D600 is a budget attempt at a PDA—but a good one. It's got an excellent screen, in fact, even better than that on the C800 (another costlier HTC model); it looks clearer. The buttons are also very well-placed on the front bezel—a good thing, considering it lacks a keypad.

The **HTC C720W** has a full QWERTY keypad, a little too much chrome on the front bezel, and a really nifty and functional set of touch keys on the front bezel that control volume with a finger-flick. The keypad compromises on spacing for compactness, and the keys are hard—but once again, it's quite usable.

The **O2 Xda Stealth** is the fourth WM device in this category. Rounded corners and black make for a good combination, and this phone features one of the best sliders around—smooth as butter, with just the right feedback even after a couple of weeks of use. The positioning of the stylus underneath the phone and too close to the USB port is quite an irritation.

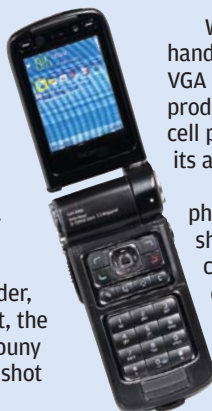
One of the only devices with both number and QWERTY keypads, **Sony Ericsson's P990i** is a large phone, with a large and crisp screen. The iffy materials used on its exterior didn't leave a good impression. While the backlighting is excellent, the QWERTY is not ergonomic—the buttons are too small, and it takes some getting used to. The number keypad looks uncomfortable but is surprisingly easy on the fingers. This phone also has a good camera

Nokia N93—Look Ma, I'm A Camcorder!

Nokia's N93 is a camcorder under the guise of a fully-functional cell phone. It's a clamshell phone that, once open, allows you to twist the screen, thereby orienting it for viewing while shooting. Incidentally, the camera is mounted on the side of the phone. This gives a handycam-type of feel while shooting.

The keypad is very well-laid-out: great key spacing, and good feedback and tactility. Even the joypad feels good under your thumb.

It's bulky at 180 grams, but not bulky for a camcorder, we say. With Wireless, 3G, EDGE, and Bluetooth support, the N93 is really connected. We were dissatisfied with the puny 128 MB memory card bundled, although the videos we shot turned out to be surprisingly compact.



While it's fairly middling at photo shooting (the N73ME beats it hands down), video shooting is what Nokia has been harping about. VGA resolution (640 x 480) at 30 fps is good, and capable of producing some nice, clear videos. With 3x optical zoom (the only cell phone with this feature!), the N93 makes no bones about where its appeal lies. Good-quality MP3 playback, too, is a definite plus.

At Rs 42,209, the Nokia N93 is definitely costly, but it's a phone that has no competition really when it comes to video shooting. It's as close as cell phones have come to digital camcorders, but to be honest, to that section of consumer electronics the gap is more a chasm at the moment. We hope to see bigger and better sensors, higher video resolutions, and a longer optical zoom on Nokia's camcorder range in the future. If you aren't into video shooting, give the N93 a miss—other cell phones will do all it does at half the price!

and a good media player. For the price (Rs 19,897), the SE990i has an extensive feature list.

Blackberry's Pearl features a compact yet functional QWERTY keypad and a roller-ball-type joystick that makes navigation a snap. One look at the screen icons will tell you this is no multimedia phone—very business-like, with loads of applications pre-installed. For example, Yahoo! Messenger and Google Talk are set to run out of the box. The Pearl is really well-built, and the compact form factor was something Blackberry sorely needed in their line-up.

Performance

The Sony Ericsson P990i offered some swift Wi-Fi transfers—to the tune of 1.75 MBps! This PDA offers great music quality while suffering a bit in on call quality.

During the voice clarity tests, the HTC phones revealed where their true genes lie—and it's definitely not as a handset. Functionality—yes, call clarity—needs to improve.

The best *phone* in this category was the Blackberry Pearl. In fact, it was much better than anything else in the previous category as well. Amazing... no voice distortion even while moving from zone 2 to zone 1! It does have its weak points, though—like the mediocre camera.

Our Conclusion

It's smart looking, and it's functional, not to mention nifty—and more, it's our Best Buy Silver: the **HTC Touch**—unbeatable value for money at under Rs 20,000. Definitely for you if you want a flashy PDA with almost all the features.

If you're looking for a multimedia-rich PDA, the **Sony Ericsson P990i** will fit the bill. Just remember a belt case is a must, as this phone won't fit tight jeans—we suggest you avoid trying! A good camera, a great media player, two keypads, a good screen, and all the connectivity you'll need—Digit Best Buy Gold belongs here!

The **RIM Blackberry Pearl** is just as flashy as the HTC Touch, but its talents are more subtle, less in-your-face. It's very functional, very Internet friendly, and it has a stellar antenna to keep your phone calls connected almost everywhere. If all this appeals, then by all means, take the plunge. We feel the price is a little steep, especially considering some of the other phones in this test. Do not forget that Blackberry phones aren't available off the market shelf. They are sold with select service provider schemes.

Corporate Mates

PDA Phones (Above Rs 25,000) Features

Being a corporate user, you'll probably scoff at many of the contestants in the previous two categories. You receive a hundred mails a day. A QWERTY keypad and a fully-functional document assistant aren't something you flash about—you actually use every feature to the fullest. In such a case, money isn't the sole concern—functionality and feature-convergence is.

The GPS-ready **ASUS P535** is a standout looker. It's compact, has exceptional build quality, and sports a dark grey body that suits boardroom

environments. It comes with the richest software bundle we've seen in a while. Take a look at Voice Commander 2.0, a remote control / presentation utility, a GPS utility with detailed maps, an encryption software that protects all your prying data from prying eyes, and a business card scan utility that works really well. A 2 MP camera with auto-focus hasn't been forgotten.

HTC's C800 is another solidly-built device with pleasing aesthetics, except for the all-chrome buttons on the front. The full QWERTY that slides out from the side is a big plus. It's large enough for the ham-handed, and it doesn't add to the dimensions of the phone.

O2's Xda Zinc has a form factor identical to that of the P535 and the C800, but like the former, it misses out on a full QWERTY keypad. Button ergonomics are good, though some may find that the light grey body catches stains a little too easily.

The old man in this test was **IMate's Jasjar**. Despite the fact that the Jasjar is essentially a 2005 model, it has all the features needed to make it here, including a huge 3.7-inch screen that actually sports an unheard-of VGA (640 x 480) resolution. Then there's the full QWERTY keypad that is revealed when you open the laptop-like lid. The best-laid-out QWERTY in test, period! It uses the now-ancient 802.11b Wi-Fi protocol, and at 285 gm is by far the heaviest PDA now in our labs.

Nokia's Communicator series gets a new flagship—the **E90** exemplifies what the Communicators are all about. The hinge quality has been beefed up, the camera now captures 3.2 megapixels, and both screens now display 16 million colours. Incidentally, the smaller outer screen is very crisp and ultra-usable—something earlier Communicators missed out on. The keypad is typically Communicator—good tactile feedback and well-laid-out.

RIM's Blackberry 8800 is their flagship, and it shows: a well-laid-out QWERTY, and all the great features aboard the Pearl minus the camera that RIM figures corporates could do without anyway. But mysteriously, Wi-Fi is absent. When you take into consideration that this phone will be part of a service provider bundle, this seems to make sense. Browse using GPRS if you must!

Performance

Despite our best efforts at signal scrambling, the Blackberry 8800 wasn't fazed one bit—signal quality was even better than that of the brilliant Pearl. This 8800 loses out on multimedia performance—music quality isn't really acceptable—you just have to live with the fact. The screen is good, however, and that makes for a good visual experience, as we discovered in our video playback tests.

Nokia's E90, too, has good signal quality, and is snappy to boot. Its camera does surprisingly well, and at 2.1 MBps on our

A QWERTY keypad and a fully-functional document assistant aren't something you flash about if you're a corporate user—you actually use every feature to the fullest








BEST BUY
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AUGUST 2007



Nokia Communicator E90
The new brick!

Scoreboard		Business Phones UP to 17,000			
BRAND MODEL	HP iPAQ 514	Motorola A1200 (Motomring)	Nokia E50	Nokia E61	Nokia E62
					
*for category Business Phones up to 25,000					
Price (Rs)	Rs 14,000	Rs 13,399	Rs 9,500	Rs 16,000	Rs 11,500
Comments	+ Compact - No QWERTY	+ Touchscreen - No keypad	+ Sleek - Limited functionality	+ Gorgeous Screen - Wide footprint	+ Value for money - Wide footprint
Final Score (Out of 100)	55.06	54.29	61.17	56.09	55.87
Features (Out of 55/52*)	30.80	32.98	30.56	32.15	31.49
Performance (Out of 30/36*)	15.10	11.75	17.11	15.93	13.23
Price Index (Out of 15/12*)	9.16	9.57	13.50	8.02	11.15
Features					
Physical Specs					
Form Factor	Bar	Bar with flap	Bar	Bar	Bar
Network Bands	Triband	Triband	Triband	Triband/UMTS	Triband
Screen Resolution (Pixels)/Size (Inches)	176 x 220 / 2"	240 x 320 / 2.6"	240 x 320 / 2"	320 x 240 / 2.8"	320 x 240 / 2.8"
No of Colours	65K	256K	256K	16M	16M
Touchscreen / Dual Screen (✓/✗)	✗/✗	✓/✗	✗/✗	✗/✗	✗/✗
Dimensions (LxWxH) (mm)	107 x 48.6 x 16.3 mm	95.7 x 51.7 x 21.5 mm	113 x 43.5 x 15.5 mm	117 x 69.7 x 14 mm	117 x 69.7 x 14 mm
Weight	102 gm	122 gm	104 gm	144 gm	144 gm
Memory					
Phone Memory (MB)	128 MB (shared)	8 MB	70 MB (shared)	75 MB	80 MB
Expandable Memory / Type	✓/microSD	✓/microSD	✓/microSD	✓/microSD	✓/miniSD
Hot Swappable (✓/✗)	✓	✓	✓	✓	✓
Other Features					
Charging via USB (✓/✗)	✓	✓	✗	✗	✗
Keypad (Regular/QWERTY)	✓/✗	✗/✗	✓/✗	✗/✓	✗/✓
Talk/Standby Time *	6.3 / 188 hrs	4 / 200 hrs	6.4 hr/240 hr	7 / 260 hrs	6 / 330 hrs
Offline Opearability (✓/✗)	✗	✗	✓	✓	✓
Operating System	Windows Mobile 6	Linux	Symbian 9.1 (S60)	Symbian 9.1 (S60)	Symbian 9.1 (S60)
Communication Options					
Internet (GPRS/HSCSD/EDGE/3G)	✓/✗/✓/✗	✓/✗/✗/✗	✓/✓/✓/✗	✓/✗/✓/✓	✓/✗/✓/✗
Connectivity (WiFi/Bluetooth/IR/USB)	✓/✓/✗/✓	✗/✓/✗/✓	✗/✓/✓/✓	✓/✓/✓/✓	✗/✓/✓/✓
Bluetooth Version/A2DP support	1.2/✗	2/✓	2.0/✓	1.2/✗	2.0/✓
Accessories					
Bundled Applications	✗	✗	PC Suite	PC Suite	PC Suite
Bundled Accessories	Charger, data cable, handsfree kit	Charger, data cable, handsfree kit	Charger, data cable, handsfree kit	Charger, data cable, handsfree kit	Charger, data cable, handsfree kit
Build Quality (So10)					
Body / Keys	7.25 / 6.5	6.5 / 5.5	7 / 6.5	7.5 / 7.25	7.5 / 7.25
Movables Parts / Accessories	NA / 6.5	6.5 / 6	NA / 6.5	NA / 7.25	NA / 7.25
Accessories					
Ergonomics (So10)	6.5	6	6.5	7.25	7.25
Interface / Navigation / Joystick	6.25 / 6.5 / 6.5	5.5 / 6.25 / 6.25	6.5 / 6.75 / 5	6.75 / 7 / 5.75	6.75 / 7 / 5.75
Keypad Layout/Comfort	6.5 / 6.75	NA / NA	7 / 6.5	6.75 / 6.5	6.75 / 6.5
Keypad Backlight	6.5	NA	7	6.75	6.75
Camera Specs					
Camera (✓/✗) / Mega Pixels	✓/1.3 MP	✓/2.0MP	✓/1.3 MP	✗/NA	✗/NA
Video Capture Resolution	176 x 144	352 x 288	352 x 288	NA	NA
Dual Cameras	✗	✗	✗	NA	NA
Camera Settings (So10)					
PDA Functionality	5.25	5	5	NA	NA
Sync Software Interface (So10)	6.75	5.75	7.5	7.5	7.5
Productivity (Office Apps. (So10)	6.25	6	3.5	6	6
Pre-installed Applications (So10)	6.75	6	5.5	5.75	5.75
Performance					
Signal Reception Zone 1/2 (So10)	5 / 5.25	4.75 / 6.25	6.25 / 7	5 / 5.75	5 / 5.75
Voice Clarity Zone 1/2 (So10)	4 / 5	5 / 6.25	6.5 / 7	5 / 5.5	5 / 5.5
Handsfree Clarity (So10)	5	6	7	6.5	6.5
Photo Quality Colour/Crispness (So10)	3.25 / 2.75	5 / 5.5	4.5 / 4.25	NA / NA	NA / NA
Playlist Features/Audio Quality (So10)	6.25 / 6	5 / 5	5 / 6	6 / 6	6 / 6
Video Playback Quality (So10)	5	5	5.5	6.25	6.25
Processing Speed (So10)	5.5	6	6	6.5	6.5
WiFi Transfer Speed (MBps)	1.25	NA	NA	1.35	NA

Business Phones Up to 25,000

Sony Ericsson M600	HTC Touch	HTC D600	HTC C720W	O2 Xda Stealth	Sony Ericsson P990i	RIM BlackBerry Pearl
						
Rs 16,500	Rs 19,900	Rs 19,700	Rs 23,900	Rs 21,500	Rs 19,897	Rs 24,990
+ Great screen, footprint - No camera	+ Compact - Lacks QWERTY	+ Well built - Poor call quality	+ Good build - Poor call quality	+ Slick Slider - Keypad	+ Great feature set - Bulky, Plasticity	+ Sleek, functional - Cramped QWERTY
52.68	61.76	58.82	59.88	60.04	65.84	59.54
33.17	31.58	30.98	31.72	31.49	36.33	30.55
11.75	19.48	17.04	19.26	18.65	18.82	20.48
7.77	10.69	10.80	8.90	9.90	10.69	8.51
Bar	Bar	Bar	Bar	Slider	Bar	Bar
Triband/UMTS	Triband	Triband	Triband	Triband	Triband/UMTS	Triband
240 x 320 / 2.6"	240 x 320/2.8"	240 x 320 / 2.8"	240 x 320 / 2.5"	240 x 320 / 2.4"	240 x 320 / 2.75"	240 x 260 / 2.2"
256K	65K	65K	65K	65K	256	65K
✓/x	✓/x	✓/x	x/x	✓/x	✓/x	x/x
107 x 57 x 15 mm	99.9 x 58 x 13.9 mm	109 x 58 x 18 mm	111.5 x 62.5 x 12.8 mm	110 x 53 x 22.5 mm	114 x 57 x 26 mm	107 x 50 x 14.5 mm
112 gm	112 gm	126 gm	130 gm	140 gm	150 gm	89.5 gm
80 MB	128 MB (shared)	x	x	192 shared	60 shared	64 shared
✓/M2	✓/microSD	✓/SD, MMC	NA	✓/MiniSD	✓/MS Pro Duo	✓/microSD
✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓
x/✓	x/x	x/✓	x/✓	✓/x	✓/✓	x/✓
7 / 340 hrs	5 / 200 hrs	5 / 200 hrs	5 / 220 hrs	4.3 / 150 hrs	9 / 430 hrs	3.3 / 360 hrs
x	✓	✓	✓	✓	✓	✓
Symbian 9.1 (UIQ 3)	Windows Mobile 6	Windows Mobile 5	Windows Mobile 5	Windows Mobile 5	Symbian 9.1 (UIQ 3)	Proprietary
✓/✓/✓/✓	✓/✓/✓/✓	✓/✓/✓/✓	✓/✓/✓/✓	✓/✓/✓/✓	✓/✓/✓/✓	✓/✓/✓/✓
x/✓/✓/✓	✓/✓/✓/✓	N/✓/✓/✓	✓/✓/✓/✓	✓/✓/✓/✓	✓/✓/✓/✓	x/✓/✓/✓
2.0/✓	2.0/x	2.0/✓	✓/✓	1.2/x	2.0/✓	2.0/x
x	x	x	x	x	x	x
Charger, data cable, handsfree kit	Charger, data cable, handsfree kit	Charger, data cable, handsfree kit	Charger, data cable, handsfree kit	Headset, Data Cable, A/C adapter	Headset, Data Cable, A/C adapter	Charger, data cable, handsfree kit
6.5 / 6.75	7.5 / NA	7.25 / 6.5	7.5 / 7.25	7.25 / 6.25	6 / 6	7 / 6.5
NA / 6.5	NA / 7	NA / 6.5	NA / 6.75	8 / 7	6 / 6.5	NA / 6.25
6.5	7	6.5	6.75	7	6.5	6.25
6 / 6.25 / NA	7.25 / 7 / 6.5	6.75 / 7 / 6.75	6 / 6 / 6.5	7 / 7 / 6.75	6 / 6.25 / 5.75	6.5 / 6 / 6.5
6 / 6.25	NA / 5	NA / NA	6.25 / 6	7 / 7	5 / 5	6.5 / 6.5
6.75	NA	NA	7.25	2	6.75	6
x/NA	✓/2.0 MP	✓/2.0 MP	✓/1.3 MP	✓/2.0 MP	✓/2.0 MP	✓ / 1.3 MP
NA	176 x 144	176 x 144	176 x 144	176 x 144	176 x 144	x
NA	x	x	x	x	✓	x
NA	5	6.25	6	4.75	5.25	2.5
6.25	6.75	7.5	7.5	6.75	6.25	6.75
6	7	6	6.5	6.75	6	6.5
5.5	6.5	6	6.75	6.75	6	6.5
5.25 / 5.5	4.5 / 6	4.5 / 6	5 / 5.5	4.75 / 5.75	4.75 / 6	6.75 / 7
4.25 / 5	5 / 6	4.25 / 5.5	4 / 5	3 / 4.75	3.5 / 5	7.25 / 7.5
6.25	6	6	6	5.75	6	7
NA / NA	4.75 / 4.75	5.5 / 5.25	5 / 5	5 / 4.5	5.75 / 6	4 / 4
6.25 / 6.5	6 / 6	6 / 6.25	6 / 6.25	6.25 / 5.5	6.25 / 6.5	2.5 / 5.25
6	6	6	6	5.5	6	6
4	5.5	5.75	6	5.5	3	5.75
NA	1.16	NA	1.36	1.65	1.75	NA

Scoreboard

Business Phones Above 25,000

BRAND MODEL	ASUS P535	HTC C800	I-mate Jasjar	Nokia Communicator E90	O2 Xda Zinc	RIM BlackBerry 8800
						
Price (Rs)	Rs 37,800	Rs 34,900	Rs 40,000	Rs 40,499	Rs 34,990	Rs 31,990
Comments	+ Good build, looks, features - Expensive	+ Good build, features - Expensive	+ The ultimate QWERTY - Phasing out	+ Extremely powerful - Heavy, bulky	+ Large keypad - None in particular	+ Well built, features - No WiFi support
Final Score (Out of 100)	61.26	59.78	57.78	64.99	60.52	59.17
Features (Out of 52)	33.01	32.74	33.89	36.19	32.98	29.11
Performance (Out of 38)	20.63	18.79	16.70	21.69	19.30	21.06
Price Index (Out of 10)	7.62	8.25	7.20	7.11	8.23	9.00
Features						
Physical Specs						
Form Factor	Bar	Bar with side slider	Swivel and Fold	Bar and folding	Bar	Bar
Network Bands	Triband	Triband	Triband/UMTS	Triband	Triband/UMTS	Triband
Screen Resolution (Pixels)/Size (Inches)	240 x 320 / 2.8"	240 x 320 / 2.8"	640 x 480 / 3.7"	800x352/240x320/4"	240 x 320 / 2.8"	320 x 240 / 2.8"
No of Colours	65K	65K	65K	16M (both)	65K	65K
Touchscreen / Dual Screen (✓/✗)	✓/✗	✓/✗	✓/✗	✗/✓	✓/✗	✗/✗
Dimensions (LxWxH) (mm)	109 x 59 x 19 mm	109 x 59 x 17 mm	127 x 81 x 25 mm	132 x 57 x 20 mm	109 x 58 x 22.6 mm	114 x 66 x 14 mm
Weight	145 gm	168 gm	285 gm	210 gm	175 gm	134 gm
Memory						
Phone Memory (MB)	256 MB (shared)	128 MB (shared)	64 MB (shared)	128 MB (shared)	128 shared	64 shared
Expandable Memory / Type	✓/MiniSD	✓/microSD	✓/MMC, SDIO	✓/micro SD	✓/MiniSD	✓/MicroSD
Hot Swappable (✓/✗)	✓	✓	✓	✓	✓	✓
Other Features						
Charging via USB (✓/✗)	✓	✓	✓	✗	✓	✓
Keypad (Regular/QWERTY)	✗/✓	✗/✓	✗/✓	✓/✓	✗/✓	✗/✓
Talk / Standby Time *	5 / 200 hrs	5 / 220 hrs	8 / 260 hrs	5 / 330 hrs	5 / 220 hrs	5 / 530 hrs
Offline Operability (✓/✗)	✓	✓	✓	✓	✓	✓
Operating System	Windows Mobile 5	Windows Mobile 5	Windows Mobile 5	Symbian 9.2 (S60)	Windows Mobile 5	Proprietary
Communication Options						
Internet (GPRS/HSCSD/EDGE/3G)	✓/✗/✗/✗	✓/✓/✓/✗	✓/✗/✗/✓	✓/✓/✓/✓	✓/✗/✗/✓	✓/✗/✓/✗
Connectivity (WiFi/Bluetooth/IR/USB)	✓/✓/✗/✓	✓/✓/✗/✓	✓/✓/✓/✓	✓/✓/✓/✓	✓/✓/✓/✓	✗/✓/✗/✓
Bluetooth Version/A2DP support	2.0/✗	2.0/✓	1.2/✗	2.0/✗	✗/✗	2.0/✗
Accessories						
Bundled Applications	✗	✗	✗	PC Suite	✗	Blackberry user tools
Bundled Accessories	Headset, Data Cable, A/C & Car chargers, desktop stand	Charger, data cable, handsfree kit	Data cable, A/C charger, extra stylus	Headset, Data Cable, A/C adapter	Headset, Data Cable, A/C adapter	Headset, Data Cable, A/C adapter, holster
Build Quality (So10)						
Body / Keys	7.75 / 6.5	7.25 / 6.75	7 / 7.25	7.25 / 7.5	7 / 6.5	7/6
Movables Parts / Accessories	NA / 8	6.75 / 6.5	7 / 7	7.25 / 7.25	6.5 / 7.25	NA/6.25
Accessories						
Ergonomics (So10)	8	6.5	7	7.25	7.25	6.25
Interface/Navigation/Joystick	7.25 / 7.25 / 6	7 / 7.25 / 6.25	7.25 / 7/6	6.75 / 7.25 / 6.5	7.25 / 7.25 / 6.25	6.5 / 6.25 / 6.5
Keypad Layout/Comfort	6 / 6.5	6.5 / 6.75	7.5 / 7.25	7 / 7.25	6.5 / 6.75	6.25 / 6.5
Keypad Backlight	5	5.75	7.75	6.75	6	6
Camera Specs						
Camera (✓/✗)/Mega Pixels	✓ / 2.0 MP	✓/2.0 MP	✓ / 1.3 MP	✓/3.2 MP	✓/2.0 MP	✗/NA
Video Capture Resolution	176 x 144	176 x 144	176 x 144	352 x 288	176 x 144	NA
Dual Cameras	✗	✗	✓	✗	✓	NA
Camera Settings (So10)						
PDA Functionality	5.25	6.25	4.5	6.5	4.75	NA
Sync Software Interface (So10)	6.75	7.5	6.75	7.5	6.75	6.75
Productivity (Office Apps. (So10)	7.25	6.5	7.25	7	7.25	6.5
Pre-installed Applications (So10)	7.5	7	6.5	6.5	6.75	6.5
Performance						
Signal Reception Zone 1/2 (So10)	5.5 / 6.25	5 / 6	4 / 5	5.75 / 6.5	5 / 6	7.25 / 7.25
Voice Clarity Zone 1/2 (So10)	6 / 6	4 / 5	3.5 / 5.25	5.5 / 6	5 / 5.75	7.5 / 7.5
Handsfree Clarity (So10)	6	6	5.25	6.5	6	7
Photo Quality Colour/Crispness (So10)	5.5 / 5.5	5.75 / 5.25	4.25 / 4	6.5 / 6.5	5 / 4.75	NA / NA
Playlist Features/Audio Quality (So10)	6.25 / 6.25	6 / 6.25	6.25 / 6.5	4.75 / 5.5	6.25 / 5.75	2.5 / 5.5
Video Playback Quality (So10)	6	6	6	6.25	6	6
Processing Speed (So10)	6	6.25	6.25	6.25	5.75	6
WiFi Transfer Speed (Mbps)	1.54	1.54	1.6	2.1	1.8	NA

WLAN, this PDA is truly for the wireless at heart.

ASUS' P535 is very responsive and has decent signal quality too. Some loss in voice clarity in zone 1, but that was acceptable.

The Jasjar didn't drop any calls, but quality was low, especially in zone 1; do not opt for this phone if cellular reception is an issue in your area, and if that is an important factor affecting your decision. That aside, music playback is very good—a 3.5 mm jack is always appreciated. Wi-Fi performance was surprisingly good considering the older 802.11b protocol in use.

Both the HTC C800 and O2's Xda Zinc performed better than the Jasjar as signal strength and quality go.

Our Conclusion

For an unbeatable mix of features, like a stellar screen (two screens actually), a great keypad (both keypads in fact), good signal quality, and unbeatable connectivity options, the **E90** is special. Add to the party loads of applications bundled, a great camera, and quality accessories... It sums up to a Digit Best Buy Gold award—Nokia's E90 is highly recommended to corporate users who need the features and don't mind the size.

It's hard to recommend the Imate Jasjar to anyone looking for a PDA phone, despite its features and performance. For one, the model is on the verge of being phased out. It does have the most easy-to-work-with screen of the bunch.

Our Best Buy Silver winner, the **ASUS P535**, is a combination of great and usable features, superb build, functionality, and a good bundle. How we long for a QWERTY keypad on this one! GPS means it's the PDA for road warriors who don't want to invest in an add-on GPS unit.

The **Blackberry 8800** makes for a sensible purchase if you're looking for one-touch connectivity to mail and popular chat services; remember that service providers have special schemes for SIM cards bundled with this phone.

MULTIMEDIA PHONES

The difference between a multimedia phone and a business phone is more about the way manufacturers position devices than anything. For example, Nokia has always had a business series of phones. They now choose the prefix "E" to denote "enterprise," we presume, to denote this category. Their multimedia series now has the prefix "N" (Njoy? Ntertainment? You choose.) Similarly, Sony Ericsson has a "P" series for business class phones, and a "K" series for camera phones. Their Walkman series of phones have model numbers prefixed with "W".

The one thing to remember is that 99 per

cent of all phones are built to a price. While thinking *business phone*, a manufacturer would think office productivity, long e-mails (read QWERTY), and Wireless LAN, among others. Similarly, multimedia phones are used for entertainment, and the tools for entertainment are good PMP features and quality, funky looks, a good camera, and such. With looks ranging from sexy to cute to bizarre, there's literally something for everyone.

After sorting through this month's lot of phones, we selected 19 of them for a comparison shootout that spanned three categories.

Grab 'Em Hot!

(Up To Rs 12,500)

Features

The tiniest phone in this category has the soul of an MP3 player—the **BenQ-Siemens' EF51** has a flap that holds all PMP buttons (playback, next / previous track, pause, etc). Open the flap and the keypad appears. A tiny screen with blurry icons isn't really fun, though.

Samsung had a trio of phones in this category. The **SGH-E840** is by far the best looking of the lot. With an ultra-slick slider, this phone has touch-type menu buttons. The keypad is a little recessed, but feedback isn't a problem. The other two Samsung phones were the slimmest phones we received.

LG's KE820 is an unusual-looking phone. A wide phone with a large keypad that much resembles the keys on a calculator, this is nonetheless really comfortable to type SMSes on. The screen is a let-down: blurry. On to the **Motorola KRZR K1**: Motorola really has their ergonomics right, and while attending a call, the KRZR K1 feels natural in the hand, and the positioning of the speaker and mouthpiece is such that they coincide with your ear and mouth respectively. Some of us liked the keypad, some didn't (too much colour), but it's well-laid-out overall, and feedback is good.

Nothing extraordinary about the **Nokia 6300** as looks go. A slim phone, slightly long, with a solid steel back, the 6300 is built to last. A good screen, great on-screen icons (typical Nokia), only Samsung's E840 gives it a bit of a run for its money as far as the display goes.

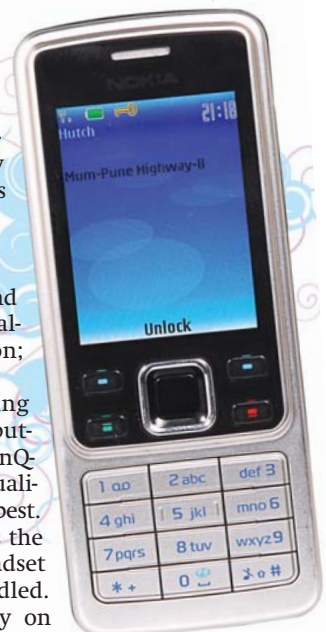
Performance

Nokia's 6300 dominated both the call and audio quality tests. In zone 1 the signal quality was pretty good, very little distortion; zone 2 had no issues whatsoever.

Despite having dedicated PMP buttons, the tiny BenQ-Siemens' audio quality is mediocre at best. The real culprit is the lower-quality headset that comes bundled. The audio quality on the Samsung phones is also mediocre; once again, poor-quality

The ASUS P535, is a combination of great and usable features, superb build, functionality, and a good package

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Nokia 6300
Sleek and functional

Decision Maker		
You Want	Your Budget	We Recommend
Something solid, functional and simple	8,000 to 13,000	Motorola KRZR K1, Nokia 6300, SGH E-840
Funky looks on a budget	8000 to 12000	Samsung SGH E-490, SGH E-840, LG KE820
Great Camera with functionality	Dependent on performance	Nokia N95, Sony Ericsson K790i, Nokia N73ME
Good MP3 player, great screen, with functionality	Up to 25,000	Nokia N73ME, Sony Ericsson K790i
PDA-like features on a budget	Up to 15,000	Nokia E62, HP iPAQ 514
Functional QWERTY/High end PDA functions	Unlimited	Nokia E90, Imate Jasjar, O2 Xda Zinc
PDA with flaunt value	NA	ASUS P535, Sony Ericsson P990i
Upwardly Mobile	What is that?	Nokia 8800 Sirocco
Cheapest way to a touchscreen	14,000	Motomring (A1200)

headphones are the culprits rather than the device itself. The only redeemer for them is the SGH-E840, which offers decent call reception and acceptable music quality.

Coming to the camera quality, let's face it—none of these devices have cameras worth anything more than a cursory shot. Samsung's SGH-X820 and SGH-E840 offer the best cameras in the sub-12.5 grand block. Since none of these phones have a lot of applications installed, they're all reasonably fast.

Our Conclusion

If you're looking for a good phone in this category, Nokia's 6300 will satisfy at Rs 11,489. Its overall dominance in our tests, and signal quality in particular aside from the solid build, make it one of the candidates for our *Digit* Best Buy Gold award.

However, this was a close affair: the Samsung SGH-E840 was neck and neck all the way, with the 6300 just sneaking ahead by a hairsbreadth. Samsung's E840 shares the precious yellow with Nokia—joint Best Buy Gold. These phones are very different, however—the Samsung should be your choice if you want a slick-looking phone with a decent camera; just 10,700 rupees.

If you want a cool-looking clamshell phone, the Motorola KRZR K1 is for you. At under Rs 10,000, and with great build quality, a flashy keypad, and a body that will get onlookers all hot and envious, this is a good phone for college-goers who want something compact and curvaceous.

Dare To Flash (Rs 12,501 To Rs 20,000)

Features

Motorola is the only brand to have featured a touchscreen phone in this price category. The **ROKR E6** uses Tux mobile (Linux), similar to

BEST BUY
digit
AUGUST 2007



Samsung SGH-E840
Slick Slider

the Motomring (the A1200). Neither phone had any sort of a number keypad, a glaring omission in our opinion. Just try typing with an on-screen keypad and a stylus and you'll understand why. The typing area on-screen is also limited to a small patch where letters are detected. Also, only characters can be detected, not entire words (Windows Mobile does that). These gripes aside, it's a brave effort from Motorola—touchscreen phones rarely cost under Rs 20,000.

Last year's winner, the **N70**, quickly gets overshadowed. The **5700 Xpress Music** is a quality offering from Nokia featuring a twist keypad similar to the one on the **Nokia 3250**. The other side of the keypad has dedicated music keys.

The best-looking phone in this comparison (this writer's personal choice!) is the **Sony Ericsson K790i**. An exquisite matte-finished rear (some soft-feeling surface coating) contrasts well with the piano black finish on the front. The bezel surrounding the screen is brushed metal, again black. A good keypad and a joystick smooth as butter makes working with this phone a delight. The ultra-crisp screen and high-resolution icons are other attractions. While on topic, how does a 3.2 MP camera with an ultra-bright Xenon flash sound?

The **SE W880i** is the slimmest phone in this category. Surprisingly usable, though—the buttons are tiny and good for similar fingers. The joypad looks painful at first but works well. The **W610i** has an even smaller keypad that is uncomfortable if you're using your fingertips: the trick is to use your nails. The circular menu buttons don't offer feedback and you need to press at a particular place to get the desired key hit, else it might not register. The older W810i is still around—decent keypad, and a crisp-looking, small screen.

Nokia Sirocco 8800 Gold Edition: Of Luxuries And Sinful Indulgences!

So you've got the cash to burn, but being the self-made millionaire that you are, spending upward of 5 lakhs on a Vertu seems criminal. Enter the 8800 Sirocco and Nokia's upmarket offering, for those who delineate the term *upwardly mobile*. A beautiful box, well designed accessories, and a phone whose body is glossy steel that will shimmer when exposed to light will greet you. You immediately get a feeling of cash well-spent (though we can't afford to test this parameter!). Remember to have your valet carry around chamois leather with him—the surface of this phone is a smudge magnet.

The display is scratch-resistant sapphire glass. You won't think much of the display itself once you see the N95 (256K colours and 208 x 208 pixels doesn't seem much in comparison), but who gives a hoot about the screen when you probably have PAs to do all your dirty work, right? That said, the display is crisp in its own right, owing to its smaller size. Two batteries are provided, and so is a neat-looking charging dock that can charge your phone and the spare battery simultaneously.

The 8800 has an unbeatable slider (quality- and ergonomics-wise) that we initially had no clue how to operate. Pushing

downward on the keypad recess to reveal the keypad does nothing and we thought, "Oi, what's up here!" Instead, you have to push upward on the silver-coloured protrusion. Voila! The display and keypad slide out together. Engaging is a very decisive metal click. We must have done this at least 200 times on the phone—absolutely no give in the mechanism, superb!

The 8800 Sirocco has 128 MB of memory onboard with no expansion. Music quality is good; however, with a paltry amount of storage, you're never going to ditch your PMP. The camera is strictly decent—more for show than anything. Incidentally, the lack of a POP port (ugly things those!) means you will be solely reliant on Bluetooth for data syncing. Best leave that task to your PA.

The 8800 Sirocco, true to its pedigree, is all about class and less about functionality. It's a full fledged phone and gives you the added functionality of a camera and a music player. This is not where the charm lies in though—simply carrying around a Sirocco is bound to get you a lot of attention! Think of more as a fashion accessory and an essential part of your designer wardrobe! At rupees 65,000 it'll bring out the latent class in that Armani (while ensuring your PA stays busy!).



Performance

Camera...? One word—K790i. This is perhaps the best 3.2 megapixel camera out there (neck and neck with the N73's camera). Brilliant image quality, and colours are reasonably neutral, with only a slight hint of red. All this at default settings; we could have seen better results with a little tweaking, but we reminded ourselves that this wasn't a digital camera test. The other cameras are mostly mediocre, with the Sony Ericssons sporting the best image capture hardware. The only possible gripe against the K790i is the painful SIM removal. To be sure, not many users would keep swapping SIMs, so this shouldn't sway you.

The Nokia N70 performed surprisingly badly in the signal quality tests—we even got a couple of disconnected calls. Voice quality wasn't bad, but the call getting disconnected wasn't fun. This happened in zone 1; zone 2 was a little reassuring, but still by far the worst of the phones. Hands-free quality was, strangely, the best in the test.

Coming to PMP capabilities, we were surprised to see the "best sounding as an MP3 player" award going to a non-Walkman phone. In fact, the K790i pushed away from all its Walkman siblings to grab the accolades here. It's just limited by the mediocre headphones.

Nokia's 5700 did well in the music test, aided by good headphones of the supra-aural type. We also liked the concept of the wireless earphones on the ROKR E6. While these sound good, they are a little uncomfortable. People with smaller ear canals, watch out!

Our Conclusion

Sony Ericsson's K790i is simply unbeatable—an excellent camera, great music quality, an excellent screen to add to a good keypad, and excellent joystick. A no-brainer—the *Digit* Best Buy Gold to this excellent all-rounder. Highly recommended if you have a budget of rupees 16,000.

The *Digit* Best Silver award has been bagged by **Nokia's 5700 Xpress Music**, we declare. Good music quality, a good screen, and nifty MP3 buttons! Do pad up your thumb before touching the joypad though!

If you want something slim yet very inconspicuous looking, consider SE's W880i. Just remember, you'll pay a hefty premium for the features. If you're OK with something just a little less slim, go with the SE W610i—it's a little flashy (lots of orange). Both these phones performed well overall. Remember, these should only be your choice if you absolutely do not like

the looks of the K790i. However, this would be a rare event indeed, and most users will just blindly buy the K790i—superlative choice really...

Nokia's 5700 is not an option—not with the K790i around in a similar price range.

The Motorola ROKR E6 is another phone that grabs attention. A touchscreen and a Bluetooth headset (which costs Rs 3,000 extra), this is something for those who like to flash their handsets around.

Super, Smart, Sexy

(Above Rs 20,000)

Features

The **LG KG-920** stands out here—very gimmicky-looking, with an array of buttons sticking out from nearly every angle. A lot of buttons usually spells ergonomics with a capital E. The camera button is beautiful—soft click (less chances of shaking) with great feedback; not so the other buttons. The joypad is hard on the fingers owing to sharp ridges. The tiny keypad is a pain for all except the tiniest fingers. The sharp screen is a plus.

The **Sony Ericsson W950i** is basically an M600 in a different garb—the Walkman series colour tones are evident, and the QWERTY is absent. The diaphragm type keys work well, but longevity is an issue with such keypads—you can't replace the keys. A brilliant screen dominates the W950i. The stylus gets slippery in its sheath after a few weeks, though.

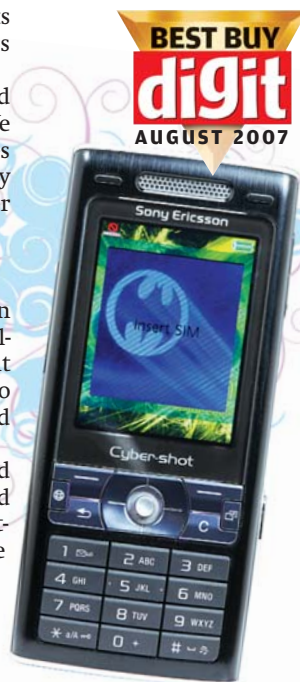
The **Nokia N73 Music Edition** is a weirdly long phone. Wonder why so much of space was wasted below the gorgeous screen! A larger keypad would have been appreciated. Feedback is good, though, but the joypad is once again a pain. No such ergonomic issues on the other Nokias, though. The **N80** feels a little chunky and boasts of a surprisingly high resolution screen (352 x 416) pixels. We'd like to have seen a larger screen though—just not enough real-estate to take advantage of all those pixels! The N73ME is all black, and comes with a 2 GB memory card. Nokia's POP to 3.5 mm converter is bundled too—this accessory costs Rs 1,000 all by itself.

The **N95** is superb in every way except one: its slider isn't tactile, and feels tacky. Whether this is intentional or not we don't know, but extra friction should affect life, in our opinion. The display's absolutely superb, and with 2.6 inches displaying 16 million colours, everything looks clear, crisp, and rich... The phone also has GPS inbuilt; although Nokia's maps are currently rudimentary, this can only get better.

Performance

We spent a lot of time with the N73ME, having used the N73 before this. The inbuilt speakers are powerful—more so than those on the N95. Music quality is very good, with higher volumes than those on the SE K790i. Clarity is good, but the midtones sound a little recessed. A good set of earplugs will get the most out of this phone.


The N95 has a superlative camera, a little better than that on the LG KG920, which










Sony Ericsson K790i
Awesome camera, great music...

Contact Sheet		
Cellphone Test		
Brand	Company	Web Site
ASUS	ASUS Technology Pvt. Ltd.	www.in.asus.com
BenQ-Siemens	BenQ India Pvt. Ltd.	benq.co.in
HP	Hewlett Packard India Pvt. Ltd.	www.hp.com
HTC	Dopod Communication (India) Pvt. Ltd.	www.dopodasia.com
Imate	Fourth Generation Mobiles Pvt. Ltd.	NA
LG	LG Electronics India (Pvt.) Ltd.	www.lgindia.com
Motorola	Motorola India	www.motorola.com
Nokia	Nokia India	www.nokia.com
O2	O2	www.seeO2.com
RIM (Blackberry)	Available with select Hutch and Airtel outlet	www.blackberry.com
Samsung	Samsung Telecommunications India	in.samsungmobile.com
Sony Ericsson	Sony Ericsson Mobile Communications (India) Pvt Ltd	www.sonyericsson.com

Scoreboard **Multimedia Phones—Rs 12,501 to Rs 20,000**

BRAND MODEL	Motorola ROKR E6	Nokia N70	Nokia 5700	Sony Ericsson W880i	Sony Ericsson K790i
					
*for category Multimedia Phones above 20,000					
Price (Rs)	Rs 14,985	Rs 16,699	Rs 14,799	Rs 19,529	Rs 16,222
Comments	+ Gimmicky - Ergonomics	+ Good looks - Screen, cramped keypad	+ Looks, music quality - Very hard joypad	+ Very slim - Poor call quality	+ Great all round - Camera slider flimsy
Final Score (Out of 100)	57.74	58.23	63.83	60.64	65.08
Features (Out of 52/53*)	30.71	31.46	32.76	34.28	35.22
Performance (Out of 38/39*)	19.22	19.76	23.16	20.37	22.65
Price Index (Out of 10/8*)	7.81	7.01	7.91	5.99	7.21
Features					
Form Factor	Bar	Bar	Twist	Bar	Bar
Network Bands	Triband	Triband / UMTS	Triband / UMTS	Triband / UMTS	Triband
Screen Resolution (Pixels/inches)	240 x 320 / 2.4"	176 x 208 / 2.25"	240 x 320 / 2.2"	240 x 320 / 1.8"	240 x 320 / 2"
No of Colours (Screen)	256K	256K	16M	256K	256K
Touchscreen/Dual-screen (✓/✗)	✓/✗	✗/✗	✗/✗	✗/✗	✗/✗
Dimensions (LxWxH) (mm)	111 x 51.5 x 14.5 mm	108.8 x 53 x 21.8 mm	108 x 50 x 17 mm	103 x 46.5 x 9.5 mm	105 x 47 x 22 mm
Weight (grams)	121 gm	126 gm	115 gm	71 gm	115 gm
Memory					
Phone Memory	8 MB	22 MB (shared)	35 MB	16 MB	64 MB
Expandable Memory/Type	✓/SD	✓/RSMMC	✓/microSD	✓/M2	✓/M2
Other Features					
Keypad (Regular/QWERTY)	None	Regular	Regular	Regular	Regular
Address Book Capacity	Unlimited	Unlimited	Unlimited	1000	1000
Voice Recorder/Dialling	✓/✓	✓/✓	✓/✓	✓/✓	✓/✓
Talk Time/Standby Time *	7 / 235 hrs	3.3 / 265 hrs	3.3/290 hrs	6.3 / 425 hrs	7 / 350 hrs
OS	Linux	Symbian 8.1a (S60)	Symbian OS v9.2(S60)	Proprietary	Proprietary
Connectivity					
Browsing (GPRS/HSCSD/EDGE/3G)	GPRS, EDGE	GPRS, EDGE, 3G	GPRS, HSCSD, EDGE, 3G	GPRS, HSCSD, 3G	GPRS, HSCSD, EDGE
Connectivity (WiFi/Bluetooth/IR/USB)	Bluetooth, USB	Bluetooth, USB	Bluetooth, IR, USB	Bluetooth, USB	Bluetooth, IR, USB
Bluetooth Version/A2DP support	2/✓	2/✗	2/✓	2/✓	2/✓
Accessories					
Bundled Accessories	headset, charger, data cable	Charger, data cable, handsfree	Charger, data cable, handsfree	Charger, data cable, handsfree	Charger, data cable, handsfree
Memory card provided (size)	512 MB	128 MB	512 MB	1 GB	512 MB
Build Quality (So 10)					
Body/Keys	6.5 / 6.5	6.5 / 7	6.5 / 6.5	7 / 6.75	7.25 / 6.5
Flaps, Slider/Other Movable Parts	NA / 6.25	5.75 / 7	6.75 / 6.75	NA / 6.5	6 / 6.5
Ergonomics (So 10)					
User Interface/Navagation/Joystick	6 / 6.25 / 6.25	6.5 / 6.75 / 5.5	6.5 / 6.75 / 3	5.75 / 6 / 5.5	6.25 / 6 / 6.5
Keypad Layout/Comfort/Backlight	6 / 6 / 6.5	6 / 6 / 6	6.25 / 6.5 / 6.75	6 / 4 / 5.75	6.75 / 6.5 / 6.5
Shortcut Key/Additional Key ergonomics	5	5.75	5.75	6.25	6
Playlist Features (So 10)	5.5	6	6.75	6.25	5.5
FM Radio (✓/✗)	✓	✓	✓	✓	✓
Camera Specs					
Camera (Y/N)/Megapixels	✓/2 MP	✓/2 MP	✓/2 MP	✓/2 MP	✓/3.15 MP
Video Capture Resolution (pixels)	176 x 144	176 x 144	352 x 288	176 x 144	176 x 144
Lens Protection/Rear Mirror/flash (✓/✗)	✗/✓/✗	✓/✗/✓	✗/✗/✓	✗/✗/✓	✓/✓/✓ (Xenon)
Camera Settings (So 10)	4.25	5	6.25	5	7
Auto Focus/Zoom(Optical/Digital) (✓/✗)	✗/✗/✓	✗/✗/✓	✗/✗/✓	✓/✗/✓	✓/✗/✓
Performance					
Signal Reception (So 10)					
Zone 1/Zone 2	4 / 5	4.75 / 5.5	6 / 6.5	5.25 / 5.75	5 / 6
Voice Clarity (So 10)					
Zone 1/Zone 2	4.5 / 5.75	4 / 5	5.5 / 6.25	3 / 5.5	3.5 / 6
Handsfree Clarity	5.25	6.25	6.5	5.75	6.25
Multimedia Performance					
Audio / Earphone Quality(So 10)	6 / 5.75	6 / 6	6.5 / 6.5	6.25 / 6	7.5 / 6
Video Playback Quality (So 10)	5	4.75	6.25	5.5	6.25
Captured Image Quality (So 10)					
Colour/Crispness	5.25 / 4.5	5 / 4.5	5.75 / 5.75	5.5 / 5.75	7.25 / 7.5
Video Quality	3.75	4.75	6	5	6.25
Processing Speed (So 10)	6	6	5	6.25	6.5

Sony Ericsson W610i	Sony Ericsson W810i	LG KG920	Nokia N95	Nokia N73ME	Nokia N80	Sony Ericsson W950i
						
Rs 15,151	Rs 13,000	Rs 22,000	Rs 40,249	Rs 24,349	Rs 23,019	Rs 24,995
+ Great build - Tiny keys	+ Compact - Small screen	+ Great camera - Bad ergonomics	+ Great camera, usability - Slider quality not the best	+ Good camera, sound quality - Wierdly oblong	+ High res screen - Small screen size	+ Great display, features - No camera, low volume
61.49	60.94	55.71	68.52	70.01	65.72	52.90
33.82	30.93	26.33	38.84	38.36	34.39	31.28
19.95	21.01	22.17	25.75	25.15	24.45	15.29
7.72	9.00	7.20	3.94	6.51	6.88	6.34
Bar	Bar	Twist	Slider	Bar	Slider	Bar
Triband	Triband	Triband	Triband / HSDPA	Triband / UMTS	Triband / UMTS	Triband/UMTS
176 x 220 / 1.96"	176 x 220 / 1.8"	240 x 320 / 2"	240 x 320 / 2.6"	240 x 320 / 2.4"	352 x 416 / 2.2"	240 x 320 / 2.6"
256K	256K	256K	16M	256K	256k	256K
x/x	x/x	x/x	x/x	x/x	x/x	✓/x
102 x 46 x 14 mm	100 x 46 x 19.5 mm	108 x 50 x 18 mm	99 x 53 x 21 mm	110 x 49 x 19 mm	95 x 50 x 26 mm	106 x 54 x 15 mm
95 gm	99 gm	138 gm	120 gm	116 gm	134 gm	112 gm
64 MB	20 MB (shared)	8 MB	160 MB (shared)	42 MB	40 MB	4 GB
✓/M2	✓/MS Pro Duo	✓/miniSD	✓/microSD	✓/miniSD	✓/miniSD	x
Regular	Regular	Regular	Regular	Regular	Regular	Regular
1000	1000	1000	Unlimited	Unlimited	Unlimited	Unlimited
✓/✓	✓/✓	x/x	✓/✓	✓/✓	✓/✓	✓/✓
7 / 350 hrs	8 / 350 hrs	3 / 180 hrs	6.3 / 220 hrs	3.7 / 350 hrs	3 / 192 hrs	7.3 / 340 hrs
Proprietary	Proprietary	Proprietary	Symbian 9.2 (S60)	Symbian 9.1 (S60)	Symbian 9.1(S60)	Symbian 9.1 (UIQ 3)
GPRS, HSCSD, EDGE	GPRS, HSCSD, EDGE	GPRS	GPRS, HSCSD, EDGE, 3G	GPRS, HSCSD, EDGE, 3G	GPRS, EDGE, 3G	GPRS, EDGE, 3G
Bluetooth, IR, USB	Bluetooth, IR, USB	Bluetooth, USB	Wi-Fi, Bluetooth, IR, USB	Bluetooth, IR, USB	Wi-Fi,Bluetooth, IR, USB	Bluetooth, IR, USB
2/✓	2/x	1.2/x	2/✓	2/x	1.2/x	2/✓
Charger, data cable, handsfree	Charger, data cable, handsfree	Charger, data cable, handsfree	Charger, data cable, handsfree	Charger, data cable, handsfree	Charger, data cable, handsfree	Charger, data cable, handsfree
512 MB	64 MB	256 MB	128 MB	2 GB	128 MB	NA
6.5 / 6.5	6.5 / 6.5	6.75 / 6.25	6.75 / 6.75	6.75 / 6.75	6.75 / 7	6.5/6
NA / 6.5	NA / 6.25	6.5 / 6.75	6.5 / 7	NA / 7.25	6.25 / 7	NA / 5.75
5.75 / 6 / 6	6.25 / 6.5 / 6.25	6.5 / 6.25 / 4	6.75 / 6.75 / 7	6.75 / 6.75 / 5.75	6.5 / 6.75 / 6.75	6 / 6 / 5.75
6.5 / 6 / 7	6.75 / 6.5 / 6.25	5 / 5 / 6.75	6.75 / 7.25 / 7.5	6 / 6 / 7	6.75 / 6.75 / 6.5	6.25 / 5.75 / 6.25
6	6	6.25	7	6.5	6.5	6.5
6.25	6.75	6.5	7	7	6.5	6.75
✓	✓	x	✓	✓	✓	✓
✓/2 MP	✓/2 MP	✓/5 MP	✓/5 MP	✓/3.15 MP	✓/3 MP	x/NA
176 x 144	176 x 144	352 x 288	352 x 288	176 x 144	176 x 144	NA
x/✓/✓	x/✓/✓	✓/✓/✓ (Strobe)	✓/✓/✓	✓/✓/✓	✓/✓/✓	NA / NA / NA
5	6.25	7	7	6.75	6.25	NA
✓/x/✓	✓/x/✓	✓/x/✓	✓/x/✓	✓/x/✓	x/x/✓	NA / NA / NA
4.75 / 5.5	5 / 5.75	5 / 5.5	6.25 / 6.5	6 / 6.5	6 / 6.5	5 / 6
3 / 5.5	4 / 5.5	5 / 6	6.25 / 6.75	6/6.5	6 / 6.5	0 / 5
6	6	6.25	7	7	7	5.75
6 / 6	6.5 / 6	5.5 / 4.75	6.5/6.25	7 / 6.25	6 / 6	6.5 / 5.75
5.5	5.75	6.25	7	6.5	6.25	5.5
5.5 / 5.75	5.5 / 5.75	6.75 / 6.5	7.5 / 7	6.5 / 6.75	6.25 / 6.25	NA / NA
4.5	5	6	6.25	6	6	NA
6.25	6.5	6.25	6.5	6.5	6.5	3



Scoreboard

Multimedia Phones Up to Rs 12,500

BRAND MODEL	BenQ-Siemens EF51	LG KE820	Motorola KRZR K1	Nokia 6300	Samsung SGH-E490
					
Price (Rs)	Rs 7,810	Rs 11,990	Rs 9,520	Rs 11,489	Rs 7,749
Comments	+ Very compact - Tiny screen	+ Build, form factor - Display quality	+ Ergonomic - Music quality	+ Great screen, build - Hard joystick	+ Slim - Screen
Final Score (Out of 100)	56.47	54.74	57.00	60.46	56.31
Features (Out of 48)	25.14	25.82	28.11	29.84	23.79
Performance (Out of 38)	18.83	20.78	18.64	22.12	19.92
Price Index (Out of 14)	12.50	8.14	10.26	8.50	12.60
Physical Specs					
Form Factor	Bar with flip pad	Bar	Flip	Bar	Clamshell
Network Bands	Triband	Triband	Triband	Triband	Triband
Screen Resolution (Pixels/inches)	120 x 128/1.6"	220 x 176/2.2"	176 x 220/96 x 80/2"	240 x 320/2"	176 x 220 / 2.2"
No of Colours (Screen)	256K	256K	256K (Both)	16M	65K
Touchscreen/Dual-screen (✓/N)	✗/✗	✗/✗	✗/✓	✗/✗	✗/✗
Dimensions (LxWxH) (mm)	89 x 49 x 18 mm	95 x 52 x 9.9 mm	103 x 42 x 16 mm	106.4 x 43.6 x 11.7 mm	94 x 49 x 15.5 mm
Weight (grams)	95 gm	73 gm	102 gm	91 gm	83 gm
Memory					
Phone Memory	20 MB	16 MB	20 MB	7.8 MB	22 MB (shared)
Expandable Memory/Type	✓/miniSD	✓/microSD	✓/microSD	✓/microSD	✓/microSD
Other Features					
Keypad (Regular/QWERTY)	Regular	Regular	Regular	Regular	Regular
Address Book Capacity	500	1000	1000	1000	1000
Voice Recorder/Dialling	✓/✓	✗/✗	✓/✓	✓/✓	✓/✓
Talk Time/Standby Time *	4/200 hrs	2.2/250 hrs	6/300 hrs	3.3/348 hrs	6.5/310 hrs
OS	Proprietary	Proprietary	Proprietary	Symbian (S40)	Proprietary
Connectivity					
Browsing (GPRS/HSCSD/EDGE/3G)	GPRS	GPRS	GPRS, EDGE	GPRS, HSCSD, EDGE	GPRS, EDGE
Connectivity (WiFi/Bluetooth/IR/USB)	Bluetooth, USB	Bluetooth, USB	Bluetooth, USB	Bluetooth, USB	Bluetooth, USB
Bluetooth Version/A2DP support	1.2/N	1.2/✗	2/✓	2/✗	1.2/✗
Accessories					
Bundled Accessories	Charger, data cable, handsfree	Charger, data cable, handsfree	Charger, data cable, handsfree	Charger, data cable, handsfree	Charger, data cable, handsfree
Memory card provided (size)	128 MB	256 MB	1 GB	512 MB	NA
Build Quality (So 10)					
Body/Keys	7.75/7	6.75/7.5	7/6.75	7.5/7.25	6.5/7
Flaps, Slider/Other Movable Parts	7/6.5	NA/6	6.75/6.25	NA/7.25	6.25/5.5
Ergonomics (So 10)					
User Interface/Navigation/Joystick	5/5.5/6.25	6.25/6.25/4.5	6/6/6.75	6.5/7/6.5	5/5.25/6.5
Keypad Layout/Comfort/Backlight	6/6/6.25	7.75/7.75/6.25	6.5/6.75/7	7.25/6.5/7.25	7/6.75/7.25
Shortcut Key/Additional Key ergonomics	6.5	4.5	6	5	4.25
Playlist Features (So 10)	6	6	5.5	5.25	4.5
FM Radio (Y/N)	✓	✓	✓	✓	✗
Camera Specs					
Camera (Y/N)/Megapixels	✓/1.3 MP	✓/2 MP	✓/2 MP	✓/2 MP	✓/1.3 MP
Video Capture Resolution (pixels)	176 x 144	176 x 144	176 x 144	352 x 288	176 x 144
Lens Protection/Rear Mirror/flash (✓/✗)	✗/✓/✗	✗/✓/✓	✗/✗/✗	✗/✗/✗	✗/✗/✗
Camera Settings (So 10)	3.5	5.5	3.75	5	6.25
Auto Focus/Zoom(Optical/Digital) (✓/✗)	✗/✗/✓	✗/✗/✓	✗/✗/✓	✗/✗/✓	✗/✗/✓
Performance					
Signal Reception (So 10)					
Zone 1/Zone 2	4.5/6	5.25/6	5/5.5	5.5/6.5	4.75/6
Voice Clarity (So 10)					
Zone 1/Zone 2	4/5.5	5/6.25	4/5.5	6/6.25	5.25/6.25
Handsfree Clarity	6	6.25	5	6.25	6
Multimedia Performance					
Audio /Earphone Quality(So 10)	5/5	5.5/5	5/4.75	6.25 / 5	5/4.5
Video Playback Quality (So 10)	4.5	5	4.75	6	5
Captured Image Quality (So 10)					
Colour/Crispness	4.5/4.5	5/4.75	5/4	4.5/4.75	4.5/4.5
Video Quality	3	4.5	3.75	4.75	3.5
Processing Speed (So 10)	6.5	6.5	6.5	6.5	6.75

**Samsung
SGH-X820**



**Samsung
SGH-E840**



Rs 10,999

+ Slim
- Build quality

53.17

24.47

19.83

8.88

Rs 10,700

+ Great build, slider
- Keypad tactility

60.34

29.77

21.44

9.12

Bar	Slider
Triband	Triband
220 x 176/2.2"	240 x 320/2.2"
256K	256K
x/x	x/x
113 x 50 x 6.9 mm	101.5 x 52.5 x 10.6 mm
66 gm	83 gm
80 MB (shared)	70 MB
NA	✓/microSD
Regular	Regular
1000	1000
✓/✓	✓/✓
2.3/210 hrs	3.3/250 hrs
Proprietary	Proprietary
GPRS, EDGE	GPRS, EDGE
Bluetooth, USB	Bluetooth, USB
1.2/x	2/✓
Charger, data cable, handsfree	Charger, data cable, handsfree
NA	128 MB
6.75/6.5	6.75/6.5
NA/6	7.25/6.5
5/5.25/6	6/6/6
7/6.5/7	7/6.75/7
4	4
4.5	5
x	✓
✓/2 MP	✓/2 MP
176 x 144	176 x 144
x/x/x	✓/✓/✓
6.25	5.5
x/x/✓	x/x/✓
5/5.5	5.25/6.25
4.75/6	5.5/6.25
6	6.25
5/4.5	5/5.5
5	5.5
5/5	5.25/5.5
4	4.5
6.75	6.75

nonetheless has the second-best camera in this entire test. Excellent colour rendition, great clarity and crispness, with good detail mean both these phones can easily replace a mediocre digital camera. The N73ME also has a brilliant camera, and places a joint third (with the K790i, not part of this category).

The N80's camera isn't as good as those on the other two Nokias—no auto-focus is a big no-no for anyone even remotely interested in cell phone photography. The slider on the N80 is more tactile than the one on the N95. Once again, longevity cannot be commented on, considering our limited duration hands on with these phones.

Sony Ericsson's W950i offers good quality music. The only problem is the poor maximum volume levels. The N73 / N95 duo wins hand down here. The LG KG920 isn't quite in the same league as the other phones when it comes to PMP capabilities.

Our Conclusion

The **Nokia N95** is a very expensive device but also the most powerful multimedia phone in the market right now. An excellent camera, great keypad, great music, excellent screen, 160 MB of onboard memory, and a fast processor that runs the inbuilt GPS application flawlessly. Our *Digit* Best Buy Silver award belongs here—a topping on an already delicious treat.

Our Best Buy Gold—the **N73 Music Edition**—is a little more down-to-earth, something you (and with luck, we) can afford. This phone has a great camera, superb music performance, and a crisp, large screen.

If you want a touchscreen phone, look at **SE's W950i**—though we can't really recommend it because of the high price tag (Rs 24,995). The 4 GB inbuilt memory is a plus, too.

Nokia's **N80** is a classy-looking phone if you can get past the bulk. For the same price as the N73ME, you get Wi-Fi. You get a less capable camera and music player in return.

LG's KG920 has a lot of features for the price, but it loses out on ergonomics big time. Still, it's attractive-looking in a unique way!

Summing It All Up

We've noticed the sharp increase in the number of higher-end phones—Rs 16,000 and above—in the market. Convergence is a keyword with such phones. It's a pleasant surprise to see people demanding more out of their phones. Better cameras, better PMP capabilities, and all-round usability: people have turned demanding, and more importantly, discerning. Earlier all a vendor did was say glibly, "This phone has FM"—done deal, sold. Now customers want to know whether the phone supports Wi-Fi, and whether the Bluetooth supports A2DP. They know their MMCs from their miniSDs! This is a trend we're thrilled to see emerge—may it continue! This trend has also caused prices to fall drastically. Although MRP prices take a while to fall, it's the all-determining street prices that keep plummeting.

By December 2006, India was ranked among the top five cellular markets globally, behind giants like China and the US. By 2008, cell phone penetration is expected to cross the magical 50 per cent mark worldwide. India is expected to contribute upwards of \$25 billion (Rs 1,00,000 crore) as annual revenue by 2011 (current revenues are around a third of that figure). The contributing factor to this growth is, naturally, demand. Demand itself is a function of the binaries of population and necessity on one hand, and falling service provider charges on the other. The recent entry of Vodafone in the Indian market should also be a factor as it will, in all probability, affect international call rates. With domestic rates at an all-time low, many people are actually opting for a second cell phone and entirely doing away with their fixed voice lines.

The only area we're still to see cell phones really penetrate is the data arena where broadband is still reigning supreme, and Internet browsing is largely restricted to mail checking, downloading little themes, etc. Wi-Fi is emerging as a connectivity option, but is largely restricted to airports and certain large shopping malls. Current devices support extremely high speeds, but infrastructure is lacking. Storage is another issue... solid-state drives promise to resolve that one, and we're seeing 16 GB Flash modules penetrate the computer market. More please! ☑

michael_browne@thinkdigit.com

BEST BUY
digit
AUGUST 2007



Nokia N73ME

The audiophile's delight!



Intel P35 Motherboards: ASUS P5K Deluxe / Foxconn P35A / Gigabyte GA-P35-DQ6 / MSI P35 Platinum

Bearlake 4 under the scanner

Intel's new P35 chipset (code-named Bearlake) marks the launch of yet another milestone for Desktop computing, namely DDR3 memory. Though the chipset supports DDR3, in the initial phase, motherboards will be offered with DDR2 memory to streamline the transition to DDR3. Memory speed apart, the new chipset ushers in support for the new, yet-to-be-launched Penryn processors (45nm at 1333 MHz FSB).

In this round-up, we have four motherboards: the ASUS P5K Deluxe, MSI Platinum, Gigabyte GA-P35-DQ6, and the Foxconn P35A. The former three are geared towards enthusiasts (read: bells and whistles attached).

Features

All four motherboards use the ATX form factor, and hence demand a full ATX cabinet. And all of them have taken to silent cooling. The MSI Platinum has oodles of copper pipes running around the Northbridge, with fins to

increase surface area. ASUS has its own implementation; Gigabyte goes a step forward and includes a back plate to cool the PCB. These substantial coolers will impede installation of a larger heatsink-fan combo for the processor.

The same pipes run towards the Southbridge, terminating into either a copper heatsink with fins (Gigabyte, MSI) or without them (ASUS). The Foxconn motherboard hasn't gone with silent cooling—this is their P35 for the masses.

The placement of the 24-pin ATX connector is spot-on on the ASUS and the Foxconn boards, but the dense heat pipes on the Gigabyte and the MSI hinder easy installation of the ATX connector. On all the boards, extra power is available via a four-pin Molex connector.

The memory slots on the ASUS and Foxconn don't interfere with the graphics card. Sadly, Gigabyte and MSI miss the mark by a few inches; the Corsair Dominator (as will any memory with a bulky heat spreader) comes dangerously close to the graphics card's PCB. And with the MSI and ASUS, a long

graphics card will run over the SATA ports.

Gigabyte's DQ6's Front Panel Audio gets trapped in between the back panel I/O ports and the thermal pipe solution, so Gigabyte implements a pin-raiser for easy access to it. The USB extension headers are placed at the bottom of all the boards, with ASUS and Foxconn using plastic brackets for trouble-free installation.

Gigabyte implements three PCIe x1 slots, whereas the ASUS P5K Deluxe and MSI P35 Platinum have two. The Foxconn provides just one. ASUS and Foxconn implement three PCI slots; MSI and Gigabyte, two each.

The ASUS lacks a PS2 port and alongwith P35 Platinum both of them have six USB, one FireWire, and two eSATA ports. The Foxconn P35A and Gigabyte GA-P35-DQ6 both provide four USB ports. The Foxconn also has an eSATA port.

All the boards have 8-channel audio; the ASUS P5K Deluxe and the Gigabyte GA-P35-DQ6 have multi-streamed audio, a technology that allows separate signals to be sent to the rear speaker connectors

and headphones, separating background audio streams from communications applications.

Power And The BIOS

Gigabyte has opted for a 12-phase power design—supposedly good for overclocking. ASUS offers 8-phase power, which should be good enough for driving the CPU to crazy overlocks. The Foxconn P35A and MSI P35 Platinum use a simpler, 4-phase power—no problems for stock systems, but could limit the CPU's overclocking potential.

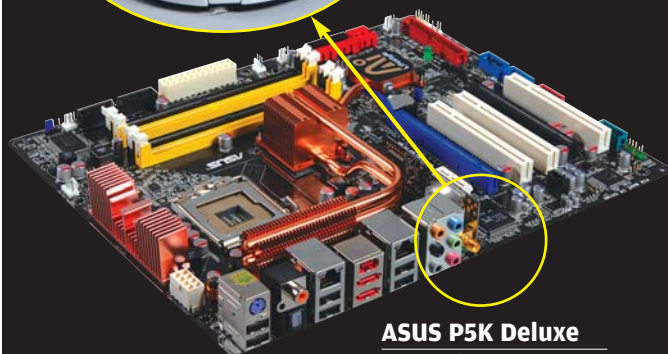
Though 1066 MHz DDR2 RAM is supported on all boards, the Foxconn and MSI required adjustment to run the Corsair Dominator at 1066 MHz.

The ASUS has a feature-rich BIOS with controls for the North / Southbridge voltage, and also for the CPU Damper, Transaction Booster, and Clock Over-Charging Mode.

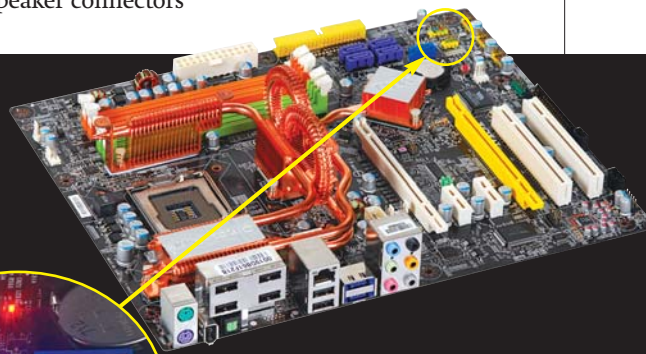
The Gigabyte C.I.A 2 has five preset overclocking profiles, whereas the ASUS provides two user-configurable overclocking profiles. All the boards come with utilities for



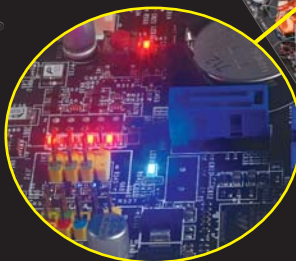
← Wi-Fi antenna with magnetic base



ASUS P5K Deluxe
Rs 14,750



MSI P35 Platinum
Rs 13,000



← 8 Diagnostic LED's: Easy Diagnosis of boot-up failures.



Corssair Dominator XMS2 2GB DDR2 Kit 1066MHz 2x1024

Testing a newly-launched motherboard is a nightmare mostly because of memory compatibility issues; this is something we faced, and you'll face them too—till new BIOSes are introduced, of course.

Luckily, Corsair's Dominator memory worked flawlessly, and we recommend these if you plan to buy any of these motherboards. These memory modules are SPD programmed for 5-5-5-18 timings at 800 MHz, and do 5-5-5-15-2T at 1066MHz 2.2V. The 2 GB Dominator kit is a matched pair of 1 GB DDR2 memory modules—best used in dual-channel configuration.



overclocking through Windows, as also a utility to update the BIOS.

The ASUS and Gigabyte provide crash-free BIOSes. The MSI P35 Platinum has eight diagnostic LEDs and a BIOS reset switch—just in case. The Foxconn P35A provides onboard power and reset switches for fine-tuning the system before fitting.

Performance

Testing the boards resulted in mixed scores with only tiny differences. In PC Mark 05, a score of 7327 by the ASUS P5K Deluxe left the MSI P35 Platinum just behind at 7326. The Gigabyte GA-P35-DQ6 scored 10818 in 3D Mark 06, while ASUS P5K Deluxe

ran a score of 10813; the 10814 by the Foxconn P35A in 3D Mark 06 fetched it second position. In the SiSoft Processor Arithmetic and Multimedia test, the P5K Deluxe took the lead, while the Foxconn P35A a close second.

We used Corsair Dominator memory at 1066 MHz for our tests—no problems here. The Right Mark Memory Analyzer put the Gigabyte GA-P35-DQ6 ahead with a latency of 28.94 and a bandwidth of 4562.43.

The Asus P5K Deluxe was neck-to-neck with the Gigabyte, but lagged behind in the latency test with a score of 31.77 against the 28.94 of the GA-P35-DQ6. The ASUS P5K Deluxe completed Wprime in 32.859 seconds, followed by

Contact Sheet

Brand	Company	Phone	E-mail
ASUS	ASUS Technology Pvt Ltd	022-67668800	www.in.asus.com
Foxconn	Jupiter Infotech	033-22121406	info@jil-jupiter.com
Gigabyte	Gigabyte Technology India Ltd	022-30616666	prashanta@gigabyte.in
MSI	Micro Star International	011-41758808/09	sanyam@msi-india.com

Gigabyte at 32.937; in Super Pi, both scored 18.797 seconds.

In the gaming benchmarks, the Asus P5K Deluxe churned out 128.8 fps in *Company of Heroes*, the Gigabyte came in just behind with 128.1. The MSI P35 Platinum and Foxconn P35A clock 127.9 and 126.5 fps respectively.

The Foxconn P35A managed a score of 59.4 MBps in the Average Read test with a Random Access time of 64 ms in HD Tach. The Asus P5K Deluxe followed closely, but we saw a burst speed of 133.7 MBps. None of the boards really had a clear lead.

The Bundle

ASUS packs in a great bundle, with Wi-Fi and dual Gigabit LAN. The Q-Connector from ASUS simplifies installation of the chassis front panel connector by providing a pluggable, labelled connector.

The Foxconn P35A includes an SLI bridge in the package. The Gigabyte provides 4 eSATA 2 extensions along with

external power Molex for faster peripheral data transfer. All the boards come with a single FireWire port and SPDIF out (Sony/Philips Digital Interconnect Format); drivers for XP and Vista come bundled.

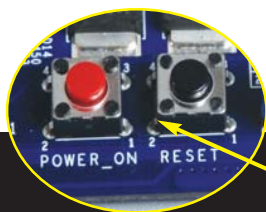
Our Conclusion

ASUS' new P5K Deluxe doesn't disappoint. Combining fabulous features, great overclocking potential, and superb performance, this new board is still reasonably priced.

The Gigabyte GA-P35-DQ6 is crafted beautifully, with superb on-paper specs, and it delivers—but at Rs 18,000, it's a little too expensive.

The MSI Platinum P35 is a good motherboard, especially by virtue of its pricing. Extensive (ab)use of copper for silent cooling and some component placement issues mar an otherwise great product.

The Foxconn P35A is an excellent product, but the over-the-head pricing is something Foxconn should consider revising.



← OnBoard Power and Reset switch: Benchtester Friendly

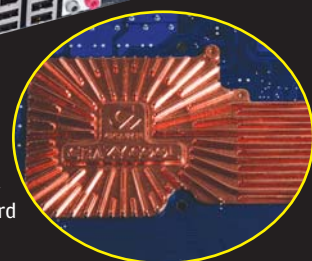


Foxconn P35A
Rs 15,000



Gigabyte P35-DQ6
Rs 18,900

Crazy Cool: enhances Heat desipation on rear side of Motherboard →



Samsung SyncMaster 932B

Black and lovin' it

With a design similar to that of the ultra-sexy Bordeaux series we reviewed earlier, the 19-inch 932B is all curves. Monitors just can't go wrong with piano black!

Build quality is excellent, and the curvy body is definitely a relief from all the monitors we've seen in recent days. The stand tries to keep up with aesthetics but could use a little more creativity in that direction.

The menu buttons are underneath the bottom bezel—good looks, but they come at the cost of usability.

The 932B uses a TN panel, with decent on-paper specifications—a 700:1 contrast ratio and a brightness of 300 cd/m². A response time of 5 ms is good enough for most applications.

Our DisplayMate tests showed good screen pixel resolution. Colour

separation was good, and the 932S did well with the primary colours. All this means the 932S is good for working with applications that use a lot of colour.

In our game tests, *F.E.A.R.* looked crisp: good contrast, and good colour and detailing. Ditto *Oblivion*. Movie playback was also good—great colours. Our only grouse is that it's not widescreen.



RATINGS

Performance	★★★★★
Features	★★★★☆
Build Quality	★★★★★
Value for Money	★★★★☆
Overall	★★★★★

Specifications

Contrast ratio: TN panel, 3000:1 (700:1 actual); lumens: 300 cd/m²; 19-inch TFT; native resolution 1280 x 1024; response time: 5 ms.

Contact: Samsung India Electronics Pvt. Ltd.
Phone: 011-41511234
E-mail: rengith.nair@samsung.com
Web site: www.samsungindia.com
Price: Rs 19,000

Billion BIPAC 7402G 802.11g ADSL2+ VPN Firewall Router

Your broadband facilitator

This is an ADSL modem, four-port router, and wireless access point all in one—just what you need to share an Internet connection on your home network. A firmware upgrade gives it ADSL2/2+ compliance as well.

It supports enhanced wireless security using WPA and WEP. The integrated firewall has NAT and SPI capabilities, and can ably handle DoS attacks. URL and domain blocking is

supported, too. Also featured is the inbuilt IPSec VPN with DES, 3DES and AES encryption.

Wi-Fi speeds are blazing fast. The device transferred a sequential file at 2.5 MB/s in the closest zone, while managing 1.19 in the

farthest zone, making it at least 50 per cent faster than its closest competitors, the Netgear DG834G and the D-Link DSL-2640T.

If you are setting up a home network, this is a must-buy.



RATINGS

Performance	★★★★★
Features	★★★★★
Ease of Use	★★★★★
Value for Money	★★★★☆
Overall	★★★★★

Specifications

ADSL compliant (ADSL2 via firmware upgrade); ports: 1 x ADSL RJ-11 for 24/26 AWG twisted-pair telephone wire; 4 x 10/100 LAN RJ-45; PS/2; Wi-Fi standard: 802.11b/g;

cables: CAT-5 UTP Ethernet, RJ-11 (telephone), PS2/RS-232

Contact: One Network (India) Pvt Ltd
Phone: 022-26056300
E-mail: sales@onenetwork.co.in
Web site: www.billion.com
Price: Rs 9,500

Canon PowerShot A460

A well-priced entry-level cam

The 5 MegaPixel Canon PowerShot A460 is out to make a point that you don't need to have an expensive digital camera to take good shots. While a bit bulky, the A460 still looks OK. You can choose from five modes for different types of photo and video shooting and previewing.

The custom timer lets you choose the timing and the number of the shots to be taken. The Slow Synchro synchronises the flash with slower shutter speeds to effectively prevent

background blackouts while using the flash.

The quality of the photos is pretty good—not too vibrant or enhanced, but some purple



fringing can be seen along bright edges.

Movie recording performance is pretty appalling with just 10 fps at 640 x 480.

One irritant is that the camera must be switched to Playback mode to transfer images. ZoomBrowser EX, a plain-looking bundled

software, enables the camera to send images to a PC at a press of a button.

You get a set of batteries but no charger. The camera is well priced at Rs 9,795. It's an easy camera and good for beginners, and will allow you to take some impressive shots as well.

Specifications

5 megapixel; 4x optical zoom; aperture: f/2.8–f/5.8; ISO levels: 80–400; shutter speed: 15–1/2000 second

Contact: Canon India Pvt Ltd
Phone: 1800-345-33-66
E-mail: info@canon.co.in
Web site: www.canon.co.in
Price: Rs 9,795

VU Boss

Dinky Desktop Power

The VU Boss is a small form factor PC that targets the growing trend of small and slim in the lifestyle segment of Desktop computing.

This PC is tiffin-box-sized. The wireless RF keyboard incorporates a tracker ball and is the sole input device. The ball is placed on the right, with the click buttons on the left—these allow for free use of the keyboard in your palms.

The 22-inch widescreen LCD panel makes the VU Boss a pleasure of a computing experience. On a sour note, accessing the power switch on the box becomes a tricky thing when it's behind the LCD. In a cold start scenario, the power switch on the keyboard just doesn't work, making one depend on the

main power switch on VU—difficult to get to if the box is hooked behind the 22-inch panel.

The LCD panel's base is sturdy, but there's no swirl—not a good thing for a big screen. The integrated 2 W stereo speakers in the LCD panel just manages to get the job done! The S-Video/DVI out ports being on the back panel of the VU PC beside the AV/TV in ports makes hooking up to a TV straightforward job: this is a viable idea for a media centre PC.



Taking the box apart reveals the Intel Mobile class Core Duo T2350 (1866 MHz) processor running on the Intel i945GM chipset. The integrated INTEL GMA 950 graphics solution manages a score of 396 in 3D Mark 05—decent for a machine of this form factor.

The PC Mark 05 score of 2985 reflects average processing power. The VU PC is pre-loaded with Windows XP Professional,

and with 512 MB of RAM, performance is good enough for word processing, surfing, and other everyday computing staples. The optical drive is a smooth-operating slide-in Matshita DVD-ROM.

Rs 65,000 for the VU Boss doesn't make too much sense in terms of value. But if you have a really cramped desk and are looking for a space-saving Desktop—besides a 22-inch widescreen—the VU Boss might prove worth it.

Specifications

Intel Core Duo T2350 mobile processor; Intel i945GM chipset; 512 MB DDR2 RAM; Matshita DVD-ROM; 80 GB HDD; 22-inch widescreen LCD panel

Contact: Vu Technologies Pvt Ltd
Phone: 26450224 / 26452727
Email: info@technologies.vu
Web site: www.technologies.vu
Price: Rs 65,000

RATINGS

Performance	★★★★
Features	★★★★
Build Quality	★★★★
Value for Money	★★★★
Overall	★★★★

Thecus N4100

Stack your data!

The Intel XScale-based N4100 NAS (Network Attached Storage) server by Thecus is an excellent answer to your data sharing, storage, and backup needs. Less than half the size of a regular PC cabinet, the N4100 is sturdily built. It has four drive caddies that can hold a 500 GB SATA hard drive each, thus touching 2 TB.

Installing drives is a cinch; thanks to the precision rail mechanism, the drive gets neatly engaged with the SATA connectors inside—no cables involved. The activity LEDs indicate drive status. Bearing no resemblance to boring file servers, it is, in fact, very presentable, and you wouldn't mind letting it adorn your desktop!

The CD guides you through the process of initialising the server, and also lets you configure the

hard drives in RAID 0, 1, JBOD, or even RAID 5 arrays if you give data security top priority. The easy-to-use browser interface also allows you to set up the N4100 as an FTP, iTunes, file, print, or a backup server, and lets you create shared folders, with user and group access rights.

If a drive fails, Hot PnP lets you remove it on the fly and replace it with a new one, and the server won't be down at all. The RAID array starts getting rebuilt as soon as the hard drive is replaced, or even when a new drive is added. Alarms sound when one of the drives fails, and an e-

mail alert is sent to the system admin.

It takes just over two minutes to transfer a 1 GB file to the N4100—good enough. The only problem here is inadequate ventilation, even with the 80 mm fan at the back.

In addition to the setup program, the accompanying CD contains a backup utility.

Unfortunately, the N4100 will set you back by a good Rs 37,500, which will put it out of reach of most SoHos. And yes, we must remind you that the N4100 does not come with any hard drives.

Specifications

CPU: Intel IOP; SATA controller: Intel (supports Hot PnP); memory: 128 MB DDR; Flash



memory: 16 MB; interfaces: 2 x Gigabit ports, 2 x USB 2.0 ports; RAID levels: 0, 1, 5, JBOD; 4 x SATA drive bays; maximum capacity: 2 TB (4 x 500 GB); dimensions: 167 x 199 x 223 mm (W x H x D); power supply: 200 W; client platforms: Windows 98/ME/NT/2000/XP, UNIX/Linux/BSD (by CIFS), Apple OS X (AFP)

Contact: Apical Impex Pvt Ltd
Phone: +919821349177
E-mail: tejas@apical.in
Web site: www.apical.in
Price: Rs 37,500

RATINGS

Performance	★★★★
Features	★★★★
Build Quality	★★★★
Value for Money	★★★★
Overall	★★★★

Corel Paint Shop Pro Photo XI

Some of this, some of that

Adobe has been well-known mostly for Photoshop. CorelDraw and later Jasc Software's Paint Shop Pro were competition back then. Jasc was taken over by Corel, and Paint Shop Pro has been developed by Corel ever since. We put Corel's latest release of Paint Shop Pro Photo—version XI—to the test to see if the "Photo" tag at the end of the name has any substance to it.

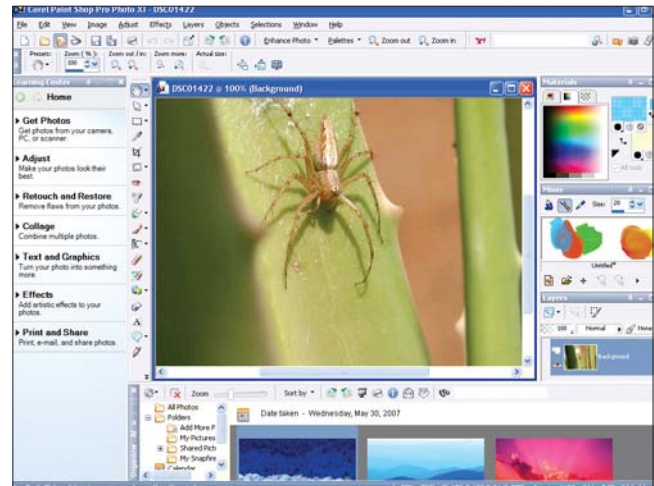
The interface is pretty cluttered with toolbars, organisers, and help panels, leaving little space to actually work on. It's a good thing you can turn them off. There are tons of features, but we didn't really find a lot specifically made for photograph manipulation. Skin smoothing, red-eye removal, and digital camera noise removal were some that would be useful for photographers. A button called "Enhance Photo"

brings in additional features that find the best parameters for a photo.

We found traces of features from other Corel products—Painter, for example. Paint Shop Pro Photo has a mixer that lets you add certain amounts of colours and mix them about till you get the right shade. Another feature is the option to choose the texture of the canvas when you create a new image.

The software isn't much of a memory hog, unlike some image editing tools where memory consumption goes well over three digits in megabytes. The software peaked out at a moderate 77 MB of RAM with four images open and some effects in place.

The Windows help documentation explains all of Paint Shop Pro Photo's features with screenshots as well as the icons you find in the interface. The learning bar explains features and



also gets tasks done in quick steps without you having to go through multiple menus and windows.

If you need a software specifically for photo

manipulation, Adobe's Lightroom is the better choice. Paint Shop Pro Photo seems more like a contemporary of Photoshop. The price is \$89.99—less than half that of Lightroom—and could be well worth it if you want something that can tweak photos and also edit images.

Web site: www.corel.com
Price : Rs \$89.99 (Rs 3,600)

RATINGS	
Performance	★★★★★
Features	★★★★★
Ease of Use	★★★★★
Value for Money	★★★★★
Overall	★★★★★

xplorer² 1.6.5.3

A cool replacement for Explorer

Here's a utility that claims it has the features to make file handling and disk exploring much simpler and less repetitive than with Windows Explorer.

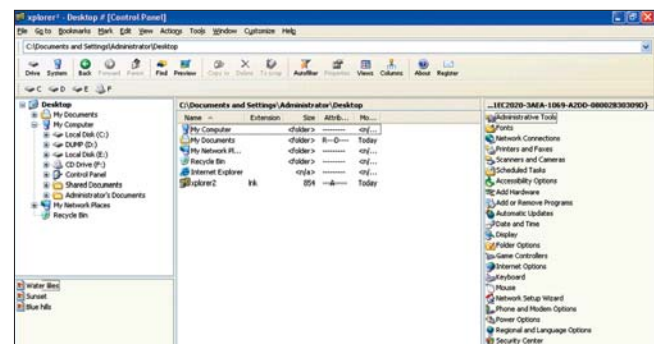
When the program is first run, you are informed about some plugins that might be required to display information on formats such as PDF and MP3.

Unlike the classic Windows Explorer view where you have two panes, xplorer² gives you three, which means more flexibility. You do have the option to revert to two panes.

The interface, like in Windows Explorer, is modular, so you can disable toolbars you don't need. xplorer² keeps track of all the locations you've been visiting, and you can easily

jump back to any of them with two clicks. Filters are implemented in the program, so you can choose to only view files of a certain format, such as Excel spreadsheets. If you find any files interesting and want to access them later, you can do so by dragging and dropping them into a temporary location called a scrap container, which creates within it links to those files.

Other features include file and folder comparison, and the option to collapse all folders so only the files



from all the subdirectories are listed together. For example, if you have separate folders full of images, xplorer² will let you view all the images as if they were in one big folder. A feature called Sticky Selection lets you click all the files you want to select without having to hold down the [Ctrl] or [Shift] keys. Quick Viewer is a panel that allows you to view the contents of a file without having to open it. Data transfer rates are displayed

during copying and moving as well.

Memory consumption is very low, at around 500 to 700 KB when minimised and around 3 MB when maximised.

We can sum up xplorer² as being Windows Explorer on steroids. It is priced at \$29.95 (Rs 1,350), which might be worth it if you're willing to make the jump considering it will take some time to get used to it.

Web site: www.zabkat.com
Price: \$29.95 (Rs 1,350)

RATINGS	
Performance	★★★★★
Features	★★★★★
Ease of Use	★★★★★
Value for Money	★★★★★
Overall	★★★★★

ZoneAlarm Security Suite

Ultra-protective

The ZoneAlarm Security Suite is a lot more than just a personal firewall. But at first look, we weren't too impressed. ZoneAlarm has lost the friendly look most people are used to. Instead, a fairly bland colour scheme with equally tasteless icons and indicators make up the interface.

The firewall and anti-virus form a comparatively smaller portion of the features. There's a spyware scanner to accompany the anti-virus engine. Other than that, the e-mail protection can be set to scan all incoming and outgoing mails. The junk mail feature is pretty advanced, we think: it features a large number of parameters.

Then there's the parental control feature: parents can now choose from a long list of categories to be blocked. A very useful feature is Game Mode, which ensures you

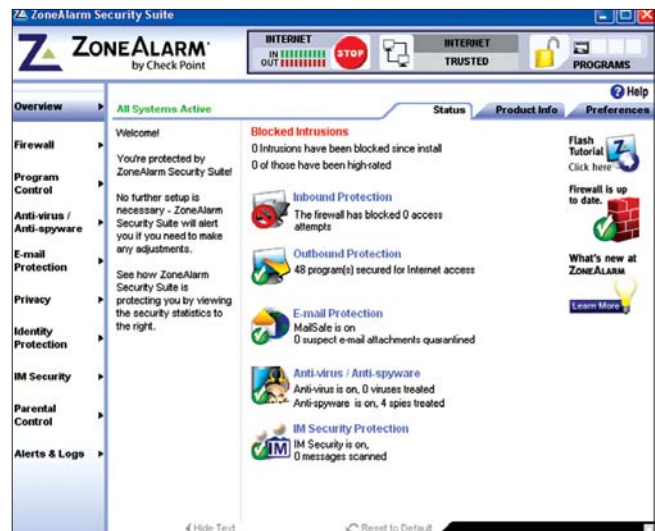
aren't interrupted in between gaming sessions by alert pop-ups. The Privacy component takes care of all ads and cookie blocking.

IM Security is another feature that ensures security isn't compromised through instant messengers—AOL, ICQ, MSN, and Yahoo!.

Conversations can be encrypted, but both users need to install the suite.

There are slider bars in each of the suite's components; these help in easily switching strictness levels. Similarly, most of the features have an Advanced view, which lets you make precise changes to the rules. In addition,

RATINGS	
Performance	★★★★☆
Features	★★★★★
Ease of Use	★★★★☆
Value for Money	★★★★☆
Overall	★★★★★



you can use the Backup and Restore Security Settings feature to save and load settings.

The suite ran well in our test, without creating any problems on our Athlon 64 3800+ with 1 GB of RAM. Memory consumption was around 45 MB most of the time, but the CPU utilisation shot all the way up to 90% while scanning for viruses.

It's pretty rare to find a

suite such as this with as many features and functionality. At \$49.95 (Rs 2,000), ZoneAlarm Security Suite is a wee bit overpriced.

It's interesting to note that ZoneAlarm's image as the friendly, casual-user's firewall has now been replaced by one of the nonsense system protector.

Web site: www.zonealarm.com
Price: \$49.95 (~Rs 2,000)

XMIND 2007

Extend your mind

Productivity tools are software that can help make work and planning easier and more efficient. XMIND is a mind-mapping software that runs on Java, and we've told you in an earlier issue how mind-mapping software can help increase productivity. We're assuming you know a little about such software. Mind mapping software can be a tiny bit confusing to start with, and XMIND is no different in this respect.

The interface, to its credit, looks pretty clean and well-laid-out. There are five templates to suit your style and the feel of your work, other than the default template.

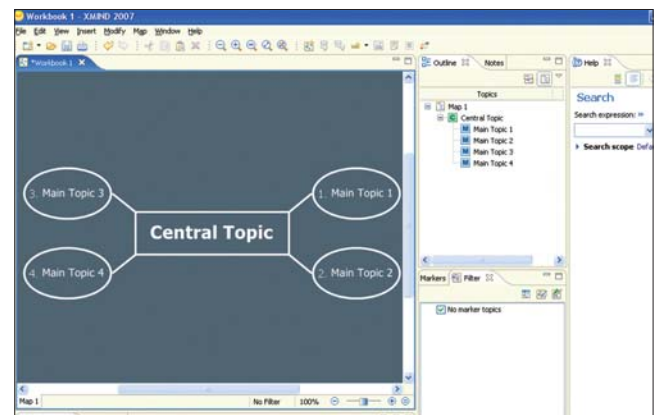
Elements such as shapes, lines, and boundaries are pretty well-

designed, and go well with the templates. You can add external templates to the current list. Using the software is pretty straightforward, and the shortcuts are easy to remember and well-placed. It appears all the shortcuts used in the program can be changed to those of your choice.

When you are done with your work, you can export it to PDF, image formats, a PowerPoint presentation, or a Word file.

The help provided is quite detailed. There are screenshots where you need them. A feature called Dynamic Help provides quick help in a sidebar whenever you click on a particular tool or feature.

Although this software runs on Java, it doesn't feel



too heavy, but uses over 120 MB of memory!

There doesn't seem to be a lot wrong with XMIND other than the price. At \$100 for a single license,

RATINGS	
Performance	★★★★★
Features	★★★★★
Ease of Use	★★★★★
Value for Money	★★★★☆
Overall	★★★★★

it's quite a bit to ask for a software like this. There are alternatives: FreeMind, for example, is a free, open source program that can do more or less what XMIND does! The only reason you would want to go buy this software is perhaps for its fairly refined look and feel.

Web site: www.xmind.org
Price: \$100 (~Rs 4,000)

External Portable Hard Drives

WD Passport Portable (Black)

- Excellent performance, good value
- None in particular

Contact Champion Computers Pvt Ltd

Phone 011-26214751
Web site www.championindia.com
Price Rs 6,500



Internal DVD-Writers

Lite-On LH-20A1P

- Fast performance, 20x writing to DVD+R and DVD-R
- None in particular

Contact Mediatech India Distribution Pvt Ltd

Phone 022-26361111
E-mail digit@mediatechindia.com
Price Rs 2,095



Digital Cameras (High-End)

Sony Cyber-shot W50

- Excellent image quality, vibrant colours
- Trouble focusing in low light

Contact Macro Photo

Phone 022-22618639
E-mail macro.photo@gmail.com
Price Rs 15,000



Graphics Cards (High-End)

NVIDIA GeForce 8800 GTX

- Blistering-fast
- Runs slightly hot

Contact Rashi Peripherals Pvt Ltd

Phone 022-67090810

E-mail navinderc@rptechindia.com
Price Rs 41,000 + taxes



Internal SATA Hard Drives

WD Caviar SE16 WD3200AAKS

- Value for money, performance
- None in particular

Contact Champion Computers Pvt Ltd

Phone 011-26214751
Web site www.championindia.com
Price Rs 4,500

Internal SATA Hard Drives

WD Caviar SE16 WD5000AAKS

- Fast transfer speeds
- None in particular

Contact Champion Computers Pvt Ltd

Phone 011-26214751
Web site www.championindia.com
Price Rs 7,500

Flash Drives

Transcend JetFlash 150 1 GB

- Fast
- Poor package bundle

Contact Mediaman Infotech Pvt Ltd

Phone 022-23828100
E-mail santosh@mediamangroup.com
Price Rs 1,500

Graphics Cards (Mid-range)

XFX 8600GTS

- Best of the mid-range cards
- Could do with more memory

Contact Rashi Peripherals

Phone 022-67090909

E-mail navinderc@rptechindia.com
Price Rs 16,000

The A-List

The best products tested so far in different hardware and software categories

Wi-Fi Access Points

Linksys WAP54G

- Great performance
- None in particular

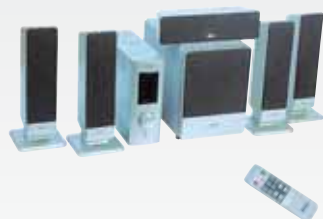
Contact Ingram Micro India Pvt Ltd
Phone 9323112279
E-mail sunil.z@ingrammicro.co.in
Price Rs 3,816

5.1 Speaker Sets

Artis S6600R/FM

- Good performance, radio
- None in particular

Contact Kunhar Peripherals Pvt Ltd
Phone 022-66345758
E-mail mail@kunhar.com
Price Rs 8,500



MP3 Players up to Rs 4,000

MobiBlu DAH-2100

- Good performer
- Tiny screen for video

Contact J.J.Mehta & Sons
Phone 022-24306356
E-mail info@jjmehta.com
Price Rs 4,000

MP3 Players up to Rs 10,000

Sandisk Sansa e250

- Good performance, feature-rich
- Tacky scroll wheel

Contact Rashi Peripherals Pvt Ltd
Phone 022-67090909
E-mail navinderc@rptechindia.com
Price Rs 8,150



Processors

Intel QX6700 Core 2 Extreme

- Extreme performance
- Expensive

Contact Intel Corporation
Phone 080-25075000
E-mail saranya.rustagi@intel.com
Price Rs 52,000

Projectors

Acer PD726W

- Great overall performance
- No remote sensor at rear

Contact Acer India Pvt Ltd
Phone 9880544226
E-mail alankar_s@acer.co.in
Price Rs 1,50,000



LCD Monitors (19-inch)

AOC 1975

- Good looks and performance
- Gloss finish catches smudges

Contact AOC India
Phone 1800-425-4318
E-mail info@in.aocmonitor.com
Price Rs 12,000



LCD Monitors (17-inch)

AOC 177V

- Good performance
- None in particular

Contact AOC India
Phone 1800 425 4318
E-mail info@in.aocmonitor.com
Price Rs 9,800

AMD AM2 Motherboards ASUS Crosshair AM2

- Great bundle and performance; accessories for the enthusiast
- None in particular

Contact ASUSTeK Computer Inc
Phone 022-40058888
E-mail media_india@asus.com
Price Rs 15,400



Intel High-end Motherboards Foxconn 975X7AB-8EKRS2H

- Inexpensive, good performer
- None in particular

Contact Mediatech India
Distribution Pvt Ltd
Phone 022-26361111
E-mail info@mediatechindia.com
Price Rs 10,750



Home Inkjet MFDs

Canon PIXMA MP160

- Good performance
- No memory card reader

Contact Canon India Pvt Ltd
Phone 1800-345-33-66
E-mail info@canon.co.in
Price Rs 5,999

Office Inkjet MFDs

HP Photosmart C4188 All-in-One

- Good print quality
- No fax

Contact HP India Sales Pvt. Ltd.
Phone 0124-2566111
E-mail kakuni.mahto@hp.com
Price Rs 7,999



PCI TV-Tuners

Leadtek Winfast PVR2000

- Excellent video quality and software
- Expensive

Contact Topnotch Infotronics (India)
Pvt Ltd
Phone 044-42042565
E-mail naqui@zebronics.net
Price Rs 5,500



AMD 939 Motherboards ASUS A8R MVP

- Good performance
- Skimpy bundle

Contact ASUSTeK Computer Inc
Phone 022-40058888
E-mail media_india@asus.com
Price Rs 8,700

Intel Mid-range Motherboards Gigabyte GA-965P-DQ6

- Good build quality and performance
- Expensive

Contact GIGABYTE Technology
India Ltd
Phone 022-26526696
E-mail sales@gigabyte.in
Price Rs 16,000

Mono Laser Printers

HP LaserJet 1020

- Good combination of speed, print quality, and warranty
- A bit slow in comparison to others

Contact Hewlett-Packard India
Sales Pvt Ltd
Phone 0124-2566111
E-mail kakuni.mahto@hp.com
Price Rs 6,999

Multimedia Phones Rs 12,501 to Rs 20,000

Sony Ericsson CyberShot K790i

- Great all round
- Cam slider flimsy

Contact Sony Ericsson Mobile
Comm. India Pvt Ltd
Web site www.sonyericsson.com
Price Rs 16,222



PDA Phones Above Rs.25K

Nokia Communicator E90

- Extremely powerful
- Heavy, bulky

Contact Nokia India
Web site: www.nokia.com
Price Rs 40,499



Mono Laser MFDs

Samsung SCX-4521F

- Good performance and quality
- Low input tray capacity

Contact Samsung India
Electronics Pvt Ltd
Phone 011-26431313
E-mail vikram.negi@samsung.com
Price Rs 21,990



Mice

Logitech MX Revolution

- Has a flywheel
- Expensive

Contact Logitech Electronic
India Pvt Ltd
Phone 022-26571160
E-mail response@logitech.com
Price Rs 8,000

Performance Laptops

HP DV6226tx

- Funky Looker, features
- Needs better graphics

Contact Hewlett-Packard India
Phone 0124-2838700
E-mail tapoti-t.tipnis@hp.com
Price Rs 56,990



Up to 12,500

Nokia 6300

- Great screen, build
- Hard joystick

Contact Nokia India
Web site www.nokia.com
Price Rs 11,489

Up to 12,500

Samsung SGH-E840

- Great build, slider
- Keypad tactility

Contact Samsung Telecomm.
India
Web site in.samsungmobile.com
Price Rs 10,700

PC Webcams

Tech-Com SSD-641-MP

- Good image quality; inexpensive
- No software bundle; poor build quality

Contact Shree Sagarmatha Dist
India Pvt Ltd
Phone 011-26428541
E-mail contact@techcomin-india.com
Price Rs 549

Tips & Tricks

SECRETS THAT KEEP YOU AHEAD IN THE RACE

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EVOLUTION



Illustrations Harsho Mohan Chatteraj

Evolution is probably the most preferred mail client in Linux, and for that reason, comes bundled with most distributions today. Other than being a feature-filled mail client, it's also a good PIM. We look at how you can make a few daily activities easier using Evolution.

Forget Passwords

There are times when there are many people using your PC—you wouldn't want them to access or download your mail by mistake (or intentionally, in the case that you have friends of the snooping type). In such cases, you can make Evolution forget the passwords it has saved. To do this, go to File >

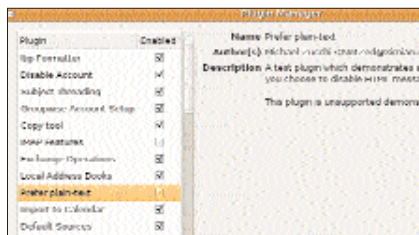
Forget Passwords and you will be asked for the password henceforth.

Set Mails As Tasks

Many times, mails can be related to a task you have to keep in mind; you can set a mail to be a task so you can be reminded easily. Right-click on any mail and select Convert to Task. If you switch to the Tasks section from the left panel you will find the mail there. You can double-click on it to set a start and end date, and add any additional summary you might want to.

Disabling Plugins

Evolution's features come from plugins, so it's pretty easy to turn on and off features when you want to. Most of us don't use all of them anyway. In Evolution, turn off plugins under



Disable plugins to save on system resources

Edit > Plug-ins. Uncheck the box against the features you don't use. This will save memory consumption and also speed up loading times a bit.

Setting Time Zones In Tasks

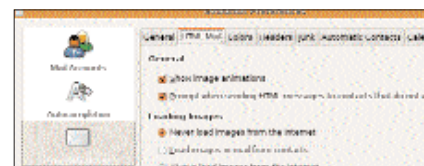
You might have contacts not based in India. While creating tasks or appointments for such contacts, you

need to keep their time zones in mind.

Create a new task by selecting New > Task. Enter all the necessary details and click on Time Zone on the toolbar. Select the time zone of the location of the person you have the appointment with. Click OK. Evolution will automatically adjust the time to match your current time zone. This feature can also be found in other components like Meeting and Appointments.

Image Loading Preferences

Most mail clients block access to images through mails hosted on the Internet—mostly for security reasons. Evolution does this, but if you want to be able to view these images, select Edit > Preferences. Select Mail Preferences in the left pane and then the HTML Mail tab on top. Here you have the option to either enable or disable images from sites altogether.

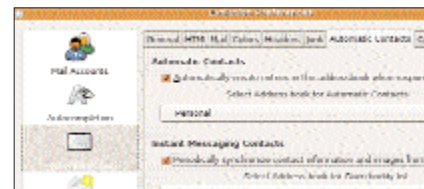


Images from sites can be blocked or unblocked

Another useful option is to allow access to images from sites only for mails from people in your contacts list.

Importing Contacts From Gaim

Evolution has a feature that allows you to create entries in the address book from contacts in Gaim (now



Gaim contacts can be quickly added and synchronised into Evolution

Pidgin), the instant messenger. This is really useful to add many known contacts, in an instant, into your mail client instead of manually entering each entry.

Go to Edit > Preferences > Mail Preferences tab > Automatic Contacts. In the Instant Messaging Contacts section, click Synchronize with Buddy List Now to add your contacts. Check the box against Periodically synchronize contact information and images from Gaim list to update Evolution with the new changes in Gaim. ☑

OPENOFFICE CALC

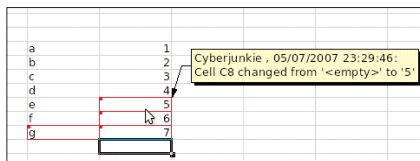


Illustrations Harsho Mohan Chatteraj

Word processing software for Linux is in fair abundance; not so for spreadsheet applications. OpenOffice Calc is the heavyweight in this category, and is the preferred Linux equivalent of Microsoft's Excel.

Tracking Changes

If you changed a cell's value, and made twenty more changes to different cells before deciding that you wanted the first cell's original value, you'd have undo all twenty steps to get it back. A better option is to track all the changes made to your spreadsheet.



Detailed changes made to any cell can easily be viewed

Go to Edit > Changes > Record. From now on, all changes made to cells will be tracked. Modified cells will be shown with a red border; move the mouse over a cell to see its previous value.

Customising The Interface For A Single Spreadsheet

Calc lets you customise its layout for a single spreadsheet only, leaving the default for other sheets.

Select Tools > Customize. Choose the toolbars you want to disable or change the order of. You can do the same for all the toolbars in OpenOffice Calc. Now to bind the customisations to only the file you are working on, click Save in the drop-down menu, and choose the file. Click OK to save.



Macros For Events

Macros in OpenOffice can be bound to events as well, so you can have a macro to run the moment you open a file, for example.

Click on Tools > Customize. Then click on the Events tab. Choose the event that you want to bind the macro to. Click the Macro button. From the library, select the macro you want and click OK.



Macros can be set to be triggered by events in Calc

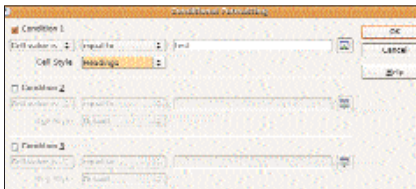


Styles And Conditional Formatting

Conditional Formatting automatically formats cells matching criteria you set, as you might know.

First create some unique styles if you don't like the ones provided by OpenOffice. Select Format > Styles and Formatting. Right-click in the window and click New. Enter a name for the style and use the tabs Fonts, Font Effects, Borders, etc.—to create your own style. You can use this style on any cell from the toolbars.

Now to set up conditional formatting. Select Format >



Cells can be formatted automatically according to set criteria

Conditional Formatting. Set the values for the conditions—equal to, less than, and so on—and select the Cell Style using the drop-down menu. Your custom style will be present as well. When done, click OK. All the cells matching the criteria should then appear in the style you created.



The Function Wizard

Some of us might have knowledge of a fair number of functions for Calc, but not all. The entire list of functions can be viewed using the Function Wizard. Select Insert > Function or press [Ctrl] + [F2]. Choose the Category of functions in the drop-down menu and click on a particular function. A brief description of the function is displayed.

To implement the function, click Next. You will be asked to enter the information needed for the function. Instead of entering values, you can get



The Function Wizard is an easy way to access and implement the huge database of functions

Calc to pick up data from the spreadsheet by clicking on a particular cell. Click OK when all the parameters are filled in. To have the function list available at all times as a sidebar, select Insert > Function List. Click on Fx in the sidebar to use a particular function and manually enter the values needed.



Comparing Spreadsheets

When a single spreadsheet is passed around among people, there are some changes and feedback that may be added to the spreadsheet. Select Edit > Compare Document. Browse to the location of the other spreadsheet and click Open. You'll get a detailed list of differences, with the option to reject or accept changes. The necessary changes are then made to the spreadsheet you were initially working on.



Set Print Ranges

Cells not in the print range in OpenOffice Calc are regions that won't be printed or exported—this is useful if you've used a few cells to take notes or just don't want them to print. To add regions to a print range, highlight a selection of cells. Then go to Format > Print Ranges > Define. You can further add and remove cells in the same manner by clicking on Add and Remove from the same menu.



Tracking Versions

Calc lets you save multiple versions of your spreadsheet and switch to any one when you need to. To save the state of the spreadsheet, go to File > Version > Save New Version and enter a summary for the version. Multiple versions can be saved in the same manner. To access any of the versions, click on a version and click Open. A new read-only spreadsheet with the saved state will load.



Automatic Value Highlighting

While entering huge amounts of data including headings and numbers, Calc can help reduce the confusion by automatically assigning colours to numerical values. Select View > Value Highlighting or press [Ctrl] + [F8]. All numerical values will automatically appear in different colours. ☑

ADOBE PHOTOSHOP CS3



The king of all image-editing software—Adobe Photoshop—has now been rejuvenated as Photoshop CS3! It's faster and more feature-packed than before! We go through the best of the newly-added features and how you can use them to make an impression through your work.

Big Toolbar... Small Toolbar!

Almost all computer graphics creation tools—be it image editors or 3D modelling software—can have millions of toolbars and menus, which often crowd your workspace. The new Photoshop CS3 allows you to minimise the toolbars to a more compact layout.

The toolbar on the left and the docks to the right, which contain the history, histogram, layers, etc., have this feature. Click on the title bar of the toolbar on the left and it will toggle between a wider and vertically-expanded mode.

Switching to a compact toolbar helps in saving some workspace

Similarly, click the title bar of the docks on the right and they will minimise to a compact bar. You can still access all the features in the docks, but they are hidden automatically whenever you move focus away from them.

Additionally, use [Tab] to hide all the palettes, and hold your mouse cursor at the edge of the screen to un-hide them. Once you're done, they'll go back into the edge of your screen, leaving you with your image.

Creating HDR Images

HDR (High Dynamic Range) in photography is a technique to display a larger range of light intensities than can be captured in a single camera shot. Start with taking the same shot at different shutter speeds to get multiple exposures. When you have your images ready, Photoshop CS3 can put them all together and create an HDR image.

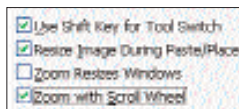
To create HDR images, go to **File > Automate > Merge to HDR**. Click **Browse** and select the files you want to make the HDR image out of. If you have a folder with the images, you can also choose that instead of separate files. Click **OK**, and Photoshop CS3 will process the images before displaying a window. This window lets you set the white point for the image. When you are satisfied with the results, click **OK**.

Creating Multiple Exposures For A Single Image

If you haven't taken multiple photos, you can still get yourself an HDR image using the **Exposure** filter. This simulates multiple exposures and can be used to get somewhat decent results in creating HDR images. Go to **Image > Adjustments > Exposure**. Alter the levels and click on **OK**. Save the file and make a couple of variations. Use these images to create HDR images as explained in the previous tip.

Zoom With The Scroll Wheel

If you want to zoom into your image, you could hold down [Alt] and use the scroll wheel, but this can get inconvenient, especially if you use [Space] immediately after to pan around your image—the window's [Alt] + [Space] menu comes up! Photoshop CS3 does let you use the scroll wheel for zooming, but it's not enabled by default. Go to **Edit > Preferences > General** and check the box against **Zoom with Scroll Wheel**. Click **OK**.



Access to the zoom function is easy with the mouse scroll

Refining selection edges

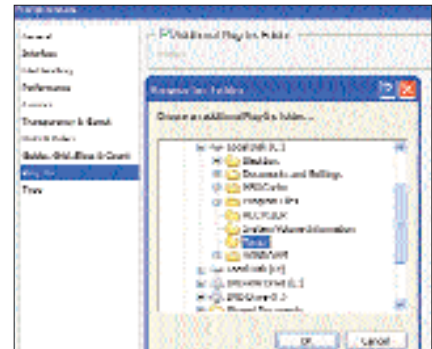
Selections made aren't always refined and smooth as you'd want them to be. Photoshop's selection tool now has a new feature called **Refine Edge**. By allowing you to alter settings for selection after it is made, much better control over the edges of the selection is made available.

Make a selection like you normally would with any of the selection tools—Marquee, Quick Selection, Lasso, etc. On

the **Options** bar on top, click the **Refine Edges** button. The area outside your selection will fade out, and you can make changes to parameters such as **Smoothness**, **Feather**, and **Contrast** to get the result you need.

Adding Plugins To Photoshop

Plugins are usually written by third-party developers to allow programs to extend their capabilities. You can find Photoshop plugins at

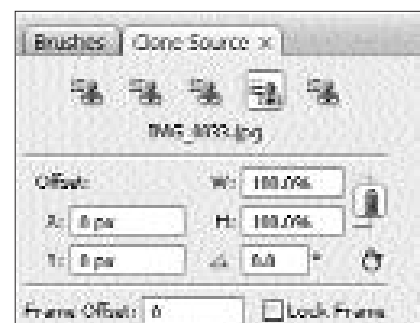


You can access third-party plugins in a separate folder from Photoshop

www.adobe.com/products/plugins/photoshop.

You can add a separate folder to have Photoshop automatically pick up plugins from if you have put them there. This also helps when the time comes to uninstall a plugin you don't care too much for. Go to **Edit > Preferences > Plug-Ins**, and check the box against **Additional Plug-Ins Folder**. Navigate to the folder you want to use and save your preferences.

Using The New Advanced Clone Tool



The clone tool in CS3 allows multiple clone sources

Do not mistake the **Clone Stamp** tool in CS3 to be just like the one in the earlier versions. This new version allows you set five different clone sources so you don't have to go selecting the source over and over again.

First, click the **Clone Stamp** Tool from the left toolbar. Click on the **Stamp Source** dock to the right (its icon is similar to the **Clone Stamp** icon).



Becoming An E-Bibliophile

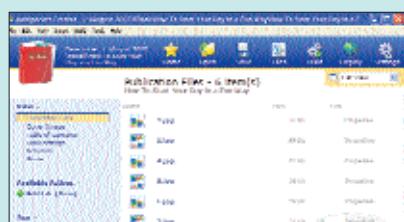
With Mobipocket's Reader and Creator, you can turn your PC and smartphone into your own library!

Jayesh Limaye

Now that the mobile phone is a fixture in your pockets, you might as well use it to entertain or educate yourself on those long, boring commutes. With Mobipocket Creator for your PC and Reader for your smartphone, you can turn any document—PDF, HTML, Word, even plain text documents—into e-books that you can read on the go. You'll find the Mobipocket Creator and Reader for your PC on this month's CD.



Mobipocket Creator Publisher Edition



Add files to Your e-book

Your First E-book

To start creating your e-book, select Blank Publication on the left in Mobipocket Creator's main screen. The Publication Files window then lets you add files to your new e-book. These could be HTML documents (the best option), XML, or JPG or BMP images, but you'll have to use the other wizards to create e-books out of PDF or Word documents. Add a cover image to the book, and your first rudimentary e-book is done!

Importing Gutenberg Books

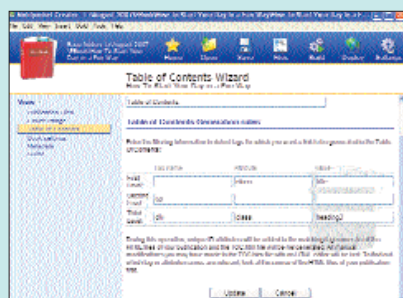
Project Gutenberg (www.gutenberg.org) offers a large number of free e-books, but they're in the text format. What's more, this text is rife with premature line breaks to make PC reading easier, but they look unsightly on a mobile device. You'll have to go through a bit of torture to convert these into Mobipocket books. Our way out:

In Creator's main window, select Import from Text Document. In the import dialog, check the box against Suppress Single Carriage-returns. Extracting chapter titles to build a table of contents is a bit trickier...

In the same import dialog, you can specify Header Extraction rules, which will add the <h1> HTML tag to text that conforms to these rules. This comes in handy when you're building a Table Of Contents (more about that later). For example, \X detects a string of upper-case characters, and \n detects a carriage return.

The Table Of Contents

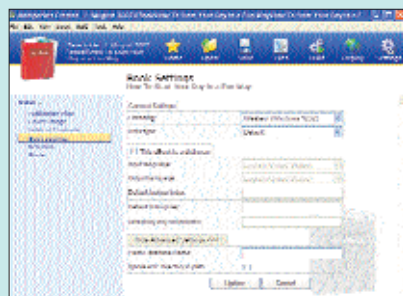
Like PDF bookmarks, a Table Of Contents (TOC) lets you jump to chapters in your book directly. Importing a PDF with links will automatically create a



Add the Table of Contents

TOC for you, but if you're building a book from HTML or text files, this can get tricky, and you'll need some HTML knowledge for it to work.

If you're importing a text file as above, titles will be enclosed in the <h1> tag, so to build your TOC, enter "<h1>" under Tag Name as your first TOC level and hit Update to generate a TOC for your e-book. If you're building a book from HTML files, use a HTML tag like "<text class=heading>" to denote your titles. In the Table Of Contents dialog,



Specify the book settings here

enter "text" under Tag Name, "class" under Attribute, and "heading" under Value to generate your TOC.

Publish!

You don't really need to bother with Book Settings, but you should spend a little time in the Metadata section to enter your book's details—the title, author, genre, and so on.

If your e-book contains multiple files, you can use Guide items to point to them. These will appear in the Go To menu in Mobipocket Reader—both on your PC and smartphone. Use these items to let your reader jump directly to, say, the cover of your book.

When you're all done, hit Build to start creating your publication.

If you're worried about the security of your work, you can choose to encrypt your publication. The Content Encryption option ensures that the source material of your publication can't be deciphered, but anyone with Mobipocket Reader can read the content. You can also choose to encrypt your book with a password or DRM—the latter only if you're planning to upload the book for sale.

Read!

Once your book is built, you can open it in Mobipocket Reader to read on your PC (it's not the best desktop reader, we must warn you). If you have a Symbian, Palm- or Windows Mobile-based smart phone, connect it to your PC and it will appear under Reading Devices in Mobipocket Reader, which will then download the installer for your smartphone. Your e-books will now be synchronised between your PC and phone every time you connect it and fire up Mobipocket Reader.

Enrich Your Reading Experience

On your mobile, you can use your e-book like a regular book—make annotations and notes, highlight items of interest, add bookmarks to come back to later and so on. The mobile Reader supports touch-screens, so you can configure it so a tap on the right of the screen goes to the next page, and a tap on the left goes to the previous. Purchase and install a dictionary from www.mobipocket.com, and you'll also have the added ability to highlight and look up any word from the dictionary! ☑

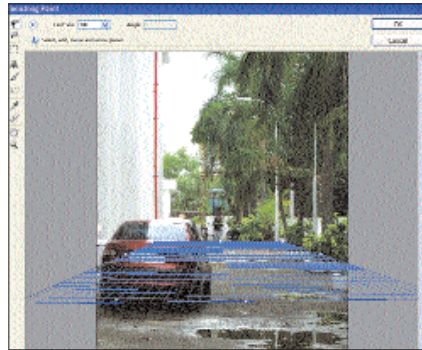
jayesh_limaye@thinkdigit.com

You will find five identical clone source icons. Click on one of them and [Alt] + click on the area of the image you want to use as a clone source. Perform the same steps for the other clone sources.

Another new feature is the ability to use other open images as clone sources.

The New Vanishing Point

In drawing terms, a vanishing point helps people draw objects in the right perspective. It consists of parallel lines that eventually appear to meet up at a single point. Vanishing point in Photoshop CS3 is meant to do the same thing.

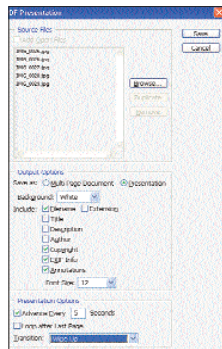


The Vanishing Point tool allows you to set up the perspective of an image

To access the Vanishing Point tool, go to Filter > Vanishing Point. A window will appear. Click the Create Plane tool if it isn't already selected, and draw four points that should denote a plane in your image; this could be a wall, a table top, a box cover, and so on. A densely-created mesh appears in its place. You can now use the draw or clone tool to work with objects in that perspective. Click OK when done. You can always go back to the Vanishing Point tool without having to recreate the entire plane.

Creating PDF Presentations

Photoshop CS3 allows you to export images as a PDF presentation—just like



PDFs can be created and used as a slideshow using the PDF Presentation option

PowerPoint. Go to File > Automate > PDF Presentation. Click the Presentation radio button and then click on Browse to select the images you want in your presentation. Select what details of the image you would like to have displayed, the

colour of the background, and the transition effects between slides. Click Save. Enter a location and filename for the PDF and click Save.

You can choose from one of the presets for compression of images. Click Save PDF to finish saving the presentation.

3D Objects In Photoshop?

Photoshop CS3 has a feature called 3D Layers, which lets you import 3D models into Photoshop. It supports some of the commonly used formats—OBJ and 3DS, to name the most popular. To add a 3D layer, go to Layers > 3D Layers > New Layer from 3D file. Select the file from its location and click Open.

Once the model has been added, you can move it around using the Move tool. To get more controls on the imported model, go to Layers > 3D Layers > Transform 3D Model. The Options bar on top changes with several controls that let you rotate, roll, and move the model around. More advanced options such as changing the lighting and moving the camera around are also available. When you've made your changes, click on the Commit 3D Transform icon on the Options toolbar.



Compositing of 3D objects in images can be done in Photoshop after importing

Modifying Textures

3D models generally need a mix of materials and textures to get their look, and most artists use Photoshop to create their textures. Now you can use Photoshop to create the texture and preview it in Photoshop itself. Once you have the model in Photoshop, you will find the textures in use present as layers. Double-click on the texture you want to edit and Photoshop will open the file in a new window. Make the necessary changes and Save it. The changes will be reflected in the 3D model.

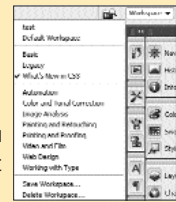
A Layered Cake

Creating layers out of multiple images has always been a pain—and a lengthy process. The Load Files into Stack script allows you to do this in a single step. Go to File > Scripts > Load Files into Stack. Choose files if you want to select separate files or if you have all the images in a single folder choose folder from the dropdown. Click Browse and select the files and folders from the

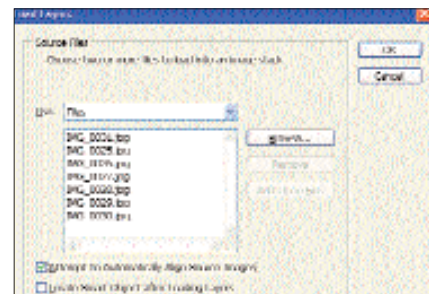
Bet You Didn't Know

Custom Workspaces

Photoshop CS3 has workspace presets for different tasks which you can switch to quickly just like in AfterEffects. The workspace icon can be found at the top right corner of Photoshop CS3. Click on this and choose from one of the presets—Automation, Image Analysis, Painting and Retouching, etc. Any changes you make to the layout of the workspace can be saved as well by clicking on “Save Workspace”.



Custom Workspace have layouts optimised for various tasks




Adding multiple images into separate layers is now effortless

list. Click OK and a new file will be created with all the images put in separate layers.

Batch-Processing Images

Photoshop's image processing function can help you batch-process multiple images in one go instead of changing parameters for every image one after another. You can find the image processor feature by going to File > Scripts > Image Processor. There are four steps that required to be set up. First, you select the images you want to process. Click the Open Images radio button and choose the folder where the images are present.

In the next step, select the location where you want the processed images to be dumped. The third step involves setting what format you wish to save the file and the quality level. You can also choose to resize it to another resolution. The final step is one of the more interesting ones. You can record actions—Photoshop's version of macros—which you can set to run all the steps you normally follow.

When this is done, click the Run button to start the batch processing. You can also save the preset using the Save button, or load presets using the Load and Save buttons. 

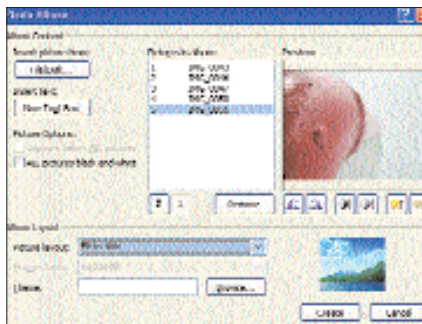
POWERPOINT 2007



Managing presentations can be part of our professional life or just a way to quickly show funny or interesting photos to people through e-mail. We know of no better application than Microsoft's PowerPoint to do the job.

Create Photo Albums with PowerPoint

Creating photo albums can become a dilemma for some of us. PowerPoint 2007 has a feature that lets you create a photo slideshow within seconds. First click on the Insert tab in the ribbon. Click the Photo Album icon and choose New



Creating photo albums in PowerPoint to show your friends

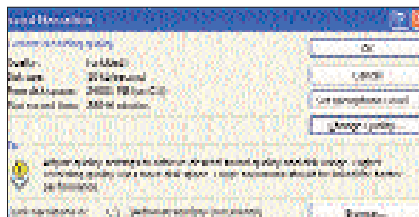
Photo Album. Click the File/Disk button to add images to the album. Select the photos you want in the slideshow and click Insert. You can use the Up and Down arrows here to change the order of the photos. You can also alter the brightness, contrast, and orientation of the images. When you're done, click the Create button and your Photo Album is ready. You can now continue adding notes to each slide.

Recording Narrations

PowerPoint lets you record a

voiceover for slides, which can be useful if you're not making your presentation to a live audience.

To record a narration, first click the Slide Show tab in the ribbon. Click the Record Narration icon. Here you have the option to change the microphone volume, quality, and where the file should be saved. Click OK once you're done with the changes. Click the Current Slide button if you want to record a voiceover starting from the



Record voice-overs for presentations for events you can't be present at

current slide, or click the First Slide button if you want to start from the very beginning. The slideshow will then start and you can start speaking into the microphone. Click to switch to the next slide and continue speaking as necessary. When all the slides are done, you'll be asked whether you want to save the timings for each slide. Click Save.

Quickly Apply Transition Effects



Transition effects for slides can be quickly accessed through the ribbon

Little visual details like transition effects can make presentations stand out. With older versions of PowerPoint, you were required to right-click on a slide, click on Slide Transition, and then choose from a list of effects from a sidebar.

In PowerPoint 2007, click the Animations tab in the ribbon. You will find a list of transition effects displayed

as colourful icons. Click on the slide you want to change or set an effect to and choose a transition effect from the ribbon. Typically, you only see five or so effects, but the scrollbar and the drop-down will reveal a lot more.

PowerPoint 2007 also gives you other options like the ability to change or set sounds, timings, and speeds for the effect.

Accurate Placement

Placing elements and then aligning them or accurately placing them can be a little irritating, but is worth the effort. Click the object and use the direction keys to move them into place. Holding down [Ctrl] while you do this gives you pixel-accurate movement, which means you can move them even more closely and even more perfectly. Don't forget to use gridlines to align objects better—under the View tab, check the box against Gridlines.

Formatting Images

Previous Office versions would also let you do some changes to the images in your presentations but in a rather non-interactive manner. The new PowerPoint 2007 shows you live previews after every change made.

Click on an Image and click the Format tab that appears in the ribbon. Here a wide range of settings such as Picture Styles, Brightness, Contrast, and Colour parameters can be modified. Move your mouse over any of the styles and the preview will be shown on the image right in the slide.

Using SmartArt

SmartArt are designs and shapes to be used in presentations. The specialty with these is that their colours change to suit the theme you use for the presentation, so you don't have to worry about them individually.

Go to the Insert tab on the Ribbon and then select the SmartArt icon. A wide variety can be found here. The same goes for Shapes tool—their colours change accordingly as well.

Disable Image Compression

By default, PowerPoint 2007 compresses images put into a presentation while saving. While this saves file size, it can result in a loss of quality—which you might not always want.

To disable compression, select the Office Button > Save As. Then select Tools > Compress Pictures. Click Options. Uncheck the box against Automatically perform basic compression on Save. You can also change the density (pixels per inch) of



Minding Your Money

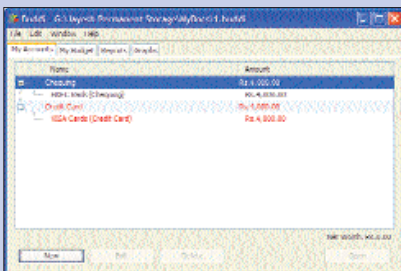
Yes, you *can* manage your personal finances easily—and for free

Jayesh Limaye

Managing personal finances was only for those with a commerce background, or so you thought. Turns out it's not: you have Buddi, a free, open source personal finance and budgeting program. It's available for Windows, Mac, and Linux, and also as platform-independent Java, from <http://buddi.soundforge.net>. The Windows version is just a 4.5 MB download. Buddi does not require installation—it can run standalone. Upon first run, you are prompted to create a new database. After doing that, you can opt to encrypt it. You are then ready to get started with your new personal accounting database.

Set Up Your Accounts

You will notice the My Accounts tab in the first screen. You can create two types of accounts, Credit and Debit. Credit accounts are marked in red, and debit accounts are black. Click New, and specify the account name, starting balance, and account type.

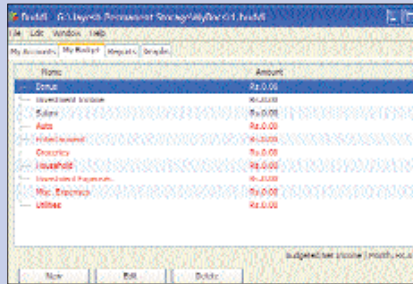


View and manage your accounts

You will notice that the Net Worth value is listed at the bottom of the window. This is the sum of the balance of all your accounts. If you make a mistake while creating or adding an account, worry not—you can always delete it and start over.

Get To Know Budget Categories

Clicking the My Budget tab will take you to the Budget category list. Click New to create a category. Budget categories are the details of the credit and debit of an account, and are therefore divided into Income and Expenses. There are a number of preset parent categories in each of the two to choose from, and these can be modified to suit your needs. Examples



Manage your budget categories

of categories under Income are salary and interest earned; examples of Expenses are money spent on groceries, fuel, etc. In these categories, you can enter the amount received or to be spent. You can create sub-categories under parent categories as necessary. The Budgeted Net Income / Month at the bottom of the window shows the difference between the budgeted income and the expenses.

Managing Transactions

This is perhaps the most important section of the software; you will likely spend the most time here. You can

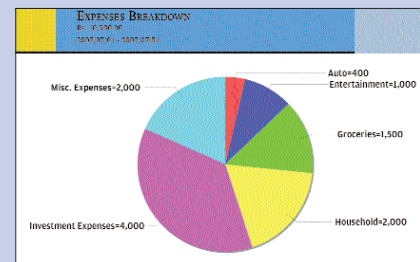


Add, edit and review your transactions

define money transfers, either between accounts or to budget categories. To open the transaction screen, click on the account to which you want to transfer or from which you want to withdraw—in the My Accounts tab—and click Open. You can enter the details of transactions such as amount, date, description, transaction number (such as a cheque number), category from and category to, as well as a memo to yourself about the transaction. Click Record, and it will appear in the Transaction window along with the updated Net Worth. If you made a mistake while entering the details, you can simply select the transaction and click Update (which was earlier the Record button).

Generating Reports And Graphs

Buddi has a nice reporting system that helps you monitor your spending habits. Reports can be easily created—select a report and timeframe, and the results will pop up in a browser window. Graphs and reports include a textual breakdown of income and expenses compared with the budget estimates, pie charts of expenses and income over a given time period, breakdown of Net Worth, changes in Net Worth over time, and more.



Graphs will help you analyse your budget

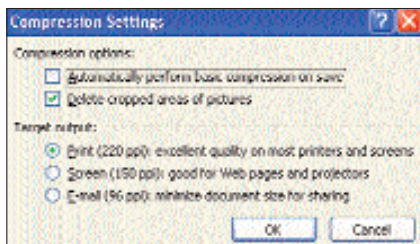
Backing Up The Database

Buddi automatically keeps a rolling backup of the most recently used data files (the number of backups depends on the settings in the Preferences), and you can manually back up or restore as necessary. You can work with more than one data file, too, if you want to keep a permanent backup of a previous database. Buddi will automatically open only the last used database and keep the other databases untouched.

Fiddling With The Preferences

Clicking on Edit, you can enter your preferences. Preferences has several tabs, the first being View, where you can set the appearance of the interface such as whether deleted accounts and categories should be shown. In the Locale tab, you can set the language, date format, and currency format. Since INR or Rs is not available in the drop-down list, click Other and enter Rs. Buddi also has support for third-party plugins, which are JAVA files (.JAR); you can manage these in the Plugins tab. An example of a useful plugin is one that lets you import and export reports to CSV files, which can be read by applications such as Excel. In the Advanced tab, you can set the budgeting interval and the number of backups, and add or edit the existing account types. ☑

jayesh_limaye@thinkdigit.com



Disable compressing of images to obtain better quality

the images saved.

Keep in mind that this option will only be set for the current presentation, which means you have to do this over again when you work on another presentation.

To enable this for all the presentations you make, you need to turn to the Registry (back up your Registry before proceeding). Start the Registry Editor. Navigate to HKEY_CURRENT_USER\Software\Microsoft\Office\12.0\PowerPoint\Options. Create a new DWORD here. Call it AutomaticPictureCompressionDefault. The default value will be 0. This disables the automatic compression of pictures. If at anytime you want it enabled, double-click the DWORD and change its value to 1.

Save Presentations To The PowerPoint 97-2003 Format

Like the rest of the Office 2007 applications, PowerPoint 2007 saves files in the new .pptx format, so previous versions of Office are bound to have issues opening them.

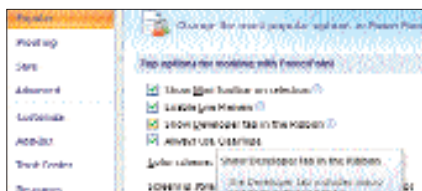


Fix compatibility issues for previous Office version users by forcing saving to older formats

You can force PowerPoint 2007 to save presentations in an older PowerPoint format. Go to the Office Button and click PowerPoint Options. Go to Save in the left pane. Click on the drop-down menu for Save files in this format, and choose PowerPoint Presentation 97-2003.

The Developer Tab

The Developer tab in PowerPoint is



The Developer mode allows better control over macros

a hidden tab in the ribbon. It allows you to create and run or edit macros. To enable it, click on the Office Button and then the PowerPoint Options button. Under the Popular section, check the box against Show Developer tab in the Ribbon. Click OK to save the changes. The Developer bar will appear in the ribbon on top and can be accessed by clicking on the tab.

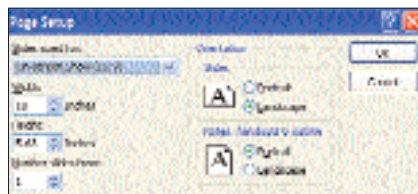
Setting Up Layouts

The layout of presentation elements in a slide should be altered depending on the amount and type of information in it. Generally, the entire slide has a title, a footer, and text in between—usually numbered or bulleted items.

To modify layouts and create your own ones, go to the View tab in the ribbon and click the Insert Placeholder drop-down icon. Choose the type of media you intend to put in it. Next click and drag a box of the size you want in the slide.

Page Setup For Presentations

Depending on the type of projector or screen you use or the impact you need to deliver with a presentation, it is wise to change the resolution of the presentation accordingly. For example, presentations at standard 4:3 resolutions



Page Setup allows you to create slides for different display or print setups

will look awkward on widescreens so while creating the presentation you would want it in that resolution or aspect ratio.

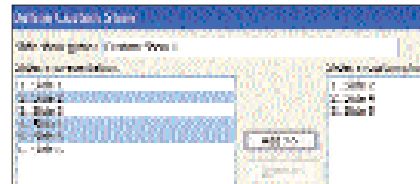
To change the page setup, simply go to the View tab in the ribbon and then click on Slide Master. Click on the Page Setup icon and here, you can set what you want the slides sized for. A range of presets are available and you can enter your own custom size as well.

If you've chosen one of the readymade design themes or even created one by yourself, you want to be a little careful while changing the page setup—it can wreak havoc on the design.

Creating Custom Shows

If you have a really long slideshow, but don't need a lot of slides for a particular audience, the Custom Slide Show comes in handy.

Open your presentation. To create your own custom show from this, click



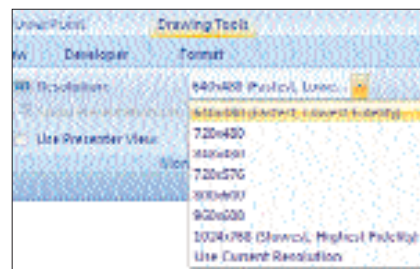
Custom Shows give you the option to only show a small selection of slides

on the Slide Show tab in the ribbon. Next, click on the Custom Slide Show drop-down icon and click Custom Shows. Click New to create a new custom show. From the pane on the left, select the slides you want in the custom show and click Add. You can use the Up and Down arrows to change the order of the slides as well. Click OK.

To play the new show, click on the Custom Slide Show drop-down and click on the custom show you just created.

Changing Resolutions On The Fly

Large presentations with high-resolution images can be a burden on slower machines. To avoid any embarrassment during presentations, PowerPoint has a useful feature that can switch resolutions of the presentations down to more manageable levels.



PowerPoint gives you an option to switch resolutions just for playing back presentations

Click on the Slide Show tab on the ribbon. Under Monitors, click the Resolution drop-down and select a suitable resolution. The next time you run the slideshow, the resolution will be switched to the one you specified.

Pin Recent Presentations

Some presentations are visited more often than others. Instead of having to browse to the location and manually open up the presentation every time, you can choose to have the most-used presentations pinned to the Recent Files list.

Click on the Office Button and you will find the most-recently-opened presentations in the list to the right. To the right of each file, there's a pin icon that can be clicked to permanently pin the file to that list. Use the pin again to remove it. [X]

Q&A

Your Questions, Our Answers

Questionable licenses and truant uninstallers—all dealt with right here!

Cable Trouble

Q My system stops responding suddenly while I'm in the middle of my work. I can do nothing but restart it. After restarting, it says "DISK BOOT FAILURE: PLEASE INSERT SYSTEM DISK AND PRESS ENTER". I then have to remove the cabinet, move the cables, and restart. The system works fine for a day or two, and then it's the same thing over again.

Ashok Pothana

A Your problem is essentially a result of faulty power connectors. The fault develops with Molex connectors over a period of time, usually if they are frequently removed from and attached to devices. We advise you get the power connectors replaced as soon as possible; faulty connectors can lead to hard drive errors and eventually drive failure.

Certification Obsession

Q I have an NVIDIA GeForce FX 5200 graphics card. The drivers supplied with it are not WHQL certified. When I try to install drivers from NVIDIA Forceware versions 77.37, 93.13, and others, I see an error like "No supported drivers found compatible for your GPU."

Gaurav Warhekar



You can use unsigned drivers as long as you know where they came from

A Go ahead and install the drivers that came with your card even if they are not WHQL certified. WHQL certification is not a prerequisite for the thing to work. The driver numbers you mentioned do not support GeForce FX 5200 GPU-based graphics cards. Download the latest NVIDIA drivers for your card from www.nvidia.com if you are experiencing any issues with the older drivers.

The Mother Of All Errors!

Q When I switch on my computer, I see the following message: "Intel CPU uCode Loading Error". Please help.

Vinay Tiwari

A Your motherboard needs a BIOS upgrade. Visit the Web site of your motherboard manufacturer and download the latest BIOS for your motherboard—and also the utility to flash the BIOS. You might be able to flash your BIOS through Windows, but if it can only be flashed in DOS mode, you will need to boot using a Windows 95/98 bootable CD or disk.

Wired!

Q My friend and I have computers with Windows XP SP2, and we have the same broadband ISP. Each of us has a static IP address. How can we remotely access each other's computers?

Manan Pandya

A Windows XP has a utility, called Remote Desktop Connection, which lets you access a computer remotely. You can use it to access your friend's computer and vice-versa in the following way. First, enable Remote Desktop on both the PCs. Open System in the Control Panel and click the Remote tab. Check the box next to Allow users to connect remotely to this computer under the Remote Desktop section, and click OK. That's it; you can connect to each other's computers and view each other's Desktops.

For those who do not have a static IP, there are other ways: register for free at www.LogMeIn.com, and download and install the application on the PC that is to be accessed remotely. The host PC does not require the application to be installed; all you need to do is log on to the site and sign in. You can immediately start accessing the Desktop of the target PC. This works even if either or both of the PCs is / are behind a proxy server.

Time To Upgrade!

Q I have 3 GHz Pentium IV, a motherboard with SiS Mirage onboard graphics, 512 MB of RAM, and an 80 GB hard drive. I installed two games, *Shadowgrounds* and *Lord of the Rings* from your DVD, but when I start them up, the game window launches for a moment and closes automatically. I have Windows XP Pro SP2 and have even installed DirectX 9c.

Sameer Ahmed

A The games you've mentioned require a DirectX 9c compatible graphics card, and the SiS Mirage graphics solution won't do. Just installing DirectX 9c does not fulfil the requirements; the hardware needs to be fully compatible to be able to render the graphics in newer games. We suggest you upgrade to a newer graphics card such as the NVIDIA 8500 / 8600 series if price is of concern. If it's not, you can opt for higher-performance cards such as the NVIDIA 8800 series. You will also need to upgrade your motherboard to be able to support one of these PCIe cards, so make sure

Get Help Now!

E-mail us your computing problems along with your contact details and complete system configuration to 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 Meaner Tuner

Q I have an Intel 1.1 GHz Pentium III with 256 MB of RAM and an 80 GB hard drive, along with a Tech-Com TV-Tuner. When I try to capture a TV program, it drops too many frames.

Ankit Sarang

A The system configuration you have is more than enough to view TV using a TV tuner. But it is not enough to record live TV at high quality. You will be able to record in the MPEG-1 format (VCD quality) without dropping a frame,

but if you try to record in MPEG-2 format (DVD quality), you will drop a lot of frames (the resultant captured file will be of poor quality). If you want to record in MPEG-2, consider upgrading your hardware to at least a 2 GHz Intel processor or a 2000+ processor from AMD. To capture in MPEG-2 with a really good quality, you will require a TV-Tuner card with hardware MPEG capture capability, such as those from Leadtek Winfast. Check out the TV-Tuner comparison test in our April 2007 issue for more details about TV-Tuners.

your CPU is compatible with the motherboard you might upgrade to.

Talk Unlimited

Q What is VoIP, and software for it is available in the market? I have heard that one can call for free through VoIP anywhere in India and abroad. Is that true? I have a broadband connection. I have a 1.5 GHz processor and 256 MB of RAM, and I use Windows XP. Do I have to reconfigure my system for dialling abroad?

Tahir Hussain

A VoIP stands for Voice Over Internet Protocol. It is a form of telephony that involves the routing of voice calls over an IP-based network (such as the Internet), thus making cheaper call rates possible. There are no providers offering free calls to India, but a few VoIP providers such as Globe7 at www.globe7.com, VoipBuster at www.voipbuster.com, and Gizmogear at www.gizmo-project.com allow you to call free to certain destinations, but only after you pay for a minimum amount of credit.

The minimum system requirements usually quoted by VoIP providers is a computer running Windows 2000/XP/Vista with a 300 MHz processor, 128 MB RAM, 10 MB free hard drive space, a full-duplex sound card, a headset, and at least a 64 Kbps Internet connection. You should have no problems with your configuration as far as VoIP is concerned. It does not require any special hardware. All you need to do is download the VoIP software client from the above Web sites, buy credit, and start calling.

Run Fun

Q Each drive on a friend's Windows XP computer has a unique icon, and a certain program runs when he double-clicks on them in My Computer. I am fascinated! How I can achieve this on my PC?

Yogesh Bhuskute

A The icon displayed for each drive in My Computer is due to the presence of an Autorun.inf in the root of the drive. This is exactly the same as in the case of the autorun feature of a CD or DVD. Autorun.inf is an instruc-

tion file associated with the Autorun function. A simple autorun.inf file looks like so:

```
[autorun]
open=autorun.exe
icon=autorun.ico
```

Here, autorun.exe is the executable file that is launched when the CD is inserted, and autorun.ico is the icon file that gives the CD its icon. In case of a disk partition, this file executes when you double-click the drive icon in My Computer. Sometimes an executable file or a DLL that might contain an icon is also used instead of an icon file.

You can also try a freeware Autorun file editor such as the one from <http://autorun.moon-valley.com> if you wish to play around with autorun files.

How Do I Tell?

Q I recently bought a PC with Windows XP Professional SP2 from a local PC assembler. He says the Windows is legal and is pre-activated. Please tell me how I can ascertain as to whether I have a legal and pre-activated copy of Windows.

Mayur Patel

A To check whether your Windows XP is already activated, open the Run dialog box, enter `oobe/msoobe /a` and click OK. If your copy is activated, you will be greeted with a "Thank you" screen; if not, you will be prompted to activate Windows.

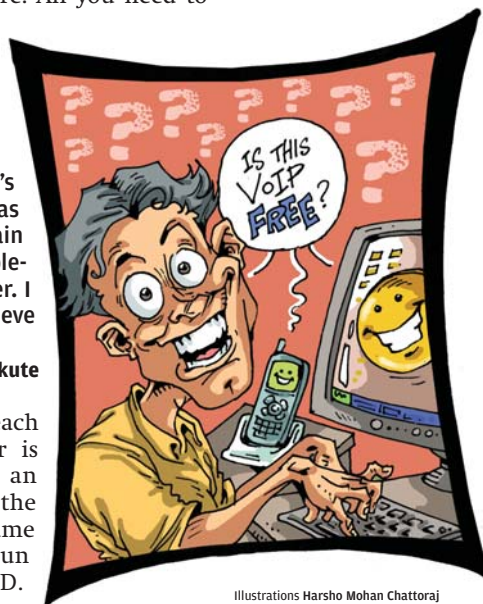
To ascertain whether your copy of Windows XP was legally purchased, use Microsoft's online validation process: try to download any of the Genuine Windows downloads from the Microsoft Download Center. You will be prompted to validate your copy online; simply follow the instructions and you will be able to verify within a couple of minutes whether your copy of Windows is legal. For more information about this, go to www.microsoft.com/resources/howtotell/ to learn about how to tell whether a Microsoft product is legal or pirated.

Back To Square One

Q My Windows XP computer is in a bad state, and after searching for all possible solutions, I've found that reinstalling Windows is the only way out. Please explain the process of reinstalling Windows—many people like me are afraid to try it because of the fear of losing data.

Parag Shah

A You are right—sometimes the only solution is to reinstall XP. Actually, this is better



Illustrations Harsho Mohan Chatteraj



Create Web Pages Using Nvu

Break free of templates... without working too hard!

Rossi Fernandes

With blogs, you don't always have complete freedom to design your pages the way you want them to be—you typically end up choosing one of the themes available. Of course, a hundred other bloggers have chosen the same theme, and when you land upon a blog that has the same theme as yours, you suddenly feel smaller, less unique...

Let's look at Nvu, a free, open source WYSIWYG Web designing software. (What You See Is What You Get means pretty much that... that the final result will look just like what you're seeing while you're going about designing it.) Nvu is based on Composer from the Mozilla package. It's a free download from www.nvu.com.

1 Set Page Parameters

Before you start, remember to place all the files you create in one folder so as to avoid hyperlinking problems between pages and images.

A blank page comes up when you first start Nvu. You first need to set up the basic parameters for the page you're going to create. Select **Format > Page Title and Properties**. If you don't enter the title of the page here, the default title or no title at all will be displayed in the browser's title bar.

To change the basic colour parameters for the page, choose **Format > Page Colors and Background**. Here, click the "Use custom colors" radio button and select the colours you want to use for various types of text such as active links, visited links, link text, etc. on the page.

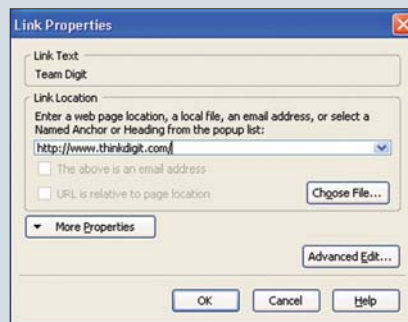
2 Add Visuals To Your Page

Most of the text formatting and styling that you might do in Nvu is similar to doing it in any word processor, so we don't need to tell you much. But for any kind of appeal, you need the visual element. To add images to your page, select **Insert > Image**. Choose the path for your image. It can be a path on your local drive or a location on the Internet. If it's a location on the hard drive, keep the image in the same folder as your HTML file.

3 Create Links

To create a hyperlink, first select some text (or an image).

Right-click on it and select **Create Link**. In the window that appears, enter the desired URL and click **OK**.



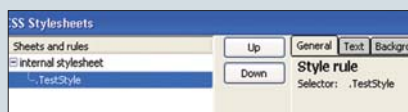
Create hyperlinks to friends' sites or blogs, for example

4 Make Changes To The Code

Advanced Web designers code complete pages by hand in simple text editors, and Nvu does let you alter the code it generates. Click on the **Source** tab and make the changes you want to. These will be reflected both in the **Preview** and the **Normal** views.

5 Add CSS To Your Pages

Nvu has a CSS (Cascading Style Sheets) Editor to set up styles. To access it, select **Tools > CSS Editor**. Click the **Rule** button. Enter a name for the style. Click the **Create Style Rule** button. Here you can set the colours, font styles and sizes, and many other parameters for that style. Click **Close** when you're done.



CSS gives pages a much more modern and elegant look

To set a style to a selection of text, first highlight that text. Then in the drop-down menu for the setting of a selection to a class, choose the style you just created, and it will be applied. (Classes are used to identify groups so all the objects in one class are given the same style.)

You can also choose to import external Cascading Style Sheets: make sure you have the Web page saved, and in the **CSS Editor**, click the **Link** button. Click **Choose**, point to the external CSS file on your drive or at the

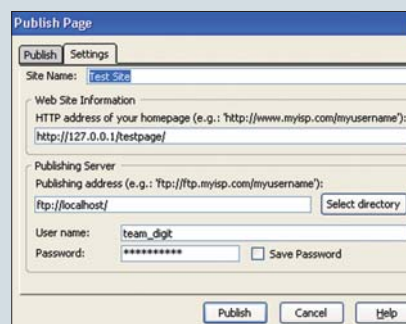
site that holds the file, and click on **Create Stylesheet**.

Before you go ahead with publishing your page, you can clean up unnecessary code using a feature called **Markup Cleaner**, accessible from **Tools > Markup Cleaner**.

STEP Publish Your Page

It's now time to upload your pages to your Web space provider's server. The upload is typically to an FTP server. Your provider would have given you a username, a password, and the FTP server details. To upload the pages, select **File > Publish**. Enter the site name, publishing server, username, password, and other details. Click **Publish** and the files will be uploaded.

If you use multiple Web space providers, the **Site Manager** is a good way to store details for all the sites. The **Site Manager** should be on by default, on the left side of the window. If it's not, go to **View > Show/Hide > Site Manager**. Select **Edit Sites**,



Quickly upload pages to remote servers using the Publish feature

and you can enter authentication and connection details for many sites.

Most of us don't require dedicated Web hosts for (small) personal Web pages, and free services should suffice. Gmail and other Google service users can register for a free Web hosting service called **Google Pages** (www.googlepages.com) and you'll get a site address that should look like <http://YourUserName.googlepages.com>. In fact, there are many free providers you can easily find: Google up "free web hosting" or "free web hosts", and you'll find plenty of them. Note that some services, including Google, allow no FTP access; you need to use a Web interface and upload files one by one. ☐

rossi_fernandes@thinkdigit.com

than doing a fresh install, which takes longer because of the need to install everything, from the drivers to the software; besides, you need to reset the data settings.

Regarding reinstallation, you can reinstall XP right over the existing setup to repair most problems. Before starting the reinstallation, we advise that you back up important data.

There are two ways to do it. If you are able to boot into Windows, simply pop the XP CD into the drive and select **Install > Upgrade [Recommended]**. This will install XP over the previous installation and repair most problems. If you have an OEM version, this option will not be available, and you will need to reinstall using the second method, which we will explain shortly. Also, if you have an XP CD with a version lower than that of your existing OS (that is, if you installed service packs), you will get a message stating that a newer version of Windows was found and that you will not be able to run the upgrade. In this case, too, you'll have to use the second method, but bear in mind that you will lose any service packs you installed.

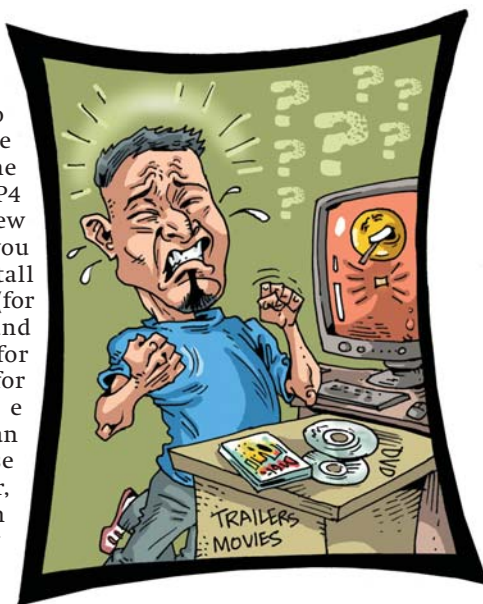
In the second method, boot using the XP CD. Press [Enter] when at the setup screen and press [F8] when you see the License Agreement screen. You will be presented with the option to either do a fresh (clean) install or to repair the selected Windows XP installation. To run a Repair Install, press [R]. XP will copy the necessary files to your hard drive to begin the installation and will reboot. When prompted to "Press any key to boot from CD", do not press any key, and let the PC continue booting. You will see the usual Windows XP setup screens. After the installation is done, you will find all your previously installed programs and settings intact. Reinstall all service packs and security updates.

A Question Of Codecs

Q I am not able to play the trailers and movies you give out on your DVDs. Please tell me what video format they're in and how I can view them.

Hassan

A The videos on the *Digit* DVDs are usually in the DivX video format; some might be in the QuickTime or MP4 formats. To view these videos, you can either install the DivX codecs (for DivX movies) and QuickTime for Windows (for QuickTime movies), or you can install and use VLC Media player, which is given out on every *Digit* CD (under *Essentials*).



Go Away!

Q My Add/Remove Programs window shows a blank space and I am not able to uninstall most of the programs I had previously installed. I am running Windows 2000 Standard Edition.

Rajnish Barot

A Locate the file `Mshtml.dll` and ensure that its permissions are set to Full Control. Open the command prompt and enter the following commands.

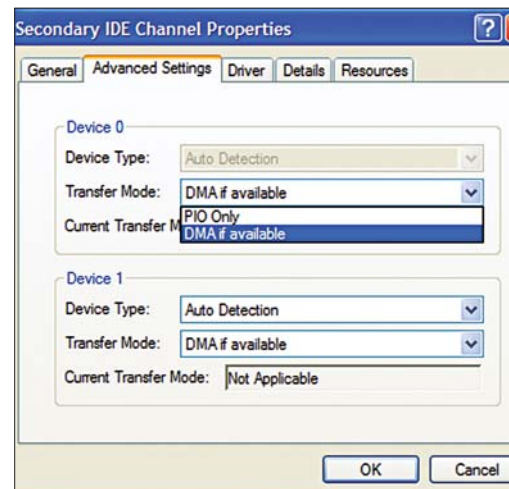
```
regsvr32 /u c:\winnt\system32\appwiz.cpl
regsvr32 /u c:\winnt\system32\mshtml.dll
regsvr32 /u "c:\program files\common files\system\ole db\oledb32.dll"
regsvr32 c:\winnt\system32\appwiz.cpl
regsvr32 c:\winnt\system32\mshtml.dll
regsvr32 "c:\program files\common files\system\ole db\oledb32.dll"
```

If this does not solve the problem, you may need repair your XP installation. We have covered that aspect as well in this section.

De-Moded

Q I recently bought a DVD-Writer, the Sony DVD-RW DRU-820A. DVD reading is very slow; it reads DVDs at just 0.85x. While creating a DVD image using Nero, the maximum speed it could achieve was 1150 KB/s. What could the problem be?

Bhuvnesh Agrawal



Set the transfer mode to DMA in Device Manager

A The drive is most likely running in PIO mode rather than DMA. You can check for this thus: open the Device Manager by running `devmgmt.msc`. Under **IDE ATA/ATAPI Controllers**, check the properties of all the channels, and in each case, check in the **Advanced** Tab whether the **Transfer Mode** is set to DMA or PIO. Set it to DMA if it happens to be PIO. Restart your PC. If that doesn't set it to DMA mode, delete that particular channel from the Device Manager and restart your computer. This time, the channel should be re-detected, and the DMA mode should be enabled. If this doesn't work for you, the drive is faulty. ☐

Onboard's Awful!

Buying a graphics card? Best DX9 or middling DX10? Games or HD content? Not sure what to choose? Read!

With DX 10 and all that it's promising just around the corner, a lot of people have begun thinking of buying graphics cards. Both NVIDIA and ATI have launched mid-range and entry-level graphics solutions, which have pushed prices of earlier graphics hardware even lower; this is the ideal time, in my opinion, to buy a graphics card. Why? Well, for one—and (sigh!) I've been saying this over and over—integrated graphics just doesn't cut it for the current crop of Desktop applications, let alone games, any more. You have high-resolution movies, and image and 3D editing, not to mention games. Indulgence requires sacrifice, of course—a few thousand rupees to be exact.

Two of my close friends finally decided to fortify their computers with graphics cards this month. One is upgrading, and the other is an onboard graphics user. After some deliberation, the three of us decided to meet at Lamington Road on a Saturday. They had different requirements, though—the first pal could spare 14,000 rupees, and he wanted a *good* gaming solution. The other had only Rs 5,000, and humbly requested we make the best of what he had.

The NVIDIA GeForce 7 series and ATI Radeon X1000 series are still very much around, although NVIDIA has a good supply of their latest 8 series cards coming in to our shores. ATI should follow suit, though to their defence, they launched their DX10 range only very recently.

There was this one guy who had a couple of graphics cards on display. He showed us an XFX 7600GT for Rs 6,000. This is a solid DX9 solution, and is a touch faster than an 8500GT. A Zebronic 8500GT was also on display—just Rs 5,000. I was shocked to see the prices of the latest cards: A Palit 8600GT costs just Rs 8,000—excellent value for money. Such cards will run all current games at medium settings and resolutions. They're even more suitable for movies, where their superior decoding capabilities come into play.

There were also some older cards—a powerful XFX 7900GS for Rs 13,800 and a GeForce 7900GT for Rs 16,000. The 7900GT is your best bet for gaming in the sub-20,000 category, unless you can find a 7900GTO / GTX, which offers 512 MB of RAM (the other 7900s all feature 256 MB) and higher core and memory clocks. An XFX 8600GTS was on display for Rs 11,000; this is basically an overclocked 8600GT that offers

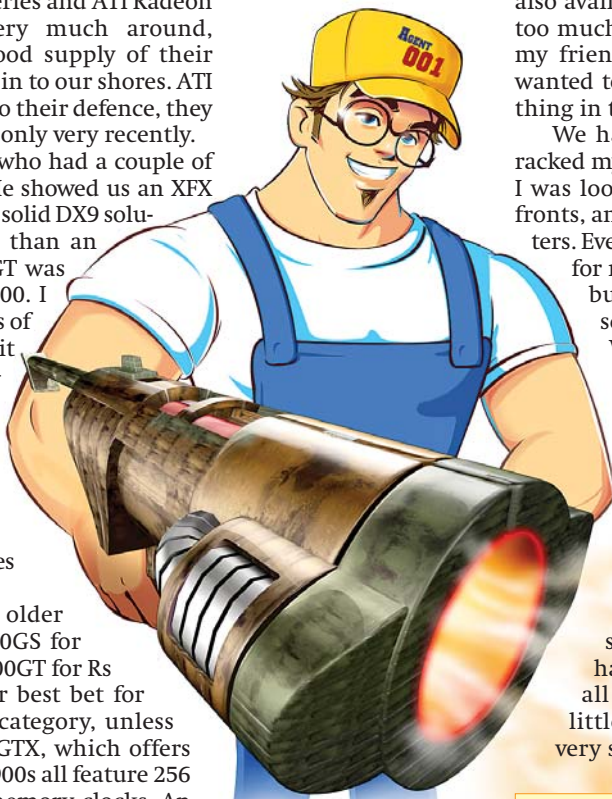
15 per cent more performance. The 8600GT / GTS are DX10-ready, but do not be fooled—these won't offer great performance on DX10 titles, however the silver lining—unlike DX9 cards, they will at least be able to run DX10 titles.

The next vendor showed us a Leadtek GeForce 8800GTS 320 MB. This one was priced at Rs 22,000. Other brands like XFX, Palit, and Zebronic also have these cards. The bigger brands—ASUS, Gigabyte, and MSI—also have the full range of GeForce cards. In fact, we found an XFX 8800GTS 640 priced at an astronomical 30,000 rupees. The GeForce 8800GTX is also available on demand; no vendor stocks the card—the price (Rs 34,000 and upwards depending on the brand) is probably the deterrent. ATI's latest HD 2000 series isn't available in India right now. We did find a vendor saying he could arrange for an HD2900XT for Rs 30,000. This card has a massive 320 shader units, although all bets are off till we actually test one.

The older ATI cards are still in the market—a Sapphire X1950 Pro was available for Rs 16,500. A very good gaming option for older and current-generation games, for all but the highest detail and resolution settings. An X1950XTX is also available for Rs 25,000, but this is, frankly, too much to spend on a DX9 card. I cautioned my friends to be thrifty, particularly if they wanted to go with a DX9-only solution, as anything in that space would be strictly stop-gap.

We had a cola at a nearby restaurant as I racked my grey matter for the perfect solutions. I was looking at frugality, performance on all fronts, and future proofing as essential parameters. Eventually, I decided on a GeForce 8600GT for my first friend; he was happy, since his budget was much higher. I even counselled him on SLI as a later possibility. We settled for the Palit 8600GT, though I couldn't get the guy to go lower—8,000 bucks. My friend wouldn't pay the premium that XFX demands as a larger consumer brand. I was OK with it, since the warranty period was the same. Friend number two was thrilled with the Zebronic 8500GT for 5,000 bucks (my bargaining skills failed again).

On the way home, my friends started ribbing me about me not having a graphics card myself! I took it all good-naturedly. But to let you in on a little secret, I'm expecting a big green box very soon... ☒



Want more of Agent 001? Turn over to read his answers to your buying questions

More Power To The Desktop

Q I'm looking to get myself a powerful Desktop... it'll need to run Windows Vista, Visual Studio 2005, and SQL server 2005, along with other software that are heavy on system resources. I will be using it for gaming as well. So what should I buy? Should I go quad-core, or will a Core 2 Duo suffice? Also, should I wait for DDR3?

Gaurav Kumar

001 Your requirements are high, but you haven't mentioned a budget. You also haven't said whether your gaming is going to be casual or "hardcore." So, with some guesswork involved, I'd place the price for your new computer at around Rs 50,000. Listed alongside are the specs I'd recommend.

Make sure to pick a roomy cabinet to avoid overheating. If you want a better graphics solution for decent gaming at medium resolutions opt for the 8600GT (Rs 8,000). A quad-core will be good for multitasking, but not necessarily better for gaming. In the programming and application development departments, there will likely be a small performance increase. If you want to go quad-core, I suggest waiting till Intel's price drop, expected some time during August—this should see the Core 2 Quad Q6600 become really affordable. However, current applications do not really benefit from more than two cores. Go quad core only if you want to future proof. The Core 2 Duo E6750 will also make its market debut at that time. And yes, drop the idea of DDR3—it'll be a long wait!

Thou Shalt Upgrade

Q My current configuration is an AMD Athlon 64 3000+ @ 2.0 GHz, 512 MB of RAM, a 256 MB GeForce FX5200, an 80 GB HDD, and an MSI K8 M800. I'd like to play some of the new games like *Test Drive Unlimited* on my system. Will it be possible if:

1. I get 512 MB more RAM?
2. A new display card with only the existing memory? I can spend a maximum of Rs 5,000.

Aneesh

001 Aneesh, I know it's tough, but you will need a memory and graphics upgrade at the least to play *Test Drive Unlimited*. However, a better graphics card would also help a great deal, more so than a memory upgrade. Keep in mind that AGP cards are costlier than their PCI-Express counterparts.

Look for a graphics card based on NVIDIA's GeForce 7600GS chipset; this should cost you roughly Rs 5,000. The card should have 256 MB of video memory and would help you play *Test Drive Unlimited*.

Music, Not Noise

Q I want to buy an in-ear set of earbuds with good noise isolation. My budget is Rs 5,000. Any help you can offer?

Ashwin Mendonca



The Creative EP630 for Rs 1,200, without a doubt! There's nothing better available for even double this price. You may get these for even less; we've seen sets going as low as 900 bucks.

Money To Burn

Q I want to buy a PC with the following specifications: a 250 GB SATA hard drive, 1 GB of RAM, a graphics card with 512 MB of memory, a dual-layer DVD-Writer, and Genuine Windows Vista Ultimate. My budget is Rs 1 lakh.

Vega Jeet



You will get something much better than what you've mentioned for less than a lakh, I assure you! However, you haven't mentioned what you intend to do with such a rig. I surmise you're into gaming, or at least that you intend to subject the PC to heavy multimedia usage. Here are my recommendations.

Agent 001's Recommendation		Rs.
Processor	Core 2 Duo E6700 (2.66 GHz)	16000
Motherboard	ASUS P5B Deluxe	11500
Memory	2x1 GB DDR2 667 MHz Kingston	4700
Graphics Card	Geforce 8800GTS (640MB)	26000
Monitor	ViewSonic VA2235WM	22000
Hard Drive	Western Digital 320 x 2 GB	8000
Power Supply	VIP 600 Watt	4800
DVD Writer	Sony DRU830A	1800

The Core 2 Duo E6750 should be available by the first week of August for a little less than the current price of the E6700.

Creative All The Way?

Q I'm a little confused between Creative's Gigaworks Pro-gamer G550W and the Inspire P7800. Which gives better performance? I have a Creative Sound Blaster Audigy 4 sound card.

Venkat Kumar S



The Gigaworks Pro-gamer would definitely perform better, and is worth a look at Rs 16,000. Also look at the Logitech Z5300, a great 5.1 system for gaming and movies with its booming bass for around Rs 11,000. For music, I don't recommend a 5.1 system; instead, opt for the Altec Lansing MX5021 at Rs 8,000; nothing even comes close for music.

Work 'n' Play

Q I want to buy laptop for study purposes, and for some gaming. My budget is Rs 35,000.

Gokul



You might want to check out last month's issue for more options, but no laptop with a price tag of below Rs 35,000 comes with a decent graphics solution. I recommend upping your budget a bit if you want to game, and get an ACI Ethos Duo 1430D. This laptop also has a good processor (Core 2 Duo T5200). If you cannot spend more, then the Compaq Presario v3225AU makes a superb deal at Rs 32,990. It's a very good-looking laptop, with all the features. It will handle older games easily. ☑



Ask Away!

Want a tech product, but don't know how to go about buying it? E-mail agent001@thinkdigit.com with your complete contact details, and he might answer them here! Please note that Agent001 only answers purchase-related questions in this space.

Linux Desktop Environments

You've heard about "Gnome" and "KDE" and more—these Linux-related things are "Desktop Environments." If you're making the switch, which one is for you?

Asfaq Tapia

If you're a Windows user who hasn't experimented with the myriad of free Linux distros available, this one's for you. Let's take a look at some of the most popular Linux Desktop Environments that sit on top of the Operating System (OS).

A Desktop Environment (DE) typically provides a GUI: windows, icons, folders, toolbars, and abilities like dragging and dropping of files from one folder to another. Any DE will therefore include a window manager, file manager, taskbar, and more.



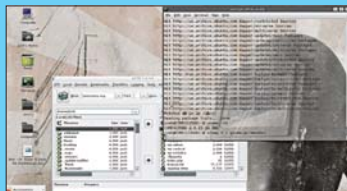
GNOME

The GNU Network Object Model Environment, or GNOME, is an international open source effort to build the simplest and most intuitive GUI for a DE. It's one of the few DEs that have consistently matched their production timelines, releasing a new version every six months. Currently, it stands at version 2.18. This version focuses on document

security, and incorporates privacy features that enable you to digitally sign or authenticate files using Seahorse, an application created for the purpose. That

apart, this version also focuses on managing laptop batteries efficiently, and increases the stability and responsiveness of the OS.

GNOME's popularity in the open source world is due to its exhaustive set of developer guidelines—known as Human Interface Guidelines—to be followed when creating an application for the environment. The guidelines ensure applications don't look too different from each other, and that some basic options like closing, minimising, and re-sizing, among others, are placed in the same location across all applications.



The GNOME environment in action in Ubuntu

GNOME's design keeps novices in mind. The DE does not have a lot of customisation options, and contains menus with an exhaustive set of explanation notes. The main reason most Windows-converts should stick to this DE is because it provides a well-documented FAQ section, and a very active online community that will answer any newbie's questions.



KDE

The K Desktop Environment, or KDE, is another DE that runs on Unix and Linux distros.

KDE believes in the manifesto that all components used to build the DE, and the applications that come bundled with it, have to be free and open source in the truest sense of the word, with no restrictions whatsoever on the user.

The major difference from GNOME lies in the fact that KDE is not entirely geared towards the novice. It allows for complete customisation, which might intimidate; having said that, there are a good set of applications that allow you to start using a KDE-based distro as soon as you install it. Applications like KOffice, Amarok, and Konqueror are some of the more popular KDE applications. KDE allows you to mimic OSes such as Mac OS X, so if you're the type who likes to have complete control over each and every aspect of his OS, this is the platform you might want to use.

The most popular distributions on this platform include Fedora (formerly Fedora Core)—though it's not the default environment—and Knoppix.



Xfce

Unlike GNOME or KDE, Xfce is a lightweight DE designed to work with computers that have both older and newer hardware.

It is very user-friendly, and incorporates a minimal set of customisable options. The filesystem hides system and configuration files from view so they can't be tampered with by the novice. In



The Xfce environment in all its splendour

comparison to GNOME or KDE, Xfce is regarded the most responsive DE. It uses its own file manager, called Thunar. One advantage of using Xfce is its install size, all of 50 MB to be exact.

Popular distros that use Xfce as their default DE include Xubuntu, SLAX, and dyne:bolic.

There are other DEs not as popular as the three above, but worth a mention:

Mezzo

A proof-of-concept DE based on the "Laws of Interface Design." It aims at presenting all information collectively, in one place, thereby completely debunking popular concepts such as the Desktop being a folder, and the menu system having nested folders. Instead, it presents all the needed information on the Desktop, and holds tasks and files related to "System", "Files", "Programs", and "Trash" in four windows on the screen. Mezzo is available as a .deb package, which is like an .exe file in Windows, for installation on all Debian-based distros like Ubuntu, Freespire, and Knoppix.

Project Looking Glass

A DE written entirely in Java, Project Looking Glass aims at creating a 3D Desktop Environment that can run on computers with low-end hardware. One of the most notable features is the creation of "reversible windows": you can write notes or leave comments on the back of any window! Windows can be tilted or rotated to the angle of your choice, and can also be made semi-transparent. You'll find the Looking Glass Live CD on this month's DVD. ☐

asfaq_tapia@thinkdigit.com

New-age Wonders

Asfaq Tapia

Getting things done without the hassle, thanks to Web 2.0

SimpleSpark.com

If you are clued into the Web 2.0 phenomenon, you've noticed the sudden explosion of online applications that can be accessed anywhere and everywhere. Into this chaos enters SimpleSpark.com, a site that catalogues all the fast-emerging Web 2.0 applications. The categories on the site range from "calendar" apps to the quirky "loans" applications

popular Zoho Writer (<http://writer.zoho.com>) to Writeboard (www.writeboard.com). We even found Just Anger (www.justanger.com), a site that lets you vent when you're angry and in distress! Every Web application listed in the search results has a little description below it. This lets you quickly find the app that best suits your need, without your needing to bother to visit the Web site and use its services.

Once you make an account, you can add applications you come across to the existing catalogue, and these will show up in the listings once they've been approved by the site administrators.

The site allows users to add more details to reviews of apps, too, so you can add screenshots

and give more detailed descriptions of the apps listed there. Having said that, the short descriptions are illustrative enough to tell you enough about the site you've found.



Sparking your imagination with Web apps

that you can use to keep track of your financial commitments.

Searching for "write", for instance, on SimpleSpark.com, brings up a list of all online word processing applications—from the

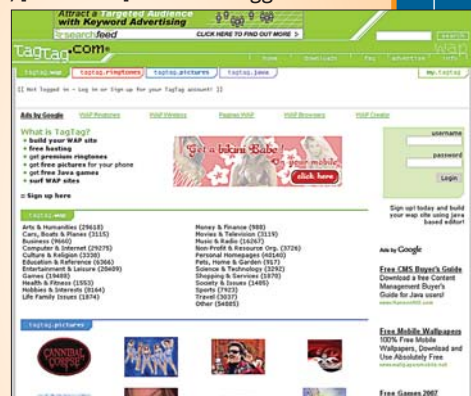
TagTag.com

Ever tried building a WAP site for yourself? The best place to make those swanky little sites that load off mobile phones, of the type you've always wanted to make, is at TagTag.com.

A name synonymous with WAP sites, TagTag.com is the one-stop shop for all your WAP-site-building needs. An online, Java-based WAP site builder can be accessed from the site.

Once you've created an account, you can browse through the 20,000-odd members' WAP sites hosted at TagTag.com. You can visit your new WAP site at [http://tagtag.com/\[username\]](http://tagtag.com/[username]). It is then tagged under a specific section such as "games" or "personal pages"—you get to choose from 21 other categories.

The WAP site maker has a simple graphical interface, like the type you see when composing an e-mail: it lets you change the



Building your WAP site was never so easy

background image and colours on the site. You can add hyperlinks and images, and make an unlimited number of pages, too. There's no need to learn to code in WAP, WML, or XHTML. Each WAP site is allotted 1 MB of Web space, which should allow you to host approximately 30 full ringtones, for instance.

TagTag.com offers a free WAP emulation browser called TEmulator, which can be used from a PC to access WAP sites. This application can be added to pages of other Web sites too.

The site also offers a lot of free content—a collection of games, wallpapers, and ringtones—from its PC-based Web site.

PopURLs.com



The grand-daddy of social news site aggregators

Browsing through social news sites can be so boring when you do it every day. Fret not—the grand-daddy of all social news site aggregators is here: PopURLs, the place to go to if you want your news content aggregated in one place. The site shows you content from the most popularly subscribed RSS feeds on the Web—from Digg to Del.icio.us to

Google News. You can play around with the customisation options, like changing the background colour and layout of the displayed feeds. You can choose to turn off video and image feeds from sites like Youtube and Flickr. The Story Preview feature can be a irritating; thankfully, it can be switched off. Another smart little feature, aptly named "buzz mania," increases the content on the page by showing you double the number of feeds on the front page. You can visit the WAP version of the site at <http://popurls.mobi>. Hooked to your RSS reader and want a place where you can get everything at a glance? This is where you should head to.

Home Security

This isn't Bhutan, where people leave their doors open all the time. Robbers and burglars exist here. Does raising a dog for securing your home make sense... or should you ditch Man's Best Friend and install a security system?

Asfaq Tapia (asfaq_tapia@thinkdigit.com)



I pity the burglar who can't read this...



...and the one that disregards *this*

1

We have had Caesar, our German Shepherd, for the past one year. It might sound insensitive to calculate what it costs to feed him... but he practically eats from our table. So cost: negligible.

Since Caesar falls asleep sometimes, we installed a security surveillance video phone at the front door and intrusion-detection alarms on the windows. I now have odd-looking boxes all over the house, not to mention a Rs 12,000 hole in my pocket.

2

Thanks to Caesar, the front door is always open when I return home in the evening; he barks at uninvited guests, as is the habit of most German Shepherds. Moreover, he usually sits near the door, so there's this sense of security.

Returning home from work, I now have to speak to mom on the video phone at the gate before getting inside. Not good if she's had a bad day. Sometimes she even sends me on the occasional errand. I don't like it.

3

Caesar guards the house not only from burglars but also from other furry creatures. Since we have had him, we haven't heard from the monkeys that used to pillage the kitchen for a late-evening snack.

Opened a window in my room, and a false alarm was activated. A ruckus ensued; peace was restored only after several calls to the technicians.

4

Being paranoid, I take a quick walk around the house at night to check if everything is OK. Caesar is fast asleep... not good, but every dog has his night.

Sleeping at night feels better now. I know the systems are working all the time—let Caesar sleep! But old habits die hard, and I sometimes end up checking the systems in the middle of the night.

5

Caesar has been sick just once, and I don't like to term the vet's charges "maintenance"—what's Rs 700 in return for a friend with a cold, wet nose?

The monthly maintenance charges for cleaning the video camera and checking the alarm system wires amount to Rs 600, and the electricity bill has gone up by about a hundred.

Security Meter: 4
Emotional Meter: 8



Security Meter: 9
Emotional Meter: 0



AND
THE
WINNER
IS...

For use at home, the security systems were just too problematic. Waiting at the door for your mom to answer the phone is plain annoying. If you go in for a cheaper, minimal security option, like just a video phone at the entrance, or intrusion-detection alarms on the windows, you aren't fully protected. And don't forget the Rs 700...

Having Caesar around is complete joy. This might not sound too rational, but the experience of raising a dog compensates for security-related worries. No security system will bring you your morning newspaper, all sloppy and wet. And unless you live in a mansion, a dog can guard your house from all things human, animal and alien.



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Digital Business

How Technology Can Help Your Organisation

Tech Careers

Master Of Penguins

Your passion for Linux can broaden your future prospects...

Samir Makwana

Linus Torvalds, the father of Linux, adopted the penguin, nicknamed Tux (because penguins look like they're wearing tuxedos), as the Linux mascot. Tux was later adopted by the Linux community as the mascot of the Linux kernel, and that's what the majority of people associate Linux with.

The Linux kernel, which started off life as a hobby of Torvalds', had 10,000 lines of code, and was released under the public licence. The open source community has been actively involved in the development and support of Linux. Today, many Linux distributions for specific use are available for free or commercially, with software packs bundled to meet users' requirements.

Commercially-available Linux OSes include Red Hat Linux, Novell's SUSE, TurboLinux's Fuji Linux, BOSS Linux, and many others. A large number of community-driven Linux flavours is also available worldwide.

Why Linux?

Why not? Linux is a robust, flexible, and transparent open source operating system. The Open Source Software community provides a variety of software packages to be used with Linux OSes for specific purposes. Many Individual Software Vendors (ISVs) offer software packages with Windows integration and after-sales support.

Support for community-driven software is available from members of the community. Linux is freely modifiable; it can be tweaked for optimum performance. It also offers flexibility and interoperability with several proprietary OSes.



Across the globe, the use of Linux within the business segments—as well as governments—is spreading at an unprecedented rate. Search giant Google has several terabytes of data in its index: it uses 3,500 Linux computers to respond to search queries and index pages from the Web. Besides that, corporate giants including computer OEMs (Original Equipment Manufacturers), banks, online shopping portals, and many other industries use mission-critical applications on Linux-based servers.

Scene India

The trend is currently a gradual shift towards Linux. It's happening in too many cases for us to ignore it. The best example would be that of the Life Insurance Corporation of India: they shifted their IT requirements onto Linux servers in 2005. After saving Rs 20 lakh by using free software, LIC expects to soon have more than 1,00,000 computers running on Linux.

Indian enterprises were indeed initially hesitant to adopt Linux. It was used in non-mission-critical operations like Web hosting. But today, the Indian corporate sector is playing a major role in showing the way to migrate to Linux. Linux has gained a strong foothold in the server space. According to IDC reports, Linux servers represented 12.7 per cent of the overall server market, which is \$1.6 billion (Rs 6,400 crore) for the Q1 2007. Nandkumar Pradhan, president and managing director, Red Hat India, states, "The technical capabilities of Linux are growing with technologies like virtualisation, real-time computing, security, etc. being built into the operating system. The awareness of the capabilities of Linux and open source is growing, and this will lead to more rapid adoption over the next few years in India."



We prefer individuals who are passionate about Linux / Open Source and choose to work on these technologies as part of their academics”

Naresh Shah
Managing Director
Novell India
Development Centre

Besides the existence of free Linux distributions, the presence of two major Linux vendors—Red Hat and Novell—has boosted adoption amongst Indian enterprises. Many companies are getting their workforce accustomed to working with Linux. It offers lower cost of ownership, a variety of open source software packs, and support for different hardware platforms. Different industries, from BPOs and ITES-enabled organisations to Banking, Finance and Insurance Services (BFSI) all use Linux for mission-critical operations.

Linux is now being used for servers as well as Desktops in enterprises such as AirTel, ABN Amro, BSNL, Canara Bank, New India Assurance, UTI Bank, and others. Even the governments of Kerala, Maharashtra, Tamil Nadu, and West Bengal have started adopting Linux in their offices.

Opportunity Knocks

The Linux platform is vast and diverse, and there are ample career opportunities available for enthusiasts. Technologists supporting open source—as well as, of course, geeks—believe Linux is a user-friendly operating system. True, Linux is indeed flexible—customisable and configurable according to requirement. For that customisation, professionals who know Linux in and out are in high demand.

Linux “fanboys” and active members of the open source community in general have a natural ability to fix problems as they occur. The fact is, it takes an enthusiast—or at least a very interested mind—to dabble in Linux.

Enterprises with different businesses and goals will have different IT requirements for their business operations. For instance, the requirements of mobile payment services like PayMate would be different from those of the online payment services offered by HDFC Bank. Both require their software applications and database to be accessible to their customers or clients. Handling such environments demands the Linux professional’s good analytical and logical skills coupled with inquisitiveness of mind.

Linux, in terms of career opportunities, can offer jobs in the areas mentioned here. Suitable education and training is required in any area, but don’t underestimate self-learning through practical application which is as important, if not more so, than the former.

Tech Support / Help Desk

Support for Linux is not easily available; not many certified professionals are available for tech support. Demand of Linux tech support professionals lies in providing solutions across the spectrum from installing, optimising, troubleshooting, and code debugging of Linux installations. It also includes any maintenance and support work on the computers of a company. Knowledge of different Linux OS flavours and widely-used open source applications such as the OpenOffice suite is expected from them, along with good hardware competency.

Programming Software Development

Software development on the Linux platform is very different from that for Windows. Programmers for Linux have to write code such that the application is interoperable with Windows or other platforms. Programmers with proficiency in languages like C++, JAVA, Perl, Ruby on Rails, and Python for Linux fit this segment. There are companies getting into development of cross-platform software packages that are used in Desktops and even mobile devices.

Web Development

Many Web hosting companies rely on Linux-based servers for hosting their Web site, databases, applications, and other development work. A sizable requirement for Web developers on the Linux platform exists. At present, demand for LAMP developers is high. LAMP stands for “Linux, Apache, MySQL and PHP”. Besides this, candidates proficient with Web technologies and in programming as well as scripting languages like Perl, Java, Ruby on Rails, and Python can choose to enter the Web development domain.

Saravanan Arumugam, Founder & CEO, Lynus Academy, which imparts training for Linux and open source software, speaks about the scarcity of Web developers for Linux: “A large number of Web development companies today suffer from a scarcity of Linux professionals holding the LAMP certification.”

Kernel And Device Drivers Development

Areas like chip designing, embedded devices and systems, embedded Linux, etc. require programming of the Linux kernel to work in real-time. Therefore Linux distribution meant for real-time programming and operations such as VxWorks, RT Linux, and others are used to perform specific functions and develop device drivers for chips for embedded devices. These programmers should be comfortable working with hardware languages such as Verilog and VHDL for Real-Time Linux design / model development.

“A high demand for Linux professionals is observed in applications development and device drivers for Linux-based systems,” says Naresh Shah, Managing Director, Novell India Development Center, the second-largest R&D centre for Novell worldwide.

What They Do, What They Are	
Functional Area	Designation
System Administration, Network Administration, Network Security, Web Server Administration	Linux System Administrator
	Linux Network Administrator
	Network Security Engineer / Analyst
Desktop Management and Maintenance	Technical Support Associate
Database Administration	Database Administrator
Linux System Development	Software Engineer
Kernel Development	
Device Driver Development	
Application Development	
Web Application Development	

System Administration

Here, it's no different from system administration for Windows / UNIX / Mac. Although it comes under Linux, it is a broad area with a lot of options for super-specialisation. The system administrator's functional area is vast; he might have to perform the functions of computer maintenance, network administration, network security, platform migration, system analysis, and so on. A system administrator for Linux is responsible for installation, troubleshooting, and maintenance of IT hardware / software for the Linux platform by providing on-site administrative support to several departments in an organisation.

For the Linux platform, a good system administrator should necessarily have exhaustive knowledge and be capable of working cross-platform, that is, Linux, Windows, and UNIX variants.

Cluster servers consist of independent servers having different OSes to work together for higher

Being a freelance or consulting trainer in Linux is also a well-paying option

opt for specialisation in that environment on the Linux platform. Professionals already holding certifications from vendors like Oracle and SAP will have to acquire certifications of using database packages in cross-platform environments. The database vendors also offer modules for those already certified in Linux.

Web Server Administration

Candidates with a good knowledge of Web applications and Web hosting servers are suited best for this kind of job. The main job of the Web server admin is to maintain the Web site server(s) and hosted Web apps to ensure site responsiveness. Good understanding of dealing with HTTP requests and responses through the TCP/IP protocol suite is expected from Web server administrators. Here, a knowledge of basic programming and scripting is also required so as to be able to work in different server environments including Linux. Experience of working on any of the popular servers like Apache, MySQL, Microsoft SQL Server, Windows Server 2003, and Microsoft Exchange 2000 Server is necessary.

Training

The industry needs people with strong Linux basics to train others working with it. Trainers are hired for corporate training, educational institutions, and governments. Organisations that offer training services as their core business operation are major employers of Linux trainers. Training is a well-paying option.

Being a freelancer or consultant for any of the above-mentioned career paths is also a well-paying option. Organisations shifting to Linux consult Linux specialists for specific purposes, such as installing a Linux server for their day-to-day operations. Yet, like freelancing options in other fields, it depends upon how one has networked and is recognised amongst peer groups.

Remuneration And The Growth Path

Organisations across industries follow their own policies in assigning designations and promotions, and offering remuneration. The functional areas in Linux can be divided into the top, middle, and bottom levels. Designations like "Junior Programmer," "Assistant System Administrator," etc. are assigned to Linux professionals. In organisations that have employees for both the Linux and Windows platforms, the platform tag is carried separately after the designation.

The average time taken to grow level-wise is approximately three to five years for any functional area. And like in any other occupation, salaries are offered based on qualification, performance, and project contribution. (Refer Table Remuneration)

In terms of hard skills, organisations look for skills specific to the employee's functional domain. So for application developers, what matters is knowledge of tools, programming languages, any applications developed, period since the candidate has been developing programs, etc. Soft skills are invariably important. Hands-on working ability with computer

Approximate Remuneration Matrix

Department	Entry Level	Middle Level	Top Level
System Administration / Network Administration / Web Server Administration	Rs 15,000 - 35,000	Rs 35,000 - 50,000	Rs 60,000 - 83,000
Tech Support / Desktop Management and Maintenance	Rs 8,000 - 16,000	Rs 18,000 - 35,000	Rs 40,000 - 60,000
Device Drivers for Embedded Systems and Kernel Development	Rs 15,000 - 35,000	Rs 35,000 - 60,000	Rs 70,000 - 1,00,000
Applications Development	Rs 12,000 - 30,000	Rs 35,000 - 50,000	Rs 60,000 - 75,000

All figures mentioned above are per-month, aggregated, and indicative.

performance. With cluster servers and virtualisation technology becoming popular, administrators are required to manage these as well. Demand for such professionals is expected to shoot up as many enterprises shift to Linux.

Network Administrators And Security Engineers

Network administrators are responsible for installation, configuration, and analysis of computer networks in an organisation. Their daily activities include troubleshooting of network problems, reducing network bottlenecks, monitoring the network, and securing it. A Linux network administrator plays a crucial role in any "Linux-enabled" organisation.

But Linux network administrators are essentially required for security of data at data centres. Confidential information is safeguarded with regular backups, ensuring secured connections, etc. Network security engineers work upon testing, configuring firewalls, and monitoring data flow. Hacking can be made next to impossible if proper security mechanisms are employed by the network security engineer.

Database Administration

Database professionals who hold certifications of a particular database environment may well



It is difficult for a person to master all core areas in Linux. The best option is to choose a career path in Linux and then specialise in it"

R Krishnan
Executive Director
Aptech

systems, servers, and other hardware serves as an add-on.

Education And Certifications

In the case of Linux, very few people—referred to as self-proclaimed geeks—would have landed decent jobs without formal Linux education, training, or qualification.

"Most organisations prefer to hire experienced candidates. For example, Linux certification is a must for system administrators, and for developers, a good programming background is required," informs R Krishnan, Executive director at Aptech, who provide computer courseware, IT education, and training.

It is today advisable to choose courses offered by Linux OS vendors—Red Hat or Novell—and select certifications modules in accordance with your area of interest. You could go the self-learning way, using the freely-available Linux OSes, but bear in mind that certification is always preferred.

"Students from engineering backgrounds with an exposure to working on Linux are considered the perfect fit. It's a proven hypothesis that students from mathematics and statistics backgrounds make good programmers," avers Raj Ganti, CEO, SQL Star International, who are involved in providing high-end IT training to aspiring and practising IT professionals as well as corporate executives.

Vendors such as Red Hat and Novell, who offer their Linux OSes for enterprises, have certification courses for individuals as well as professionals. Visit the vendors' Web sites for detailed information about the certifications offered:

Red Hat India: www.redhat.in/training/

Novell India: www.novell.com/training/

IBM: www-03.ibm.com/linux/va_3261.shtml

Sun: www.sun.com/training/catalog/operating_systems/index.xml

Oracle: www.oracle.com/global/us/education/linux/training.html

Turbolinux: www.turbolinux.co.in/solution_service/training.html

Courses are offered at three levels—Certified Technician (Beginner), Professional (Intermediate), and Administrator / Engineer (Advanced). Structured programmes are available through training partners. Courses by these vendors do cover cross-platform environments.

The learning process doesn't stop after acquiring the necessary certification. "Well-structured programmes help in getting the basics right, which are very important in any case. But the fact is that 80 per cent of application and learning happens on the job. One has to attend to problems and client queries, and to troubleshoot, efficiently, which is possible through constant learning and its practice through implementation," says Jeet Patel, who works as Tech Support Analyst (Linux) with a multinational company.

The Employer's Expectations

Initial training includes induction and exposure to the workflow of the company. As required, organisations prefer Linux profession-

als to attend to and give exams for the structured programmes offered by the principal vendors—Red Hat, Novell, Oracle, Sun, and IBM.

"Employee training programmes are very important to keep the Linux professional updated, and in the long run, to meet client requirements. The initial training is imparted for period of three to six months, based on the domains in which they work. Corporate training sessions and classroom training programmes are organised for skill-enhancement of the candidates in their domain," says Saravanan.

Vendor companies like Oracle and SAP for database packages, Sun for server networking and security, and Sun for Java offer structured programmes for those interested in working on Linux in a particular area. A certificate of attendance, besides the certification of passing, is indeed offered by these organisations.

"Holding a certificate of having attended a structured programme—and a certification of passing—adds value to a candidate's profile. Also, it makes it easier for an employer to short-list candidates," says Ganti.

Despite the fact that the demand/supply gap for Linux professionals is very high, certain unsaid rules for enthusiasts prevail. The most important and basic rule is, don't take up Linux as an option just to make money. A passion for constant learning is extremely important. Do not get blinkered by billion-dollar figures of future opportunities. It's therefore a crucial decision at the outset; always think about learning and growth, otherwise you might just end up with a monotonous job with negligible future prospects.

A Few Parting Words

Various activities now rely on Linux. Recently, Dell started selling Desktops and laptops with the Ubuntu flavour of Linux pre-loaded. Research firm IDC (International Data Corporation) estimates that the Indian Linux market will grow at the rate of 21% annually, to Rs 91.5 crore in 2010, mostly for services. Server shipments rose by 15.3% globally in the fourth quarter of 2006. The server space is responsible for the biggest pool of opportunities today.

According to a forecast by ABI Research, commercial Linux OSes will be enabled on more than 1.3 crore mobile devices globally by 2012, up from 81 lakh in 2007.

These figures indicate future requirements, but the reality is that an average Linux aspirant could face stagnation in his or her career graph after reaching the middle level. This could be combated by constant learning and upgradation of one's skill-sets.

Expertise in Windows can be gained by classroom learning, while in the case of Linux, remember what experience has taught Patel: "The fact is that 80 per cent of application and learning happens on the job."

And so, at the end, geekiness is just the beginning; if you want to make a career of a passion, learning should never stop. ■

samir_makwana@thinkdigit.com

The Devil Has Your Data

The magic of a brand new Network Attached Storage (NAS) server with none of the monetary pain!

Nimish Chandiramani

All of us know and love the company file server. It's where we dump our essential data and programs (wink, wink), not to mention actual work-related data. It's a way of ensuring that even if our workstations decide to go south, all our hard work stays intact. It's not even an option—for every organisation with more than one person, the centralised file server has been a fixture since the early eighties.

New Wave

We're all used to file servers, but for small businesses, Network Attached Storage (NAS) is quickly emerging as a much better option. Dedicated file servers can be expensive: consider the cost of an extra license of Windows Server 2003 or another support license for Linux, not to mention the cost of the hardware to run the OS. In companies where it isn't feasible to invest in different servers for every purpose, these file servers double up as domain controllers, DNS servers or Internet gateways—much more demanding tasks. Inevitably, their performance as file servers begins to suffer, and worse, if they should crash, they'd take down more than one essential service with them.

NAS servers are cheaper—mostly because they use more basic hardware and run a rudimentary operating system that's built for the sole purpose of managing storage. They also support multiple file-sharing protocols, so Windows users can use the Common Internet File System (CIFS) protocol, and Linux users can use the Network File System (NFS) protocol, to access the same data. (Of course, this isn't really an issue if you've standardised a platform across your organisation.)

While you can get a basic NAS server for as little as Rs 8,000 (without the hard disks), the ones with more features can cost a lot more—even reaching a ridiculous Rs 35,000! And then, there's the option of turning an ageing old PC into your own NAS server...

3D Modelling Shrikrishna Patkar
Imaging Chaitanya Surpur

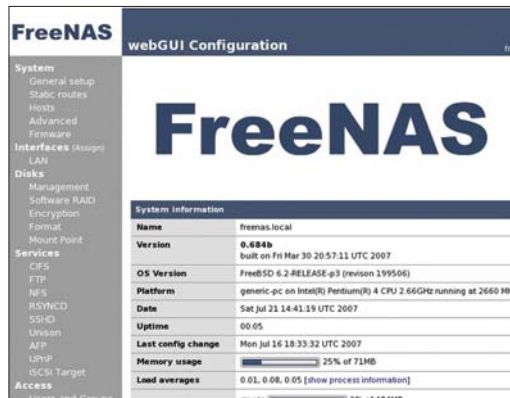


Ingredients

To start with, you're going to need a PC of modest configuration. Even a Pentium II with 128 MB of RAM will work for a team of up to twenty people; you'll need to consider something higher for bigger teams. If it's got a motherboard that supports SATA hard disks, so much the better. A USB Flash drive is optional (we'll get to that in a bit), and you'll need hard disks—as many as your board can support, or as many as you want, whichever is lesser. On this month's DVD, you'll find FreeNAS—a FreeBSD-based operating system built to manage your NAS server. Burn the ISO on to a CD and boot from it to start setting up your NAS server.

Setting Up

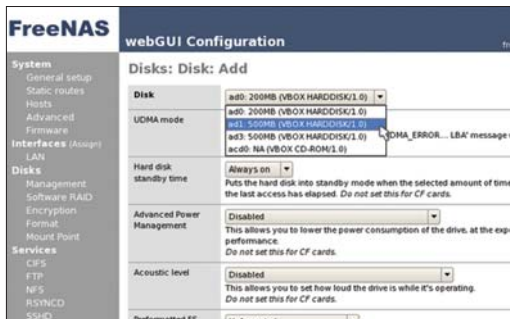
Installing FreeNAS to your system is optional—it'll do its job just as well running off the CD, but remember that every time you reboot, you'll need to reconfigure the server all over again. You can't format or share any hard drive you install FreeNAS on, so we recommend installing it to a USB Flash drive instead (be sure



The FreeNAS Web interface—your command centre

to first check whether your motherboard supports booting off USB). The installation is a no-brainer (just remember that your USB disk will be called "da0"), and in a couple of minutes, you'll find yourself being told to eject the CD-ROM and reboot. Now that it's installed, you can consider disconnecting your CD-ROM drive to make room for another hard disk.

When you boot into your new FreeNAS installation, you'll see a very simple console menu. All you need to bother with here is to assign an IP address and subnet mask to this server to get it on your network; your work with



Add your disks before anything else



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Perfect10

FreeNAS webGUI Configuration

System
General setup
Static routes
Hosts
Advanced
Firmware

Interfaces (Assign)
LAN

Disks
Management
Software RAID
Encryption
Format
Mount Point

Disks: RAID: Add

Raid name:

Type: RAID 1 (mirroring)

Balance algorithm: Round-robin read
Select your read balance algorithm

Members of this volume:
☒ ad1 (500MB, VBOX HAR)
☒ ad3 (500MB, VBOX HAR)

If you're on a predominantly Windows-based network, the CIFS protocol works best

Set up a RAID array to protect your data better

this particular machine is done. You can now administer your FreeNAS server from any workstation on the network, using the Web user interface—just enter the server's IP address in your browser's address bar and hit [Enter]. The default username is `admin` and the password is `freenas`—which you should change when you're done with your settings.

The Core

The first thing you need to do is add your hard disks under **Disks > Management**. Use the + icon to begin adding your disks. A hard disk standby time of 30 minutes will give you a respectable balance between performance and power savings if your network is going to be busy; if the NAS box isn't going to be used too often, you might even consider pulling it down to five minutes. You can also decide how much you want to trade off between performance and

FreeNAS webGUI Configuration

Services: FTP

FTP Server: ☒ Enable

TCP port:
Default is 21

Number of clients:
Maximum number of simultaneous clients.

Max. conn. per IP:
Maximum number of connections per IP address (0 = unlimited).

Timeout:
Maximum idle time in minutes.

Permit root login: ☐ Specifies whether it is allowed to login as superuser (root) directly.

Anonymous login: ☒ Enable anonymous login.

Local User: ☒ Enable local user login.

Banner:
Greeting banner displayed by FTP when a connection first comes in.

FXP: ☐ Enable FXP protocol.
FXP allows transfers between two remote servers without any file data going to the client asking for the transfer (insecure!).

NAT mode: ☐ Force NAT mode.
Enable this if your FTP server is behind a NAT box that doesn't support

Your shared disks can be accessible through various protocols—even FTP

disk noise—very useful if you work in a small, quiet place where disk noise can become extremely bothersome. Leave the Preformatted FS option as Unformatted—you should format your disks under **Disks > Format** when you're done with this part.

If you have two identical hard disks, consider using a RAID-1 setup: the two hard disks will appear as one, and data will be written to

both of them simultaneously—so if one disk fails, your data is still intact. The disadvantage, unfortunately, is that you lose the extra storage the second hard disk offers you. To start with your software RAID, select **Software RAID** under **File System** in **Disks > Format** for both the disks. Under **Disks > Software RAID > RAID-1**, use the + icon to add a new RAID array; give it a name and select the hard disks you want to add. FreeNAS also supports other RAID formats—for more dope on them, refer to *Know More About RAID* in our January 2007 issue.

Spread The Joy

Once you're done setting up your hard disks, it's time to share them with the world. The first thing to do is mount the disks and give them a share name, which will let people access the disk over the network. You'll find this option under **Disks > Mount Point**. The next step is to create **Groups** and **Users** (in that order, under **Access > Users and Groups**) who will be authorised to access the shared drives. If you're on a Windows domain, use the **Active Directory** option—this will automatically authenticate all the people on your network using their domain usernames and passwords.

Finally, it's time to decide on a sharing protocol. If you're on a predominantly Windows-based network, the CIFS protocol works best. Your shared drives will show up as regular Windows shares, and any Linux client that wanders into your network can use a Samba client to connect to it. On a Linux-based network, the Network File System (NFS) is a better option—it's the native distributed file system for Unix- and Linux-based networks.

If you want your server to be accessible over the Internet, enable the FTP protocol as well, but do ensure that you disable **Anonymous Logins**. You'll also need to configure your router to send FTP requests to the server's IP address.

Beyond

At this point, you have a basic, working NAS server. You can now customise it—its name, the admin password and so on—under **System > General Setup**. You can even encrypt your disks for an added level of security.

When you're through, disable the console menu under **System > Advanced**, and disconnect your keyboard and monitor from the main server. To ensure that nobody removes your USB disk, you could get yourself a separate front-panel USB attachment, but instead of attaching it to your front panel, leave it loose. Connect the drive and then leave inside the system's cabinet.

Endnote

One of the disadvantages of FreeNAS is that its user management is somewhat rudimentary—it's either grant or deny. FreeNAS has none of the depth we're used to with regular operating systems. That aside, if you have old hardware that can't serve a better purpose and don't want to invest in a new server, FreeNAS is the perfect storage solution for your network. ☑

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Arnab Roy
GM - Marketing
Sun Microsystems India

“At Sun, the first step in being eco-responsible is the “greening” of our business, or minimising the environmental impact of our operations. We are determined to integrate eco principles into every aspect of our operations. We will implement a thin-client IT architecture, where processing takes place on the network. In all, Sun has facilities to significantly reduce both power and materials consumption. We are making data centres smaller and more energy-efficient so they will emit less carbon and cost less.

It is definitely feasible and absolutely necessary for others to take such steps. A joint effort by all the companies in the industry will go a long way in ensuring that the negative impact on our environment is minimised. Efforts by one or two corporates will have limited impact.

There has been recent research by IIT Delhi along with Sun India, and according to their recommendations, the Government should enforce energy conservation steps by IT communities such as tax incentives and guidelines that motivate computer professionals to purchase energy-efficient components, foster voluntary industry efforts to develop energy-efficient computing products, and engage in public / private partnerships that highlight the cost benefits of energy-efficient data centres.



COMPANIES

What are technology companies doing to be environment-friendly? Should the Government enforce policies on them to make them go along those lines?



Rahul Bedi
Director, Corporate Affairs
Intel South Asia and India
Business Operations
Manager

“Intel takes various steps to ensure environment-friendly computing. At our conference centre in Bangalore, we have motion detectors that switch off lights when no one has been in the room for more than ten minutes. We don’t have Desktop computers at Intel—laptops consume less electricity, which again is good for the environment. We have stringent e-disposal policies applicable at our offices the world over. Before we dispose of a computer, we see if it can be used in other departments. If it isn’t, we donate it to an NGO. If the computers are not working at all, we scrap them with a vendor who adheres to our stringent disposal policies.

Every corporation should have policies for environmentally-friendly computing: disregarding this will come back in the form of deteriorating employee health, increase in costs, and so on. Yes, there is an investment required, but it pays off in the long run.

The government should have policies pertaining to this, but organisations should follow environment-friendly practices regardless. In addition, making employees aware of the big picture of their actions helps more than dictating policies.”



Satish Kumar
CEO
GLOPORE IMS

“At GLOPORE, we avoid taking printouts for internal communication; even most of our outside communication is done through e-mail. At a higher level, we have communicated to our employees to switch off monitors when not in front of the computer; this helps us save electricity. Our systems at the office have LCD screens, which again contributes to saving electricity. We also prefer to give laptops to employees for this reason, besides the advantages of portability.

The monetary savings thanks to such practices aren't much, but we have not set them for monetary gain. It is our contribution to the society and the environment.

Other companies can replicate our conservation methods, and I think even minor changes in policy can bring about a huge difference.

We don't face any difficulty in enforcing these policies—employee awareness works well, and once employees develop these habits—such as switching off monitors and so on—they continue to implement them at home, too.

GOING GREEN



Vimal Khanna
General Manager (India)
NetXen

“We understand that conservation of electricity is important, and to reduce power consumption, we are moving to newer server systems. These new servers don't just consume less power; they easily handle the load of three older servers.

Employees have also been asked to switch off computers when leaving the office. We have separate air conditioning for each department, so if there are no employees in a section, the AC can be switched off.

It is quite feasible for businesses similar to ours to adopt policies like the ones we have. I believe small steps towards conservation by each organisation will make a huge impact on the environment.

I don't think the government should enforce policies for environment-friendly computing, but they should make recommendations.

It is not difficult to change the mindset of employees because they understand the implications of wastage.



Dr Y V Verma
Director - HR & MS
LGEIL

“At LG, our vision is to reduce energy costs by 20 per cent every year. We have set our ACs to run at 24 degrees Celsius, the “green temperature,” and this reduces electricity consumption. Wherever possible, we use natural lighting. There is a team to ensure that employees switch off all lights, ACs, laptops, and PCs. If they leave any devices on, a reminder note is put on their desks as well as on their team head's desk. At the factory, we have double-glazed windows that allow for maximum natural lighting. LG has also installed a solar water heater with a capacity of 5,000 litres. To reduce the running cost per day, we have brought about various innovations in the factory that have reduced resource intake by 50 - 70 per cent. A rainwater harvesting system has been installed for efficient use of water.

Other organisations should implement similar steps. It isn't just environment-friendly, it indirectly increases the brand image of the company and also motivates employees.

The Government should enforce implementable policies, and for some, they should make suggestions. The Government should also create awareness among industries.

It is difficult to enforce certain policies in the face of resentment—it took us four to five years to get to the stage we are at now.

As told to Prakash Ballakoor (prakash_ballakoor@thinkdigit.com)



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Generosity 2.0

Donating old computers not only reduces e-waste, it can also improve someone's life

Prakash Ballakoor

Advancements in hardware compel one to upgrade one's system every three years or so. When upgrading, what do most people do with their old PCs? Sell it for peanuts. Newer systems can be cheaper by 30 to 50 per cent than systems bought just a couple of years earlier, and can be twice as fast, thus forcing one to sell the old system at less than a fourth of the original price. For example, around two and half years ago, a Pentium IV 2.4 GHz with 512 MB of RAM cost Rs 28,000 to 32,000; now, you can get a Pentium Core Duo or Pentium D 2.8 GHz system for Rs 13,000 to 15,000.

Unhappy with what's being offered for the old system, some find it fit to dump it in the attic, happy in the knowledge that one still owns the system! Others just throw it away.

There's another option we rarely consider: donating computers to people who really need it. We're talking about unprivileged children and youths who would like to work at a computer and get to know what computers are all about, but for lack of money and knowledge, cannot do so. Apart from computer education, there happen to be other areas where organisations would appreciate the donation of a computer. You—like anyone else who has a computer—can help when the time comes to upgrade.

Education First

Cash-strapped NGOs are trying hard to procure systems. As Amita Chaurasia, who works as documentation in-charge at Pratham—a Mumbai-based NGO—says, "Computers excite children's fantasies, and have become a vital tool to attract underprivileged children to education." Echoing this, Imran Pathan (9), a student at Pratham, says, "My computer is really beautiful. I like it a lot. It has lots of games. I am a champion at *Gaddivali*." Imran is talking about games, but that's only the beginning. Having

realised the potential of computers in education, several NGOs such as Pratham (www.pratham.org), United Way of Mumbai (www.unitedwaymumbai.org), ChildLine India (www.childlineindia.org.in), Aarambh, and Hamara Foundation have introduced computers into their educational programs.

Pratham, initiated by UNICEF in 1994, is a community-based grassroots organisation that promotes the education of underprivileged children in India. This NGO, headquartered in Mumbai covers 21 states, with over a million children under its care. Pratham's programmes include "Computer Assisted Learning" in municipal primary schools, government assisted schools, and community centres in slums. Serving over 25,000 children under this programme, the computer provides a perfect tool to Play And Learn. Pratham has a software team that creates maths and language games in local languages. Nabbi Shaikh, 11, says, "My teacher teaches me new things on the computer. The computer has maths games which I learn and teach others. I want to be a computer teacher when I grow up."

IBM has donated four specially-designed computers at the drop-in centre at Baiganwadi in Mumbai in support of the programme. The

Baiganwadi area is close to the biggest "dumping ground" in Mumbai, where thousands of tons of garbage are generated. This is the home of many children. Pratham found it a big challenge to convince the children to bathe, rest, engage in recreation, and learn. They also found it tough to sustain the children's interest in reading and learning activities. With the advent of computers and interactive learning programs, Pratham was amazed how the children were eager to operate the machines. When the computers were installed, the children became adept at using the systems, especially the maths and language games.

Pratham says they have to date had more than 2,500 children availing this facility. Chaurasia says, "The need for computers exists in all our facilities, and there



Imaging Shrikrishna Patkar

Remember that computers in need of repair are more burden than gift

is huge shortage of good working computers." The NGO has 13 computer centres with 10 PCs each in Mumbai municipal schools, and three computer centres in Delhi municipal schools with six PCs each.

If you want to donate your old computer to Pratham, you can drop it at your local Pratham office, whose address can be found at www.pratham.org/contact/indian_inter.php. You can also call the local Pratham office, and they will pick up the system from your home.

Helping To Help

United Way of Mumbai is an NGO that accepts community investments from corporates, and from corporate employees on a monthly basis.

They focus on providing financial and other assistance to other NGOs who work in the field of child welfare, women empowerment, community development, and disaster relief. Under child welfare, United Way of Mumbai has a program called "Computer Pool," where one can donate old computers. This project was conceived to equip NGOs with computers in order to stay efficient and competitive: NGOs the world over are unable to get basic office equipment due to lack of funds—United Way of Mumbai is trying to address this.

Charu Jain, program manager, says, "The response to this program has been good, but during the initial stages, we were getting a lot of computers that didn't work and needed repair, which was expensive." They now

accept PCs only after reviewing its configuration: visit www.unitedwaymumbai.org/CompNGOs_Donate.asp to fill up the form. Donated computers are distributed to NGOs that have sent in requests for computers. United Way has donated computers to NGOs like Hamara, Aarambh and ChildLine India.

Helping Amidst Chaos

The ChildLine India Foundation, set up in 1996, is the country's first toll-free tele-helpline for street children in distress. It operates in 75 cities, and has responded to over 12 million calls from all over India. ChildLine uses computers to run software called ChildNET, which was developed by Tata Consultancy Services, to record and report distress calls. Since ChildLine only has one toll-free number, 1098, it receives thousand of calls a day; it is difficult to store and retrieve the data without a proper mechanism in place. Computers play a vital role in the process of analysis, storage, retrieval, and reporting. Nishit Kumar, incharge of Awareness and Advocacy, says, "The call analy-

sis that we generate contains city-wise reports of a number of cases of child abuse, missing children, child labour, sexual abuse, needed medical attention, and victims of natural calamities." This is then discussed with the local advisory board comprising decision-making authorities—like the city commissioner, the concerned ministers, state ministers, the judiciary, the police, NGOs, and the media of the city in question. Plans to address these problems are chalked out and corrective actions are implemented. One can get in touch with ChildLine India Foundation at [dial1098](tel:1098) at childlineindia.org.in or nishit@childlineindia.org.in.

Education Towards Employment

There are NGOs that cater to one locality or city; Aarambh, for example, helps with the educational and psychological needs of children who drop out of education in Navi Mumbai. Aarambh provides vocational training like screen printing, filing papers, making paper bags, and computer courses.

Aarambh conducts a basic three-month course for youth who have matriculated, and help them get further training with small offices and professionals. To date, they have trained over a hundred individuals. Shobha Murthy, founder and trustee of Aarambh, says, "Many offices employ young boys and girls as assistants for odd jobs like cleaning, and assure them their jobs would be upgraded in terms of salary and post once they have acquired basic computer knowledge. While some recently-matriculated trainees have opted for further studies, there are many who have taken up jobs. We think the future looks bright for these children." Aarambh has four computer training centres in the midst of the slums of Navi Mumbai, and all the 15 computers are old ones in working condition, donated by corporates and banks.

A computer can be donated to Aarambh by calling them at 022-27680965; they will pick it up from your doorstep. Better still, you could drop it off at one of their computer centres, which can be located at www.aarambh.org/Funding.html; this way, you can see your computer being set up in the centre and even used by the students.

Other NGOs that accept old computers include Samarthanam and Pratham in Mysore and Bangalore, Deepalaya in Delhi, and Azad India in Bihar. We'd like to encourage you to find one such NGO in your town or city.

A Concluding Note

One needs to remember, though, that old computers to be donated need to run a workable OS like Windows 98 or Windows XP. Computers that need repair also should not be donated; they are more of a burden than a gift. It would be a very good idea to get the system repaired by yourself first. Prof Asha of Hamara Foundation also tells us, "We don't want computer parts; it is expensive to get the rest of the parts and build a complete system." Go that extra mile and give something of value!

Wanting to help a social cause is a noble sentiment. We hope we've convinced you that donating your old computer is quite the best use you can put it to. You might not literally see how it is being used, but you can be sure it's changing the life of someone, somewhere. ☒

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Children getting their computing dose at Pratham



Navi Mumbai's Aarambh helps school drop-outs

LARA CROFT TOMB RAIDER™ ANNIVERSARY



OLD TOMB, NEW

After last year's *Legend*, our faith in the *Tomb Raider* franchise was restored—new developers Crystal Dynamics brought us a highly enjoyable, if short, action-packed adventure that still stayed true to *Tomb Raider*'s original puzzle-solving philosophy. This time round, they've resurrected the 10th Anniversary Edition of the game, abandoned last year by the previous developers. The game follows the same storyline as the very first *Tomb Raider*, but is built on *Legend*'s engine.

If you haven't played the first game (it was eleven years ago, after all), here's what you need to know: Lara's on the hunt for the Scion of Atlantis, a mysterious and powerful talisman (what else?), torn asunder with pieces scattered all over the world. Her quest will take her from Peru to Greece to Egypt to heaven-knows-where-else, she'll have to deal with plenty of unfriendly wildlife, smart-mouthed mercenaries, and race against another rival archaeologist in the pay of the devious Jacqueline Natla. Just another day at the office.

Legend-ised

Tomb Raider Anniversary (TRA) gives you the same, enjoyable gameplay as *Legend*—Lara's moves are fluid, and the control system lets you execute a series of moves quite quickly without fumbling. Her grappling hook is back, and is much better-utilised this time round. I've had a bunch of issues with the camera angles—most notably at times where you get the feeling you



Even the best fumble sometimes



Hmm...it's interesting what a *really* powerful sneeze can do

Rating: 7/10
Developer: Crystal Dynamics
Publisher: Eidos
Distributor: E-Xpress Interactive
Contact: sales@e-xpressindia.com
Price: Rs 699

di9itGAMING PC

XFX GeForce 8800Ultra;
Intel Core 2 Duo E6600; 4
GB RAM; Windows Vista
Ultimate x64; WD 250 GB

have to jump, but the camera hampers you from finding out where exactly you have to jump to.

The game's also riddled with checkpoints so you never really have to save your game, but this also has the potential to be an annoyance—if you backtrack, walk into a checkpoint and die, you end up undoing all the work you did before backtracking.

I liked the direction that *Legend* took the franchise in—more action made it a lot more entertaining—but TRA turns its focus strongly on puzzle-solving. The rare dose of action that you do get from the few enemies isn't much—they're freakishly dumb: bears who can't climb stairs, for example, and are quite content standing around while you perch on high ground and finish them off at your leisure. One nice touch is the Adrenaline Dodge, which lets you dodge charging enemies with a bullet-time effect, though you end up hardly using it due to reasons quoted in the previous sentences.

The environments are large—massive at times—and puzzles are spread out across them. This can get pretty confusing: you'll find yourself solving (or choosing not to solve) mini-puzzles only to realise much later that they were part of a much bigger picture. This can get pretty frustrating if you don't realise the big picture quickly enough, but is quite exhilarating when you have your Moment of Realisation.

TRA's huge environments lend themselves to a fairly boring feeling of solitude—you encounter other life forms very

rarely, and unlike in *Legend*, you don't have the banter between Croft and her assistants to keep you entertained. It's just you and the puzzles. It gets so boring that you'll soon want to befriend the odd wolf, if only the blasted creatures would stop trying to kill you.

The Croft Manor is back too, so when you're done with the game, you can spend some time in Lara's family home solving more puzzles and unlocking rewards—including cheats and new outfits for Lara.

TRA looks fetching, and it's a humungous joy that it'll run just fine even on my now-ancient NVIDIA 6600, but it doesn't seem to exploit newer, more powerful cards like we'd have expected it to—our monstrous 8800 Ultra seems wasted on it. Still, keeping in mind that there are many people who don't jump at the latest graphics card the second it comes out, you can enjoy the game without shelling out for new hardware.

Final Thoughts

TRA isn't as much fun as *Legend*—it sadly forsakes the action and intensity that we saw with the latter: one of the caveats of remaking an old game, I guess. The puzzles, however, are very well-designed, and while challenging, aren't especially tough—at no point did I find myself completely lost. It's also longer than *Legend*, so the fun doesn't have to end prematurely. Give it some well-deserved space on your Lara Croft shelf—if nothing else, it's miles ahead of the original.

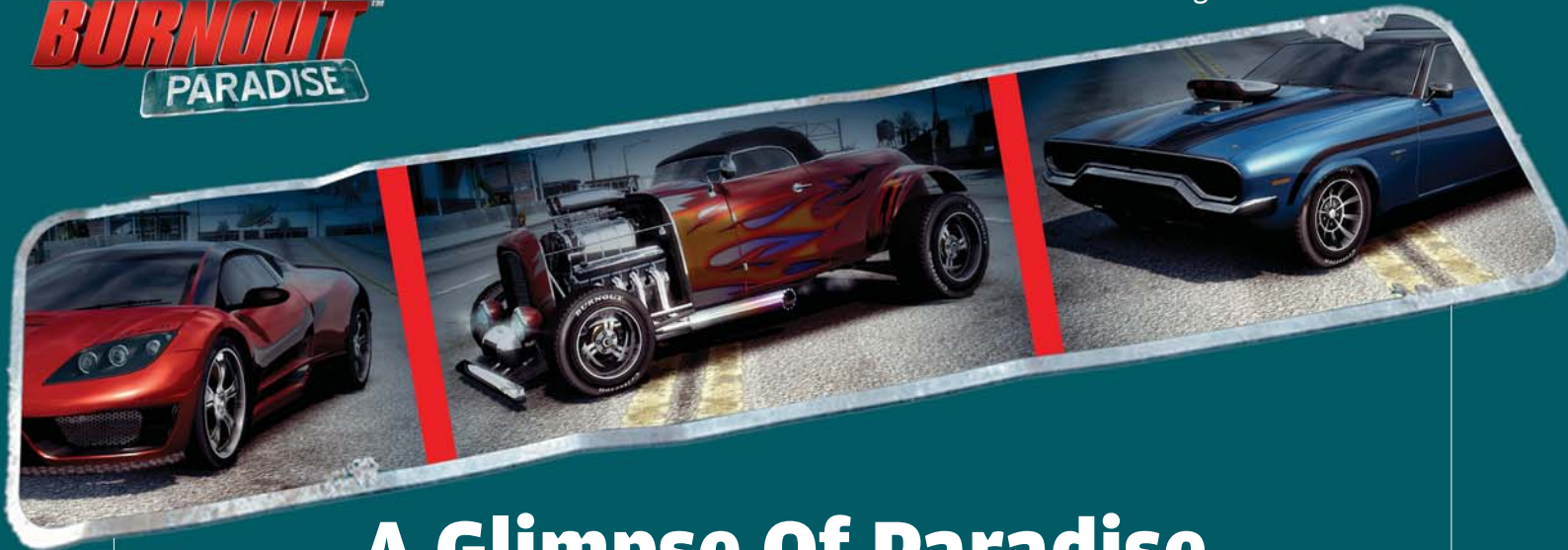
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All right...who hit the big red button on the time machine?



I may not have textures, but I'm still cooler than you



A Glimpse Of Paradise

Here at *Digit*, we've been quite happy with *Burnout: Revenge* and *Dominator*. Slamming rivals into walls and coming down on their heads from above never gets tired. Why, then, would Criterion even bother with a new title having already achieved its sadistic zenith?

We had us a little chat with Alex Ward, Creative Director at Criterion, to find out for ourselves. *Burnout: Paradise* will naturally be the best-looking game of the series, but it's the new features we can't wait for...

Some choice pickings:

On Paradise:

What we're out to achieve with the new game is to take the Burnout experience to a new place.

The main themes of this development centre around freedom and freedom to play Burnout however you would

like to. This is your Burnout at your pace. Now you are free to do whatever you want whenever you want to do it. We want to remove the restrictions of the old generation of hardware and break with many conventions.

Burnout: Paradise is the biggest open-world game EA has ever made, with everything open from the start; you can go anywhere and do anything from the get-go, and your first hour of play will be totally different from other players'.

I personally enjoyed playing the game *Mercenaries*, where I got a kick out of doing things I was not really supposed to be doing. *Burnout: Paradise* offers a similar sensation, exploring the city, playing with different types of cars, hanging with buddies, doing massive drifts, jumping from roof to roof—anything you can think of.

On The New Features:

Because *Burnout: Paradise* is a completely open world, there is no more jumping back and forth from menu to go into different race modes. There is no such thing as “modes” anymore—every “mode” is seamless, and an extension of your driving experience. The state of driving freely in the open world is called “Free Burn,” during which you can drive around exploring the city and discovering new areas and hidden gimmicks. At any time while Free-burning, you can choose to engage in various racing experiences:

Road Rules

Each road has a set of best records for who drove fastest and who caused the biggest crash—beat your friends' scores to rule the road!

Race

Each traffic light in the game represents a different game, and you can choose (or not) to participate in any race with absolutely no loading time.

Crash

We re-invented this experience so you can go into crashes with a push of a button at anytime, anywhere. This new crash experience is called *Show Time*. The objective of Show Time is to time your crash so you can keep flying and move forward, while crashing your car into a pulp—the distance you can travel while crashing will determine your score.



Alex Ward
Creative Director, Criterion

Marked Man And Payback

When playing with multiple players online, you can decide to “mark” certain player and go after him together. Taking down a “marked” player will let you earn a special trophy as a collectible item.

To be fair to the marked man, we offer these players a chance for a comeback by giving them a special ability called “Payback.” These randomly-chosen abilities include pulling stunts on other players like reversing their controls, taking away their breaks and boosts, and such—just fun gimmicks to allow players to have fun messing with each other.

Watch these pages for our review when the game is released for the PS3 and Xbox 360 in November this year!

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Rating: 8/10 Developer: Codemasters, Publisher: Codemasters,
Distributor: E-xpress Interactive,
E-mail: sales@e-xpressindia.com,

The Road Less Travelled

Colin McRae: *DiRT* is undoubtedly one of the best-looking car games for the PC. Unlike other racing titles, this one has nothing to do with story-lines, creating mansions, or playing fairy godmother in a fantasy world. *DiRT* is the latest and probably the most anticipated of all the Colin McRae Rally releases. It's one that's come out on gaming consoles alongside the PC.

The entire game is based around tiers or levels. You make your way to the end of the game by scoring points on a tier through races, time trials, or super specials. The reason I'll be using the term "vehicle" is that *DiRT* isn't only cars—there are buggies and trucks, too, which takes the game to an all-new level! In fact, there are 13 classes of vehicles: FWD, RWD, 4WD, Classics, and more. You go through plenty of tiers and levels before you finish the game. When you do complete them you can dive straight into the multi-player game on the Internet or on a local network.

The handling of the cars and trucks differs a lot from one to the other. The slower cars, like the Fiat Punto, are extremely difficult when you first try them.

They react aggressively to tiny inputs, which results in you swinging from side to side hitting guardrails even on a straight road. This coupled with wet roads means you've really had it... The trucks and buggies have a rather unique, sim-like feel.

DiRT isn't an easy game to start with even at the Rookie level. The damage levels and AI difficulty increases as you go up the levels. It takes a while before you can hold the cars by the scruff of the neck and throw them around the place.

Looks-wise, *DiRT* is fantastic. The models are well-detailed, and this can be noticed when you scrape your vehicle on rocks alongside the track or into walls, which results in shedding of panels of your vehicle and exposing of the insides. Fallen pieces of mangled metal and other wreckage you and other players cause lie scattered all around the track. It can become an obstacle course at times—you need to be careful not to run over them while making a second round through the track. Dents and folds on the metal appear when you bang your vehicle onto something a little more solid. The sensation of holes being pieced into my retina was proof enough that the HDR effect was being shamelessly abused in *DiRT*.

It's really bright and distracting when it's really sunny in-game. The tracks are unique and pretty long as well, which adds some amount of the authenticity of rally car racing.

There's even the legendary Pikes Peak track!

We substituted our temporarily indisposed 8800 Ultra with a GeForce 7900GTX on our gaming rig for this—the game will make any machine beg for mercy—frame rates at 1440 x 900 were nothing more than 20 fps with the quality turned all the way up, but without any multisampling.

There are some nice details in the sounds: the turbo whine gets louder as the rpm reaches the peak. Drive under a bridge or along narrow streets and you immediately get the audio feedback from the change in ambient environmental sounds.

DiRT isn't perfect by any means. Many of the cars have very odd handling, and the game doesn't seem to have been optimised enough. Once upon a time, the Colin McRae series was considered the ultimate rally simulation. Ever since Richard Burns Rally arrived in the second half of 2004 and took over CMR's place, it hasn't been dethroned from its perch, and we're sad to announce it still fails. This isn't necessarily a bad thing for *DiRT*: it's is great, and can be really good fun once you get the hang of it. I'm sure the ecstatic crowd of drooling gamers and non-gamers gathered behind me waiting for their turn will agree with me with thumps on the table.

rossi_fernandes@thinkdigit.com



digit GAMING PC

XFX GeForce 8800Ultra,
Intel Core 2 Duo E6600, 4
GB RAM, Windows Vista
Ultimate x64, WD 250 GB



NOT MUCH OF A REVOLUTION



CellFactor: Revolution is a long-awaited game that its developers insist is best played with a physics processing card, so we got ourselves an ASUS Ageia PhysX card. The game is totally free—but unless you own a PhysX card, you can only play a couple of missions. Find the game on this month's DVD.

CellFactor lets you choose from three different races—Black-op, Guardian, or Bishop (for any of the single-player campaigns or the multiplayer modes). Each of the races has special capabilities: for example, the Bishop can fly and throw things around, but has no weapons at all. There are a few special moves: the Guardian, for example, can

shoot off a couple of hundred feet and then shoot from up there while falling down. He also has two different weapons in each hand. There are a couple of vehicles and mechanical warriors to move you around the maps. While the buggy may be some fun, the mech warrior is way too slow to reach the action before it ends.

Alas, the game has no storyline whatsoever. It's a line-up of single skirmish missions on different maps against AI bots. Each level you win, another is unlocked—almost always as disappointing as the previous.

Some levels, however, are better looking and more fun, especially the more open ones. The indoor maps are cramped with too many objects trying to

take advantage of the PPU. This excess of objects gets in the way while you're going through the maps. You end up pushing away all sorts of debris and barrels. There are just five levels, so expect to be bored out of your mind real soon... To add to the disappointment, you only get four guns!

The use of physics in the game is the core strength of *CellFactor*. The game engine along the physics processing card allows huge numbers of objects of all sizes and shapes to react with each other like in real life, in real-time. But in-game, you have huge, heavy, metal objects floating around and bouncing off walls like gas balls, which is just plain silly.

It's a letdown when the game has the ability to do so much but it's all done so badly. You can use your powers to levitate objects and hurl them around the place—and at enemies. The interaction between the large numbers of objects is sort of interesting to see, but nothing special—*Half-Life 2* had it with the gravity gun, too. Here, the novelty fades away rather quickly.

The game supports HDR and per-pixel motion blurring, which gives it the look of a modern game. The models and textures aren't too detailed, and the levels are tasteless and lack identity. They're filled with neatly-stacked boxes lying around begging you to throw them around—and that's about it.

The sounds lack punch. The voices in-game, especially in the CTF modes, are retarded. Your team-mate keeps yelling in an awkward kind of way like the folks from *300*. The music isn't any better either.

Our machine—a Core 2 Duo E6700, 2 GB of RAM, and a GeForce 8800GTX only managed 30 to 45 fps at 1280 x 1024 with HDR and Motion Blur on. The PPU might have helped elevate the performance a bit, but it's still far from being a well-performing game. Nor is it a good-looking one. Loading stages takes a while as well. Yes, the list goes on.

After playing this game a fair bit and getting excited a couple of times, I realise I've only had my spirits raised and then smashed into the ground. I'm left confused and pondering over the point of all this. And after some soul-searching, I have to say *CellFactor* feels more like a tech demo than a game. It isn't anywhere close to exciting.

If you were planning on buying a physics card just to play *CellFactor*, don't bother. This game's only saving grace is its fairly decent looks and the semi-cool physics effects, and that's the only reason I'm giving it a 5—and maybe because it's free.

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Rating: 5/10, Developer: Artificial Studios, Timeline Interactive, Immersion Games, Publisher: SouthPeak

digit GAMING PC

XFX GeForce 8800GTX, Intel Core 2 Duo E6700, 2GB RAM, Windows XP Professional, Hitachi 250 GB HDD



Woz Stands In Line!

The iPhone, like the Grim Reaper, is a great leveller. Steve Wozniak, the iconic co-founder of Apple, was spotted with ordinary folks outside an Apple store—that's no typo—waiting his turn for an iPhone. (because he'd have to wait for his complimentary phone!)



Google Cash-strapped

Now this one tickled us no end: when we last checked, Google was sitting on, oh, billions of dollars in profits. Even so, one blogger was issued a cheque—which bounced—for AdSense earnings. And he told all. (Probably kept and framed the cheque, actually.)



Escape

SPEED DEMONESS

Granny Has Fastest Internet

A lucky few of us in India are rejoicing over our new, fast 2 Mbps Internet connections. Yes, those of us who do have such speeds at home—especially the rich few who even have it unlimited—look down upon the hoi polloi. We even wear T-shirts that say “2M. Eat that, 56K.”

Sigbritt Löthberg, a 75-year-old granny in Sweden would kindly approve. She just got a 40 Gbps connection.

Wait. Did we write that right? Yes, we did, and we hope you read that right, too. It's about 20,000 times faster than 2 Mbps, and 6 lakh 40 thousand times faster than dial-up. OK, we can't have made typos writing all that out.

Interesting how such news spreads with such rapidity over the fibres, as it were... Löthberg's home connection happens to be the fastest residential

Internet connection on the planet. (So OK, our jaws needn't drop any further.)

Löthberg can download a full-length dual-layer DVD in two seconds, or watch 1,500 HDTV channels streamed simultaneously. So how did she land up with this kind of whatever-you-may-call-it speeds? Well, it pays to have a son who happens to be one of the leading authorities on the theory of fibre optics.

What puts the steam into the lightning-fast connection (sorry, mixed metaphor) is a new data modulation technique that allows direct transfers between two routers that can be as far as 2000 km apart, without any intermediary nodes. (The distance between the routers can theoretically be unlimited.)

It's time to reveal the hardest part-to-digest of the story—(wails of pain here)—the hardest part of getting

the connection to work was the installation of Windows on the ancient computer Löthberg uses. And she uses it rarely, we hear.

With that revealed, let's see what Löthberg might do with her connection, in increasing order of horror:

- ❑ Download Windows updates
- ❑ Chat with relatives abroad
- ❑ Play Yahoo! Games with jovial granny-friends right in Sweden
- ❑ Search for recipes online...

Friends, philosophical resignation is the only solace. Hawking was right. Life isn't fair.

GRAND SLOTH

When Gamers Go Bad

Teenagers with no social lives who spend hours upon hours in a dark room, shut off from the rest of the world,

Whatever Happened To...

Interactive Movies

Back around 1998, some bright folks came up with the idea that movies should start getting *interactive*, that audiences in movie theatres and at home should get the option of choosing which way the movie would progress. Should the actor kiss his leading lady? Should the lady in question swoon or slap the man? The way the story flowed would be in the hands of the viewer.

Interactive movies were proposed to work on the principle that audiences in theatres would be given a four-button remote-control-like device, and that key twists in the plot would be decided by a real-time poll in the theatre. The movie would progress in the direction of the option with the most votes. Producers thought getting to a popular conclusion would keep everyone happy...

The idea never caught on (we sort of knew back then it wouldn't). Producers quickly realised they would have to shoot many more reels of film to accommodate the different twists and turns; conducting a poll while the movie was on could have been a tad irritating. You don't want to be asked if Salman Khan should take off his shirt!

Still, thanks to higher bandwidths and ever-falling production rates, interactive movies have taken to the Internet. A site catering to this whim, if you do feel compelled, is www.interactive-film.com.

Win! My Desktop

Sandip Dev from Nagaon confused us a bit with his desktop—it looks like a crazy mix of Vista and Mac OS X, but it's really Ubuntu.

How he did it:

The top panel: Use GIMP to create a silver gradient background of 24 pixels height and width equal to desktop horizontal resolution. Blacken some of the pixels from the corners to give a rounded look

The Apple logo: Get the Apple logo from the Net and convert it to .svg. Name it start-here.svg and copy it to /usr/share/icons/Ubuntu/scalable/places as root(gksudo)

For the Volume meter, CPU meter, Battery Meter, Inbox and Calendar, use gdesklets

Participate in this contest and win next month

Mastering Maya 8.5

by John Kundert-Gibbs

Published by **WILEY-INDIA**



Send us your desktop with a description of how you made it to mydesktop@thinkdigit.com with the subject “My Desktop”, and tell us your postal address, too.

DigiPick of the month

1 GB—Lest I forget!



Last month's winner:

Sankalp khanna

Amritsar.

Participate and
win next month:

**Beginning
Access 2007
VBA**

by Denise Gosnell



Published by

WILEY-INDIA

WIN!

Send in your entry and you could win an exciting gift 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 "**DigiPick**" in the subject line, mentioning your postal address, **on or before the 20th of this month** to digipick@thinkdigit.com. One prize-winning picture will be published each month.

play games. And bachelors with a history of failed relationships (and who aren't getting laid anytime soon). Right? Well, think again. Turns out even "responsible" couples with babies (!) can behave like spoilt teens when it comes to games.

This is from Reno, Nevada (where else could this happen but in the US?). A couple, Michael and Iana Straw, were fanatic gamers. They spent most of their time online, playing games like *Dungeons and Dragons*. The immersive environment of these massively multiplayer games was too immersive for them. So they forgot they had two babies. They played and played, the babies (must have) bawled and bawled, and the couple played and played, and you get the idea, that no food went into the babies' mouths. When social workers turned up to check on the kids, they found them sick and severely malnourished.

The Straws had clearly crossed the fine line that separates passion from madness.

They didn't have steady jobs, but the mister had \$50,000 as inheritance. And no prizes for guessing what he did with it: splurged it on computers and a large-screen plasma TV, ostensibly to improve the gaming experience (!)

The couple have pleaded guilty to charges of child neglect, and will face trial. The babies, meanwhile, are in foster care and doing well. (Umm, virtual Columbine killers later on in life, perhaps?)

MYSTERIOUS MISCHIEF

Defending The Asses

If you were looking to (cough) download some movies from the (cough) Internet and innocently visit www.P2P.net, it will redirect you to www.TorrentFreak.com, a well-known BitTorrent news site. So what's the deal? Time for a little history lesson, and we'll try hard not to bore you. (Read: "Please Read.")

A company called MediaDefender, paying

filthy amounts of \$\$\$, bought P2P.net. This company happens to have been hired by the likes of the Recording Industry Ass. of America (the ill-famed RIAA) and the Motion Picture Ass. of America (the equally ill-famed MPAA) to find and report people who use BitTorrent and P2P to download copyrighted content. (Read: "People who download.") In the past, MediaDefender has resorted to launching fake video uploading sites, and setting up fake torrent trackers that record and log user's IP addresses. MediaDefender also regularly uploads fake torrent sites on popular BitTorrent sites to collect details of the happy-go-lucky folks who download the torrent files. Such conduct has enraged the P2P community (Read: "The people"), with site admins offering to help each other remove the MediaDefender menace from their sites.

Against the backdrop of this tense scenario, when P2P.net was launched, someone did a WHOIS on the domain name and found "MediaDefender."

People Who Changed Computing

The Face Behind The Screen



James Fergason

LCD monitors are pretty, and it's been a long, long journey from the time of the LCD displays in

watches and such. Thank James Fergason, the man who improved the LCD and kicked off the now-multi-billion-dollar LCD market.

Fergason did not discover liquid crystals; what he did discover was how to use them the correct way. Prior to his work, LCDs used too much power, had limited life, and poor visual contrast.

Born to a middle-class American family, he attended a one-room school. He grew up reading science books and admiring his brothers who had degrees in engineering. His grandfather was a child prodigy who graduated at age 15. With such role models around him, Fergason decided that he should invent something...

Graduating from Missouri University in 1956 with a degree in physics, he joined Westinghouse Research Laboratories. There he studied liquid crystals—his passion—and thought up the first practical way to use them. The first commercial use of LCDs came in quartz watches. Fergason went on to create his own company to manufacture displays.

The man's latest invention includes safety eyewear whose liquid crystals become opaque instantly when hit by intense radiation like lasers, thus protecting the eyes.

He received the Lemelson-MIT Prize, considered the "Oscar for Inventors." Now who'd think liquid crystals were something to be passionate about?

Bluff

YOUR WAY THROUGH

Image Editing

The whole point of a digital camera is to just point and take pictures, right? Who needs to know about all those fancy adjustments you can make? But if you want to sound like the know-it-all pro of digital image editing... read on.

Hue: One of the main colour attributes—apart from the “lightness” and “colourfulness”—of an image, hue is associated with the colours red and yellow: when the hue is edited, it’s like putting a film of coloured plastic over the image.

Saturation: Defined by the intensity of colour. When it is high, colours appear vivid and vibrant; when it is low, the colours take on a darker tone. If it’s too high, the image becomes “vibrant” in a psychedelic way.

Brightness: The amount of light given off by an object. Brightness is subjective: it depends on the eyes’ sensitivity to light.

Luminance: The *measurable* component of brightness. So the luminance of a bulb is the same whether it’s measured from three or 12 meters away.

Contrast: A combination of colour and brightness (woe!), contrast refers to the visual details of an image that distinguish objects in the foreground from those in the background. If an image has a lot of detail but with low lighting, increasing the contrast will improve it.

Usage: So I got this shot of a King Cobra, hood raised—right in front of me! No, really! But you couldn’t see the spots, so I tweaked the *contrast*—and I had to increase the *brightness*. Actually, the *luminance* was what needed adjustment, and the *saturation*, too—those colours! It’s got a yellowish *hue*, which I’m not touching.

Wild Wild Web

How Do Yer Do?

As fate would have it, we Astumbled upon www.rinkworks.com/dialect. And so now, we’re talking in Redneck, Pig Latin, and other such exotic dialects. Look what th’ Web hath wrought upon us: we can nae speak in homely tongue no more.

Go to that thar page and type in yer sentence. Choose yer dialect. Click the “Dialectize” button and ooh la la—th’ language of HM the Queen of Engeland you typed in has magickally mutated!

Bloody useful eh, this site? To morph an entire Web page, type in yon URL and get a dialectised view. If th’ site hath links, clicking them links will

fetch ye th’ morphed versions. Ye can now speak in Redneck (good, y’all), Jive (wassat?), Cockney (‘ow’s ‘at?), Elmer Fudd and H4x0r. (That thar last one fer ye non-techies is “hacker.” Arrr!)

Lots In A Name?

The Bard might not quite have approved, but names are worth millions on the Web. We also have a breed of hangers-on, whom the media refers to by the fancy-sounding “cyber-squatters”. But you know all that, and we’re digressing: this is not about cyber-squatters and their run-ins.

Having too much time to kill and prone as we are to

goofing off, we looked up the weirdest domain names we could find. www.mp3shits.com (get it?) is a place to go to if you want some “free” MP3s (chuckle, chuckle!).

www.whorepresents.com (wink, wink!) is a listing of contact numbers of actors and their agents. Then again, look at these gems: www.ba.be, www.glo.be, www.killbillsbrowser.com (some folks just hate IE, you know), and www.therapistfinder.com (in case you need a marital counsellor). But our site name of choice is www.losemoney-now.biz, up for sale now. Just in case you’re in the business (duh!) of losing money.

This was, as you just might have figured, reported all over the blogosphere, and quickly made it to the front pages of popular social news sites. After that, the WHOIS information for the site has been changed. P2P.net now redirects to the popular BitTorrent news site, which is full of muck about MediaDefender.

Surprisingly, the page is moderated, and there are no dirty words there.

So why did MediaDefender buy the grossly expensive P2P.net? And then decide to redirect it to TorrentFreak? It’s all twisted, warped, topsyturvy and what not, all this business about the domain name and the two Ass.es. And guess what’s on the redirected page right now? As in the comments? Here’s one: “When a digital file is illegally downloaded, NOTHING is taken. It’s copyright infringement, not theft. No matter what the smacktards in the entertainment industry would have you believe.” Ah, the same, the same, even more of the same. (Except for “smacktard,” which we’ve now learnt is a bad word meaning “retard.”) Please, please

find the February 2007 issue of *Digit* somewhere and read up on the whole P2P thing.

I'M FEELING QUIRKY

Have Net, Will Google

Most people key in search strings in a search engine when they start their amblings online. And some of these strings are weird, as you know. But some are way too weird, and looking at them makes you wonder what the users were thinking. (As in, if you’re *all* that bored, why not just Google

“sex” and get virtually laid?) Here’s a sample from a couple of blogs we found dedicated to the tracking of search behaviour that warrants urgent medical attention. Don’t say we didn’t warn you.

1. Half dog half cat
2. How to make animated movies like happy feet
3. Breed of cat in James Bond movies.
4. Haiku of Elvis Presley
5. How to make submarine with pop bottle
6. My husband wears my clothes
7. Why is my husband a jerk

A butterfly can cause a hurricane, and those folks might be reading it, so let’s tell them what Google can’t:

1. It’s going to be a bloody freak of nature. Period.
2. Feet are happy when you soak them in hot water.
3. If you care, you have no life.
4. Try one yourself if you’re so much of a fan!
5. Go back to school.
6. Eek! Period.
7. Because you don’t give him enough sex. Talking about sex, guess what: according



Illustration Harsho Mohan Chatteraj

to Google Trends, Indians topped the list for keywords like “pornography” and “sex.” Yes, the land of the Kama Sutra and being sex-starved and all... and we don’t need to repeat all that.

THE FOX SPREADS ITS WINGS

“What’s Internet Explorer?”

We cannot be sure if some—maybe just some—Microsoft workers use Firefox at home, but if you’re a loyal one, you wouldn’t. And your sense of pride of the world-domination would take a beating if you someone—in fact, any computer user in the world—were to ask you, “What’s Internet Explorer?”

Perhaps that’s why UK blogger and avid Firefox fan Danny Sullivan spread the news that his son had asked him that question. To deflate at least some MS egos.

Sullivan, we hear, succeeded in persuading his wife to drop the big

Malice

If you’ve ever been in these offices at the high-stress time of issue closing, you soon understand why it’s necessary to spew a little venom at the unsuspecting human beings that dare cross your path. It’s therapeutic, they say, and feels good (not to the spew-ee, obviously, but you can’t have everything).

The most deadly woe-causing force in these parts has to be Ajay—our resident BOFH (look it up, why don’t you). Somehow, our servers get lonely while he’s gone, and wantonly turn themselves off. Unbeknownst to our moody servers, poor Pillaiji loses a few strands of hair—“Aiyyo error!” (I/O Error. Get it? Heh, heh).

Adding to Pillaiji’s already mounting terror is The Browne Stain, who promptly decided to

fall ill the day he was supposed to clear his article before it went to print.

Going further down the halls, we find SKOAR!’s ed Badri (None shall be spared! Yarrrrr!) dancing away to—cue dropped jaws here—the latest Bollywood tunes! Not in reality, though—we wouldn’t have survived the shock—but he’s found joy in a new multiplayer dance game. The shocking truth...

In other news, we’ve got us a new ~~minion~~ writer—young Bhaskar Sarma. He’s bald—shinier than our reigning billiard ball, Raaabo, even. By choice. Really. He could grow his hair back if he felt like it. Don’t let Raaabo find out.

We shan’t bitch about the ed here; you don’t spew at people who pay you.

Well, not in public.

DIGIT DIARY

blue E. Apparently, it had sometimes crashed on her. So the missus moved over to Firefox full-time. And since hers is the hand that had rocked the cradle, the kids took the Firefox path as well (after they were out of the cradle, at any rate), and soon the whole family was hooked.

The aforementioned question came up when Sullivan’s eight-year-old son wanted to browse the

Net and his preferred browser wouldn’t work. (OK, Opera fans, time to gloat.) But Sullivan is no Opera fan, and he didn’t have it installed, it seems—so he suggested the kid to use IE instead.

Surprise probably ensued when his son replied asking, “Internet Explorer? What’s that?” Sullivan has said on the Web that his son has access to the Internet from school,

but he doesn’t know what browser they use there. Clearly, it’s not IE.

And that’s that. We just wanted to tell you a story pointing to the rising popularity of Firefox instead of one of those news items that go, “Firefox use in Bamako up by 2.3% in June 2007 from the corresponding figure for January! Now go to Mozilla.org.(Mali’s Internet code) and buy a T-shirt!” ☒

Blog WATCH

Has the iPhone and related news been flogged to death? Bloggers don’t seem to think so. And Intel getting onto the OLPC thing... who would think?

Frank Hayes

www.computerworld.com/blogs/node/5864

Firefox fixed—now it’s Microsoft’s turn

Seven days after a zero-day vulnerability surfaced that involves both Internet Explorer and Firefox, the developers at Mozilla have released a patch. Microsoft, for its part, says the security hole in IE is a feature, not a bug.

For a week after the problem surfaced, security pundits were taking sides to pin the blame on either Firefox or IE... So now, a week later, Firefox has issued its patch. The IE/Firefox security hole is closed—on the Firefox end...

Lisa Vaas

<http://apple-iphone-news-articles.blogspot.com/2007/07/hackers-close-to-cracking-iphone.html> (<http://tinyurl.com/2rhpxj>)

Hackers close to Cracking iPhone

iPhone hackers are on the cusp of not only being able to write programs for the phone but also finding a way to cut the device’s tether to Cingular’s service plans...

One of the first iPhone hacks came from Jon Lech Johansen, aka DVD Jon. A self-trained Norwegian software engineer, Johansen on July 3 announced on his blog that he had hacked a new, unactivated

iPhone, managing to activate it without turning on AT&T Cingular phone service. But although Johansen managed to get the iPod and Wi-Fi capabilities of an iPhone turned on with his hack, he couldn’t get the device to work as a phone...

There are reasons why unlocking an iPhone is a bad idea, however...

Frank Hayes

www.computerworld.com/blogs/node/5847

Intel folds on OLPC

Everyone is being polite about Intel’s decision to join the OLPC consortium... Intel has been pouring insults at the OLPC ever since MIT’s Nicholas Negroponte started the project. On the surface, that made no sense: Nobody was going to use one of these little ruggedized PCs in competition with the high-end laptops that Intel made CPUs for, so the most reasonable position for an unsupportive Intel would be to sit smugly by.

But Intel didn’t do that. Intel honcho Craig Barrett went out of his way to trash-talk the OLPC machine. Even when it turned out Intel was working on its own cheap student PC, the Classmate... Intel’s Classmate finally hit the streets in March. Apparently it didn’t take the Third World by storm. And now, four months later, Intel has decided that maybe this OLPC crowd has a good idea after all.



Here's Where The Action Is

I just wanted to share a little thought with fellow *Digit* magazine readers. My thoughts are intended as follows: I'm trying to be as precise in expressing myself as possible. I hope you like my idea and publish this e-mail to make readers aware of the Granular Linux Project. In the initial days of my experimentation with Linux, it delighted me, enlightened me, to an extent that I eventually ended up creating a distribution.

About eight months ago, Granular Linux began its journey under the Granular Project. In due course of time, Team Granular has grown from a single member to a small team of six to seven members from across the globe.

Based on PCLinuxOS, this distribution has always been touted as the "distro for newbies." Although nowadays we have a lot of distros that are very easy to use including Ubuntu, Mandriva, and PCLOS, these have some things that give them a bit of geeky feel, which we intend to do away with in Granular. It's the endeavour of Team Granular to make it the easiest-to-use distro on the planet. This is not possible through a very small team. Granular is intended to be completely community-oriented. Development within a community is fast; a community understands the needs of others better, support from the community is best, and moreover, a community helps others grow and learn fast.

With this ideology in mind, I urge the Indian talent to come ahead and form a community that would fulfil the goals set for Granular and also make India proud by giving the world's first-ever community-based native Indian distro free of cost. This is in the spirit of the open source revolution that other countries already support. Why just be a part of the revolution—why not create one?

For more information, please check

out www.granularproject.org. Granular on DistroWatch: www.dirstrowatch.com/granular.

Anurag Bhandari

Dear Anurag

Congratulations on your efforts thus far. I can only encourage you; what you are proposing sounds exciting to say the least. And the least I can do is publish this as the first letter in this section of the magazine.

Considering our reach, I believe you will get more than a few responses. Do keep me updated on what's going on, and whether we made a difference.

— Executive Editor

The Best Ever...?

Dear Team Digit,

Let me first ask you a question. Was last month's issue the best *Digit* ever published? I think it really was. But let me thank you for also publishing the *Fast Track to Apple*. You fulfilled a long-term request of mine there.

The whole magazine was indeed a masterpiece. I'll compare it to the Linux kernel, which is the greatest masterpiece. Like the Linux kernel, the magazine was indeed valid for all the platforms. You didn't miss Linux, you didn't miss Mac, you didn't miss Vista, and, of course, you didn't miss XP. It was also nice to see *Tips & Tricks* on Linux and torrents.

The laptop test was quite impressive. But instead of categorising them into the lifestyle etc. sections, I suggest you sort them into price-wise sections the next time you do a shoot-out. One thing I don't understand is, why didn't you feature Macbooks in the laptop test? The Macbook model could have been included in the home series, and the Macbook Pros would be in the Performance segment. You could have even tested them by loading Windows XP or Vista on them via the Boot Camp utility.

Reading the history of Apple was quite interesting. But the thing that stood out was the operating system Mac OS X. The coverage of the iPhone was exhaustive. Did you really get your hands on the iPhone?

I used to save Web pages from the Apple site on my computer to read them again and again. But even those Web pages could not provide me with the information this little book did.

A big thank you for providing us with the Fedora 7 distribution. I was really in need of Fedora as I'm preparing for my

RHCE certification. Hey... wait a minute... why don't you guys publish a little article on the scopes of various certifications in the IT field? What are the scopes for our careers if we undergo MCSE, RHCE, CNE, etc. courses? It would be of great help to your young readers (which are the majority of your readers) and also to the retired citizens, who would like to do more after retiring from their jobs.

Thanking you in anticipation!

Tarun Brari

Hi Tarun,

It's good to see you writing to us after you submitted an article for our *Sixth Sense* issue. You really seem to be an avid reader. Let me answer a couple of your questions—first, about our laptop categorisations: I do of course know India is a price-sensitive market, but if a reader is to look only at price, he would tend to miss out on the usability factor—which, in my opinion, is paramount. About Macbooks, the two-pronged answer is that (a) they are expensive, so not too many readers would be interested; (b) not too many readers are comfortable with non-Windows OSes—yet; we have tried to rectify this situation via our *Fast Track*; (c) Macs are in a class of their own, and would not blend well in a comparison test; and (d) the few who do know and love Macs do not really need benchmarks—they already know what Mac to buy!

We really did get our hands on an iPhone, and finally, yes, we intend to publish an article on certifications—or something along those lines—soon.

— Executive Editor

Die, Pirates!

I live in New Delhi which is the heart of India. And the heart of Delhi is Connaught Place, which is the centre of piracy. In Palika Bazaar, every shop vender offers pirated CDs without any fear. I have a genuine version of XP which is costly, but there I found I can get it for as low as Rs 60 without any bargains. I think companies like Microsoft, Adobe, Corel, and Autodesk are not worried about piracy because everyone knows that pirated CDs are available there; don't these companies know these facts?

I think piracy can only be stopped after lowering the prices of genuine software, which as far as I know, seems impossible. The only light I can see are the movies which have started to retail at as low as Rs 39, and open source software like VLC Media Player.

Akash Yadav
New Delhi

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

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Inbox

LETTER
OF THE
MONTH

Dear Akash

Delhi is not the heart of India; it is Bombay—to use the name we know and love! OK, I was just kidding... getting serious, you're right in saying about piracy that though a seemingly plausible way out would be to lower prices, it is not possible for the big companies. And as for the companies not knowing these facts, our insight regarding this—rather, Agent 001's insight—has been published in an earlier issue. It's called, simply, *Is Piracy Good?* Do take a read.

Open source software is a good way to go, and you've probably noticed how much we focus on such software these days.

— Executive Editor

Disgruntled, And Rightfully

I have received one CD with a plastic protection sheet tightly fixed to the CD. After removing the plastic protection sheet (which is normally there in any CD box at the bottom), I inserted the CD in the drive and it was not recognised. I have already sent you a message in this regard.

The customer service does not give a reply whether it is for subscription renewal or for the status of subscription cheque or for a missing magazine or for any subscription scheme.

Even if the subscriber receives a reply, it will contain a message saying that every day they receive hundreds / thousands / lakhs / billions of messages.

As far as I know, the subscriber need not worry about the volume of messages received by a magazine every day; the magazine has to take measures to handle it. I now hope I will receive a reply for replacement of the damaged July 2007 CD.

A M Sameeullah

Dear Mr Sameeullah,
I agree: replying to your mails is our responsibility—hence, even if late, we need to reply them. I am personally arranging to send you a working July CD.

Please bear with us for a week on this. Thanks for writing to us and sharing your frank opinion.

— Executive Editor

Computers Or Cleavage?

Being a mechanical engineer, my only touch with technology is through *Digit*, to which I'm subscribed since the past few years. I've been wanting to mail *Digit* from quite some time now, but one thing or the other came up. I bought my cell and a new PC recently based on your suggestions. But the July edition just made me sit and type.

I've been used to seeing *Digit* as a hardcore technology magazine with no-nonsense stuff and no distractions; needless to say, the cover left me with a pleasant feeling at the same time surprising me. I know it's not the first time you have a woman on your cover, but this time it looked more like a film magazine. I'm used to seeing the cleavages of hardware that you normally show so generously, but I just wondered why on earth would a technology magazine have such a picture on its cover.

What was she posing with? Laptop? Cell phone? ...Let me check the cover of the issue again.

Navin D'Cunha
Thane

Dear Navin,
I'll respond to your comments about the cover.

First, being a hard-core tech magazine does not preclude a cover of the type you're talking about. One might be an alpha-geek or gamer, and he might still wear a plain yellow shirt—he doesn't necessarily wear a T-shirt with a motherboard on it (which he could), or a *Quake* logo. Second, it's not about cleavage. It's the particular dress the model was wearing. That dress is casual, which brings out the “casual, carefree computing” kind of theme we wanted to bring out for our laptop tests. After all, people use laptops while in bed, don't they—and that's something they can't do without Desktops.

About the fact that it was a woman on the cover, it adds to the human element. That might sound like a truism, but I hope you get what I mean. Yes, if you're saying “Why a woman and not a man,” look across our issues—you'll find plenty of men on our covers as well. Finally, I'd like to say that I'm not an expert on cover design—I leave that to the expert cover design team.

I'm sure several readers will echo your thoughts, and this open letter is addressed to all of them. Thanks for writing in—even if just with a minor concern!

— Executive Editor

ERRATA

In Mp3 player test article (June 2007), on page number 176-177, the Digit Best Buy Gold and Best Buy Silver Logos were misplaced. The correct placement should have been, Gold logo for iAudio's Cowon D2 and Silver logo on Sansa's E260 as stated correctly in the article. Inconvenience to our patrons is regretted.

Archi-tech-ture!

Dear Digitizers

I am an architect (at least that's what my university certificate says!). Maybe I was amongst the first few CAD users in college. Since then, I am more recognised as computer-savvy than as an architect. I am a regular subscriber to *Digit* since the last three years. I have no other option than keeping myself updated when it comes to technology, because friends hardly talk to me about anything in architecture, and rather, they would love to seek my advice on buying a good laptop, upgrading their existing graphics card, or at times the comparative analysis between AMD and Intel processors.

The institute where I am appointed as a faculty (architectural computing and design fundamentals) decided to go for Linux rather than Windows. I took up the challenge with a smile; I already had a handy book on Linux and open source software with me, which gave me many insights on Linux and open source software (don't tell my boss... he is under the impression that I have done a lot of research on Linux, and now I am expecting a raise!).

I learnt a lot from either *Digit* or the Internet without having to go for any formal education in graphic and Web design. Point is, technology has reached all the offices, may it be an architect, CA, lawyer, doctor, or stock broker for example. Can *Digit* come up with specialised issues on “technology for particular professions,” for example, *Software for Architects*.

When it comes to architecture, now there is BIM, estimation software, rendering software, software for checking sustainability issues, construction management for architects, and what not. *Digit* can even focus on architecture-specific hardware requirements.

Somebody has correctly put it: “Computers are not about computing any more, they are about living.”

Ar. Rajesh Advani

Dear Mr Advani

It is now knowledgeable people like you that we're trying to create; you're the best example of what *Digit's* aim is. To enrich someone's tech knowledge and awareness, to help him or her put it to good use, and to enable him to stand out from the crowd.

Many thanks for your e-mail—it has raised my spirits for the day!

— Executive Editor

Of Lasers And Security

1 The first company to enter the optical disc market with the LaserDisc was?

- (a) Pioneer
- (b) Sony
- (c) Mitsubishi
- (d) Philips



2 The first successful high-level programming language was...

- (a) Machine language
- (b) FORTRAN
- (c) Lisp
- (d) Pascal

3 A physical address on a LAN is called the:

- (a) IP Address
- (b) MAC Address
- (c) Ethernet mask
- (d) Subnet mask address

4 The first live channel in India to broadcast mobile TV (in March 2007) was

- (a) CNN
- (b) Star TV
- (c) Doordarshan
- (d) NDTV

5 "RSA" stands for

- (a) Rivest, Shamir, Adleman
- (b) Really Secure Authentication
- (c) Ronald, Sam, Amman
- (d) Random Secure Access

6 The first commercial microprocessor—the 4-bit 4004 from Intel—was introduced in

- (a) 1971
- (b) 1981
- (c) 1979
- (d) 1985

7 Which one doesn't belong?

- (a) MAN
- (b) WAN
- (c) LAN
- (d) SAN

8 What was the first Web site to feature a banner ad?

- (a) Amazon, in 1995
- (b) Yahoo!, in 1990
- (c) Hotwired, in 1994
- (d) CNET, in 1993

9 Which company is called "Big Blue"?

- (a) IBM
- (b) HP
- (c) Sun
- (d) Dell

10 Which of these operating systems has a UNIX foundation?

- (a) BeOS
- (b) Windows 1.4
- (c) OS/2
- (d) Mac OS X

Did You Know?

EBay users worldwide trade more than \$1,839 (Rs 74,000) worth of goods every second! The highest-priced item ever sold on the site was a \$4.9 million (Rs 20 crore) corporate jet.

Answers

1. (a) Pioneer	5. (a) Rivest, Shamir, Adleman
2. (b) FORTRAN	6. (a) 1971
3. (b) MAC address	7. (d) SAN: the others are communication networks
4. (c) Doordarshan	8. (c) Hotwired, in 1994
5. (a) IBM	9. (a) IBM
6. (a) 1971	10. (d) Mac OS X

Got an interesting question? Send it in with the answer to **TQ@thinkdigit.com** Mark "TQ" in the subject area.

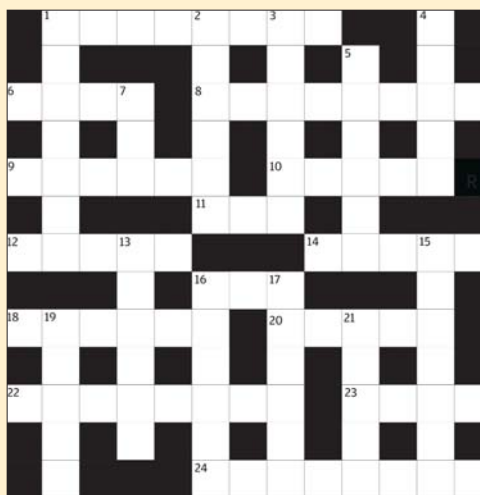
Crossword

ACROSS

7. 1.Computer programme(8)
6. OS failures(4)
8. Burst Extended Data Output-Dynamic Random Access Memory(abbr)(4,4)
9. Wavelength symbol- Greek alphabet(6)
10. Macromedia programme for creating vector graphics-based animation programmes (5)
11. Magneto-optical Filter(abbr)(3)
12. To take or wrest control(5)
14. SI unit of inductance symbolized H(5)
16. Unit of information in a binary numbering system(3)
18. Undeliverable e-mail that returns with an error to the sender(6)
20. High-Speed Downlink Packet Access(abbr)(5)
22. Data containing only ASCII characters.-has the extension .TXT or .ASC(4,4)
23. -----or close files(4)
24. -----screen of -----code name for Microsoft's latest Window operating system(3,5)

DOWN

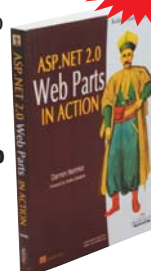
1. Device into which data can be entered and held(7)
2. Video camera attached directly to a computer(6)
3. Mumbai based information portal(6)
4. Computer breakdown(5)
5. Advertising banners displayed through pop-ups on the internet(6)
7. Break-out Box(abbr)(3)
13. Second largest indian PC company based in Mumbai(6)



15. Small Particle-----chemical substance used for fingerprint detection(7)
16. -----or pen tool in graphic software(6)
17. Chain of postings on a single subject in a newsgroup(6)
19. Small, fast and stable web browser-'a rope' (anagr)(5)
21. Semi-conductor device which conducts electric current in one direction only(5)

July's Winner:
Anish Thomas Mathew, Chennai

Send in your entries to **TQ@thinkdigit.com** on or by 20th of this month. One lucky participant will win **ASP.NET 2.0 Web Parts In Action** By Darren Neimke Published by **WILEY-INDIA**



Win!

Last Month's Solution



Crossword by Nitta Jaggi

Tabloid TECH

People And Events That Grabbed The Headlines—For Better Or For Worse

Accessories Anonymous



Lindsay Lohan of drunken binges fame is taking the help of high-tech to cure her of her dipsomania. Just out of rehab, she has *volunteered* to wear an electronic anklet that will monitor her blood alcohol levels. The device works on the principle of “transdermal alcohol testing,” and if you know what “dermal” refers to, you’ll know how it does work: the anklet measures the alcohol level in the thin layer of sweat on the skin that’s there no matter what the ambient temperature is. It is sensitive enough to detect consumption of even a teensy-weensy shot.

The transmission of data is

as sophisticated as the collection is. Whenever the anklet is within a range of 30 feet from a wireless modem, the collected data is sent to a secure Web site that alerts probation officers if the levels exceed permissible limits. And it is next to impossible to remove it: it has a tamper-proof clasp. And trying to slip something between it and the skin won’t work: an infrared beam measures the distance between the skin and the anklet. When this distance increases even slightly, an alert goes out.

Perhaps Ms Lohan can pass it off a new must-have accessory with her heels.

The iBlog - Not

We always knew that on the Internet you could be anyone, no questions asked. But when you say you’re Steve Jobs, and keep a blog, people are going to be curious. Especially when the blog is titled “The Secret Diary of Steve Jobs” (www.fakesteve.blogspot.com).

The postings are decently funny and tongue-in-cheek, and some of the time politically incorrect. Sample: “Woz has nothing to do but give interviews.”

“Vista’s advanced speech recognition technology.” “Another super cool iPhone hack.” The blog has been quite a hit, with thousands of people viewing the site every day and many others blogging about it as well. Business 2.0 magazine has named Fake Steve Jobs the 41st most influential person in business.

You can just see Obelix tapping his head and saying, “These techies are crazy!”

What really draws people to this phenomenon is how well the author of the blog has managed to remain hidden. Some claim he is a Macworld columnist named Andy Ihnatko, while others poo-hoo the idea and say the perpetrator is a Silicon Valley-based reporter. In fact, people have gone to the extent of IP address tracking to find out the geographical location of FSJ (Fake Steve Jobs). But high-tech sleuthing has raised more questions than answers... then again, some are of the opinion that it would be for the best if FSJ stays hidden.

Posts by FSJ are flying in thick and fast. Watch this space for updates. We love to repeat ourselves.

Big Sister!

Celebrities have long dealt with pesky fans and peskier paparazzi. Stalking is part of their lives, and courts have had to intervene too often to address privacy concerns. But most of these cases involved physical stalking. When the stalking becomes virtual, it gets scarier and more pervasive, as Chester Bennington recently discovered.

A woman has pleaded guilty to cyber-stalking Bennington, lead singer of Linkin Park. Devon Townsend, a former employee at Sandia National Laboratories,

admitted that for almost a year she’d spied on Bennington and his wife’s online activities using government computers. She accessed their e-mail and private photos, monitored his financial transactions, and read transcripts of the couple’s phone conversations. She’d have done the post of a KGB agent proud... But as things stand now, she’s staring at a hefty fine and a long time behind bars.

As for Chester, we wonder whether he uses the Internet any longer. Perhaps he should look at moving to Bhutan.

