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A 9.9 Media  
Publication

# digit

YOUR TECHNOLOGY NAVIGATOR

Vol. 9 Issue 9

## Web Awards

Digit hand-picks the cream of the web, so that you don't waste bandwidth

## 24 CPUs Tested

Including Core i7 975 and Phenom II 965BE

## DIYs

- > Crimp your own LAN cable
- > Use bbLean to create your own Windows shell

## Face Recognition technologies

past, present and future

## Create your own GNOME Netbook theme

## How do browser engines work?

Presto, Gecko, Webkit, and what the future holds

**Beyond the Big 4**  
Browsers that you might want to consider for certain tasks

Tips & Tricks  
**Opera, Safari, Firefox**  
Moblin and more

**Machinima**  
When animation meets gaming

The verdict  
on all the  
latest  
**NETBOOKS**

With an overload of new models in the market, Digit helps you make the best choice.



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Agentoo1 helps you choose that all important UPS

# The flip side



Robert Sovereign-Smith, Editor

**On the surface it looks like the web is making us all smarter, and is raising IQs. The reality is that we now know a lot less about a great deal more**

**T**he web has made it a billion times easier to find specific information (which is mostly correct), and completely changed our lives by allowing us to connect to pretty much anyone with a net connection. However, having the ability to get to anything with a few clicks and clacks of a keyboard is not necessarily a good thing.

The fact is that technology has made us lazy. No, I don't mean just physically, I mean mentally as well.

First with television and now the web, we've been overloaded with information and content. Those of us who spend hours a day online are probably digesting more information per day than people did in a month, as little as a decades or two ago. On the surface it looks like the web is making us all smarter, and is raising IQs. The reality is that we now know a lot less about a great deal more.

So why am cautioning you about the web in an issue that carries our own *Web Awards 2009*? Because part of true understanding stems from looking at everything from all angles – the flip side of popular perception, in a way.

I've been very close to people in the education sector my whole life – both my parents were teachers – and the one common complaint I hear often from experienced educators across the globe is that education has been dumbed down too much. It's very much the same for the knowledge we gain from the web these days. If we want to know something, we do a quick Google search, hit the first few links, read a few paragraphs and think we know everything there is to know about the topic at hand. The discipline and rigour that in the past drove science, technology and other developments, has been eroded by the ease of access to everything – whether it's quickie microwave meals that prevent us from learning how to cook and appreciating good food, or plagiarising online content to do our educational/work projects, and thus preventing us from truly learning and understanding.

The three most popular uses of the web these days are networking, communicating and sharing opinions and content. Sure we have a ton of friends on social networking sites, but we rarely meet any of them, let alone have any meaningful conversations. We're basically still social animals, succumbing to peer pressure, and striving for popularity online, just as in the real world. There are millions of people who have hundreds of "friends" online, who still find themselves sitting alone in front of their screens longing for some 'real' interaction.

We communicate several orders of magnitude more than we used to, but it's mostly forwards and jokes and spam. We're basically making the same mistakes we've always made, but just on a larger scale. If you look at the most watched TV

series these days, and realise the utter manure that's being dished out in the form of "reality shows", you understand my concern for the way the web is headed. Yes there's probably more trash online, and yes there are people who gobble it all up, but I'd hate to see the trash become the majority of content out there. In its defence, there is still some excellent material on TV – the usage of the masses has not changed that – and there are still brilliant TV producers.

Although the Web 2.0 phenomenon has supposedly given all of us a voice of our own, effectively giving us the opportunity to be brilliant producers in our own right, the majority is more likely to parrot (if not plagiarise) a single original source or idea. Understanding comes from challenges, not the ease offered by "information at your fingertips".

No matter how flashy and expensive your car, you still need to be a good driver, and the faster the car, the greater the danger of crashing. We are developing ever more powerful technologies, but is our understanding of these systems keeping pace with developments? As I've said before, when it comes to technology, most problems exist between keyboard and chair (PEBKAC).

All technologies are developed by a select few inspired and intelligent individuals. But these technologies are used by or affect us all. We need the general population to be educated much better in order to use these technologies effectively and skilfully. All technologies can be used to good or ill, and the more widespread the usage of the technology, the greater the need for skill and understanding. One way to achieve this is to understand those that develop the modern world, and the first step is to recognise these individuals and companies and the innovations they've made.

*Digit* is playing its part in this aspect, and is looking to felicitate both companies and individuals who contribute to improving the technology around us. Our *Young Indian Innovator* initiative aims to spread awareness and identify individuals who have made significant contributions to technology from our country. Our yearly *Icons of Trust* initiative rewards brands for listening to the needs of the users, and providing excellent products and service. We've also started a category called *Reader of Trust*, to felicitate those of you who have spread awareness, helped and educated your peers. You will find details inside this issue, so make sure to participate and ensure that all of us put technology to the best use possible.



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Wireless Router	Asus Eee PC 1005HA	AMD Phenom II X4 810
Blackberry Curve 8520	Asus Eee PC 1008HA	AMD Phenom II X4 905E
CM Storm Scout	Connoi Classmate Tablet PC	AMD Sempron 140
Corsair CX400W	Intex N101W-C1100	Intel Core 2 Duo E7200
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Western Digital My Book	AMD Athlon II X2 250	Intel Core i7 Extreme 975
World Edition II 2 TB	AMD Phenom II 945	Intel Pentium E5200
	AMD Phenom II 955BE	Intel Pentium E2200



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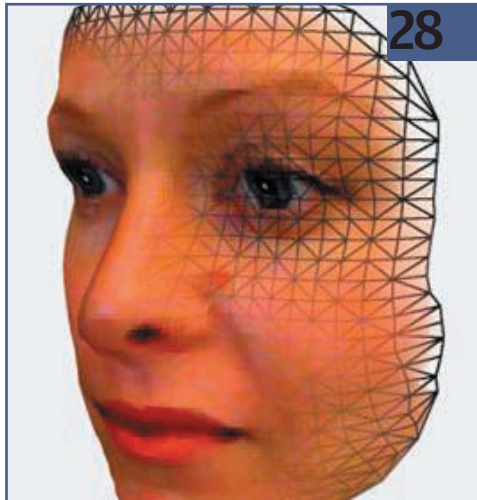
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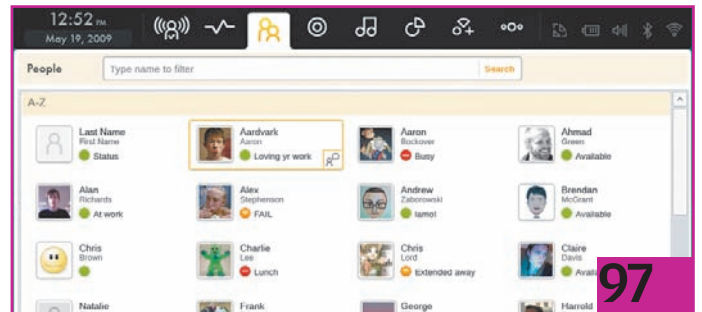
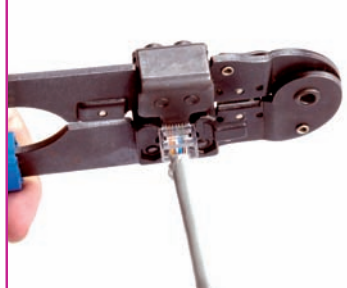
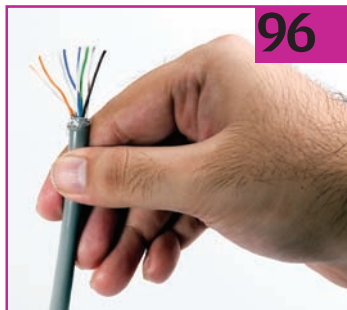
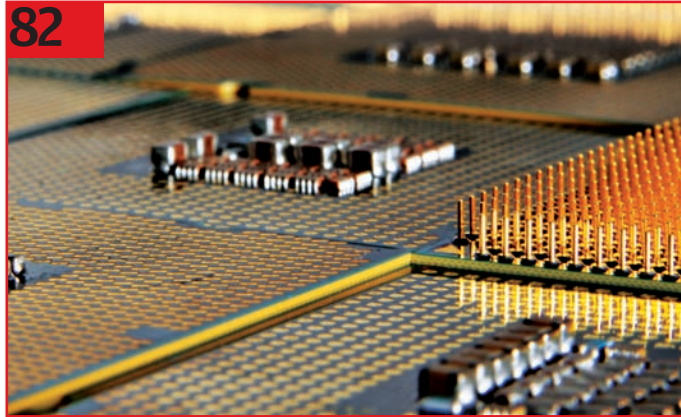
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### Nero 9 Free Version 9.4.12.3



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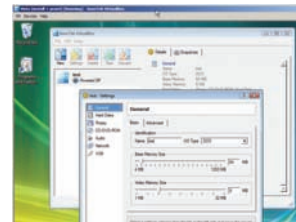
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- Core FTP LE 2.1 build 1612
- eMule Plus 1.2e
- FileDrama 1.1.60
- FileZilla Portable 3.2.6.1
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- RipTiger 2.7.4
- Serv-U 8.1.0.3
- SmartFTP Client 3.0
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- TestMailer 1.4.4

## System

### VirtualBox 3.0.2



Innotek VirtualBox is a family of powerful x86 virtualization products for enterprise as well as home use. Not only is VirtualBox an extremely feature rich, high performance product for enterprise customers, it is also the only professional solution that is freely available as Open Source Software

- 3DP Chip 9.07
- Allway Sync 9.2.21
- Baku 4.1.3500
- BatteryCare 0.9.6.3
- CZ Print Job Report 2.0
- Defragglr 1.12.152
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- Fast Clean 1.0
- FileMenu Tools 5.7
- Fresh Diagnose 8.14
- Fresh UI 8.37
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- MyDefrag 4.1.2
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- PeaZip Portable 2.6.3
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- Between two worlds
- Dinner for One
- Oh My
- Reworked
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- The Teatime Sessions

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- Ninja Assassin
- Sherlock Holmes
- Taxidermia
- The Book of Eli
- The Box
- Tron Legacy

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- Blip
- Egg
- Enemy at the gates compositing
- Evolved Virtual Creatures
- Introducing the DSLR Gunstock Shooters
- Pipe Dream
- Sorry I'm Late
- Talin
- The Way of the Mantis
- Toybox

## Gaming Games

### Demigod



Demigod is a real-time, tactical strategy game that includes extensive role-playing elements.

- Fuel
- Osmos

## Tools By Demand

### Autodesk 3D studio Max

Autodesk 3ds Max is a comprehensive 3D modeling and 3D animation. Create stunning 3D models in less time with Autodesk 3ds Max 2010 software.

- DirectX End-User Runtimes
- Microsoft SQL Server 2008 Express with Tools
- Dreamweaver CS4

## Customization

### RocketDock 1.3.5



RocketDock is a smoothly animated, alpha blended application launcher. It provides a nice clean interface to drop shortcuts on for easy access and organization. Now with added Taskbar support your minimized windows can appear as icons on the dock. This allows for better productivity and accessibility.

- 360desktop public beta
- BBLean
- BumpTop 1.0 build 3038
- ClickOff 1.77
- Desktop Sidebar 1.1.3
- Distant Suns 6.0
- FlyakiteOSX 2
- Ghost-It 1.03
- IcoFX 1.6.4
- IconRestorer 1.0.5.2
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- JetToolBar 3.8.1.5021
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- LogonStudio Vista 1
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- ObjectDock 1.90 Build 536
- PixelToolbox 1.1
- PowerToys Fun Pack 1
- Send To Toys 2.5
- SETI@home 5.2.1
- SideSlide 3.0.00b
- SmartBarXP 0.98 beta 4.8
- Sneaky Virtual Desktop 1.2 build 41
- Start Menu Organizer 1.1
- Sticky Notes 2.2
- Tweak UI 2.10
- VersaTimer 1.02
- Vista Start Menu 3.2
- Windows Vista Ultimate

## Wallpaper Series Pack 1.5

- Yahoo Widgets 4.5.2
- ZMatrix 1.4.8
- 3DNA Desktop 1.1
- AltDesk 1.9
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- LaunchOnFly 1.52
- Microangelo Toolset 6.10.10
- TopDesk 1.5.4.1
- WindowBlinds 6.4

## Browsers



### Safari 4

Introducing Safari 4, the world's fastest and most innovative web browser for Mac and PC.

- Arora 0.8.0
- Bolt
- Chrome
- Epiphany 2.22.3
- Fennec alpha1
- Firefox 3.5.2
- Flock 2.5
- Galeon 2.0.7
- K-Meleon 1.5.3
- Midori 1.09
- Opera
- Opera Mobile 9.7 beta
- Skyfire
- Teashark beta

## Updates And Add-ons

- 2007 Microsoft Office Suite Service Pack 2
- Avast Update
- Kaspersky Anti-Virus Definition Complete Update
- McAfee VirusScan Definition
- Microsoft Office Compatibility Pack
- Symantec Norton AntiVirus Virus Definition
- Windows Internet Explorer 8 for Windows XP

## OS Operating Systems



## gOS

gOS has been praised for being the most beautiful and easiest to use Linux operating system on the market.

- Android Live CD
- Moblin

## Videos

### TED

- Anand Agarawala demos BumpTop
- Arthur Ganson makes moving sculpture
- Blaise Aguera y Arcas demos Photosynth
- Burt Rutan sees the future of space
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## Introduction to Computer Science Lecture 1

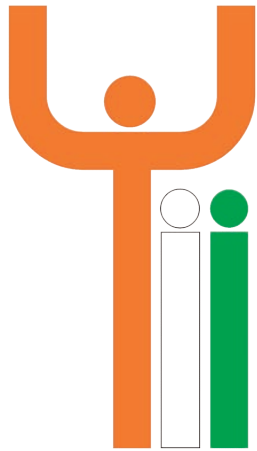
How computers work, and a discourse on Binary.

- Lecture 2
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## Linux Journals

- "Mee" PC
- GoGrid on Cloud Computing, Interview
- Install Ubuntu in Windows With Wubi
- Neuros OSD Review
- Product Spotlight: ScaleMP
- Rockbox Review
- SCOTTEVEST Review
- The Battle for Wesnoth Review
- Tux Droid Review
- Zipit Z2 Wireless Messenger Review

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✉ I'm an avid reader of Digit for the last four years. The content is also satisfying in case of software on DVD and the published content in the magazine. But I've noticed only a small mention of ISPs and the connectivity plans across the nation. I've never seen a single article dedicated to the different CPEs distributed to the ISP clients and their data rates. I do agree that it is very difficult to fix the data rates at a given point and the location of connectivity. But it can be done at a standard level. Please try to test the devices by Reliance Net Connect & Broadband+, Tata Indicom Plug2Surf, Plug2Surf Whiz, Photon, Idea Netsetter & Bsnl USB Datacard. Thanks.

**Prasanna Khakre**

✉ Thanks for suggestion. We've been planning to do a detailed comparison feature on ISPs and their data plans for some time now. Similarly, for Direct To Home TV. But as you rightly pointed out there are a lot of geographical considerations and differences, especially when it comes to wireless plans that are dependent on signal strength. However we're working towards finding a possible solution.

**Michael**

✉ First of all congrats on completing eight years. I am reading your magazine since last one year and I am proud to say that it is marvelous.

Please provide Flash 8 in your upcoming DVDs as I am its user but not find it till now. Please provide Windows XP msstyles and various other themes as they are my favorites. Also, tell me how I can make an autorun CD/DVD with rich and graphical content as your all DVDs. It will be helpful for me as i am doing many of my own projects.

**Vyomesh  
Gandhidham-Kutch**

✉ Thanks for writing in to us, but direct your e-mails to [cdcontent@thinkdigit.com](mailto:cdcontent@thinkdigit.com) for reaching the people responsible for the DVDs directly. Better still, head over to the "By Demand" section of the thinkdigit.com forums to interact with us and ask for software you want. Check out the "Customize" section of this month's DVD for a whole bunch desktop eye-candy. There are many programs available for making an autorun DVD, but here is a very simple approach. Make the interface linking to files in Powerpoint, and save the file as a Powerpoint show. Then, create an autorun.ini file in notepad, with the following text:

```
[autorun]
OPEN=filename.pps
ICON=icon.ico
```

The .ico file will create an icon for your DVD. The target machine has to have Powerpoint for this to work though.

**Aditya**

✉ I have been reading Digit since December 2001. You guys really have no competitor who comes close. But I still have some complaints and suggestions for you.

1. Please increase your font size if you can without increasing cost of the mag.
2. Revisit topics like all Operating Systems, Networking and Gaming in FastTrack since this sector is developing very rapidly. Also give a FastTrack on Java Programming.

You are best tech mag in India and we want you to be better than the best.

**Sarang Bokil**

✉ Thanks for the constructive criticism and suggestions. We are always working towards improving our quality and readability. We are still in the process of ironing out the redesign. We're planning a Fast Track on a gaming topic that you will like. As for the other topics you've suggested, we taken them under consideration.

**Robert**

✉ I want to buy a graphic card for playing games like *Devil May Cry (3,4)*, *God Of War(1,2)*, *Ninja Black*, *Prototype*, etc. My configuration is Intel dual core 1.8, 2GB DDR2 RAM, Intel 945GC MICRO Motherboard, 160 HDD. I want a graphic card for a budget of Rs. 4,500. Please help me.

**Ajay Verma**

The Palit GeForce 9600GT is the best option you have. It will be able to run the games you mentioned just fine on a 20 or 22-inch monitor.

**Rossi**

✉ I am a regular reader of Digit. Your August issue was awesome but you could have done better. Your magazine & Fast Track were outstanding but the content of DVDs was not up to the mark. You should improve following things in DVDs:

1. Provide more games. Games that you provided in last month issue was rubbish. Please don't provide small games.
2. Give some new and popular software. You have provided some same software that you provided in previous issues.
3. Please provide some videos and E-books of programming, web designing for beginners.

**Diptanshu Kakwani**

✉ We have a lot of demand for casual games, and in fact, we had flammers coming our way for discontinuing the practice. Head out to the "By Demand" section on the forums if you feel like discussing this with the team and other readers. If you look carefully, the software in our Tools section are all at most a month old when the magazine goes to the stands. Some of the sections in the DVDs are regulars, and we provide the latest updates of popular software whenever they are released. Because of the release cycle of some projects, these show up in the DVDs quite often. We will work on the DVD content geared towards developers.

**Aditya**

✉ I have few questions and suggestions.

1. If I buy a PCI express 2.0 slotted mother board, will my PCIe 1.0 graphics card work with that board?
2. Please review AMD's new "Phenom II X4 965" processor, may be the fastest processor yet!
3. We will very glad if you provide some more full "CoffeeCup" Software.
4. Please provide information on the "Google wave", "Google voice" and "Goggle Caffeine".
5. You should give another tutorial CD (like the ones from Bainware or Indus net).

**Ritam Das  
Kolkata**

PCI-E 2.0 is backward complaint, so there shouldn't be any problems using a PCIe 1.0 card on it. To know how the Phenom II X4 965 fared, check out the processor comparison test on page number 81 in this issue. We covered a bit of Google Voice in



**How stuff works**

We peek beneath the surface of web browsers, and tell you the underlying mechanism

64

**CPUs tested**

We benchmark the newest CPUs and find out how they match up against each other

82

the August issue and we've also looked at Google Wave in the issue prior to it. Google Wave will be made available as a beta at the end of next month. We'll try and do a more thorough review of it then. For Caffeine news check out Buzz. Thank you for sharing the links with us, we will look into including tutorials in our DVDs. Watch out for lots of it in the next month!

Siddharth

☒ The August issue is a good gift to all Digit readers. The 'Open Source' Special was indeed very special. Many of my misconceptions about open source were cracked by 'Myths about Open Source'. 'Living On Open Source' just busted another myth of mine that 'open source is limited to software field'. Thanks for various LCD monitors and graphics cards you tested, many of them are really affordable. A long wait for Flash Drives was over. 'Bazaar' section was awesome due to article on N97. Thanks for article on Wikipedia. Thanks for Open Suse, and Fedora 11.

It was good to have Fast track on Open source. Please test UPS as I face frequent power failure here. Can you test writable CDs and DVDs which will be helpful for storing our data, please? Eagerly awaiting the next issue.

Mayur Gaikwad.  
Satara, Maharashtra

☒ Thank you for your vote of confidence, Mayur. As for your suggestion on UPS, check out my column on page 108. It'll give you a good idea about the various solutions available.

Agent 001

☒ Thanks a lot for bringing us such a great mag. I've been on your side since October 2005. And since then I've been referring all my friends and relatives to you. Currently I am pursuing BCA and would like to hear your advice for me. And why don't you bring out a Fast Track on IT careers, and enlightening people against Piracy. And PLEASE BRING BACK THE DIGIT ARCHIVE.

**LETTER OF THE MONTH**

☒ Hello, Team Digit. Congrats on being India's No. 1 Tech Magazine. Your August issue was great. The articles on Myths about open source, Memory Madness were awesome. I have a Nokia 3230 with a 1.3 MP camera. Capturing some images on a rainy day, I observed that the image file size was about 50 to 60 KB per image. But in sunny conditions I was surprised to see that their image file size was about 500 to 600 KB per image. I changed no settings. I want to know that why this happened. Also in the April DVD1 I found a great software named Format Factory. It has a wide range of format conversion categories and also it converts whole videos. I was quite impressed by it. Thanks for including the software. The new avatar of the Digit web site is awesome. Your unboxing videos are also quite good.

I have an assembled antique PC with Pentium 4, 256 MB DDR RAM, an 80 GB Samsung Hard Drive with Windows XP Service Pack 2 installed. On switching it on I get the following error message: 'Failed to load Kernel Library!' accompanied with an error sound. The PC restarts repeatedly when I play any game like Need for Speed-Hot Pursuit 2 or when even I open two or more programs simultaneously. Could it be a virus or does it happens due to less RAM?

One more problem, whenever I try shop online for Digit issues, I fill every information required and I select the

ATM-cum-Debit card option. I choose the State Bank ATM option. I fill the card No. as well as the PIN passcode. In the end Firefox turns off and when I check my mailbox, there is a message from <ccavenue> stating the order is canceled for insufficient balance even when I have sufficient balance in my SBI account. Please tell me what to do. But I can assure you that you guys are the best and no one can take your place. I am waiting for an awesome September issue. Best of luck! Keep up the good work!

Mohit Sharma

☒ Thanks for writing in Mohit. All the praise is appreciated. The variation in the size of image is exceptionally high. Usually you won't find so much of a difference in the sizes. So the only possible explanation is that the settings must have changed. The problem with Windows could be because of faulty memory. Creating a bootable disc for Memtest 86+ is recommended. If errors show up in the test, you'll have to get the RAM sticks replaced. About your payment issue, it may be because you're selecting another account in the process. So if you have a savings account as well as a current account (which by default does not have any balance) it could cause the problem. Also you could try calling your bank. As for Firefox, try installing a newer version.

Rossi

Life's real hard without it for us ever growing Digitians. The whole community will agree, the supplied archive is just not enough. Please do something about it and quick asap. And yes I am very impressed with your new avatar. Thanks again for everything. The whole community owes you big time :-)

Prakash Chettri, Shillong

☒ Thanks for the vote of confidence. We are working on a Digit Archive, but there is an updated version in this month's DVD.

Aditya

☒ I'm a huge fan of Digit Magazine. I am an avid gamer and I have huge interest in game design. I want to know about the game engines that game production companies such as Capcom or Ubisoft use. I want to know what software

will be used in these engines, like Autodesk, etc. Also, I am not able to understand the concept of what a game engine is. Is it a bundle of software for environment design (like Autodesk 3D Max), character designing software? etc. It will be nice if you review game engines in the future issues of the magazine, such as Capcom's game engine - MT Framework, which was used for Resident Evil 5, and Scimitar, a game engine by Ubisoft used for Assassin's Creed and Prince of Persia.

Deepan Murugan  
Chennai

☒ We will look into carrying more beneath the surface articles for the gaming community, great to know of your interest, and make sure to keep writing in to us.

Robert

☒ I am Mridul Godha, a

student of Mayo College, Ajmer, aged 13. I am a techno-freak and also publish a weekly newsletter in my school which I make on Adobe InDesign. I have an idea for Digit. Please start a column in which children/teenagers would give their views on a particular software or game. I'm willing to contribute wholeheartedly if you do start it! Waiting for your reply with lots of hopes.

Mridul Godha

That's a good suggestion. We invite all our younger readers to write in to us and tell us some of the topics that interest them. We'll try and feature as many articles as possible. Those of you who want to try your hand at writing for Digit are welcome to send your articles to me at [editor@thinkdigit.com](mailto:editor@thinkdigit.com) for consideration.

Robert

**August 20**

The last day you could download Windows 7 RC from Microsoft's web site

**RC expiration**

Microsoft says you'll get two weeks' notice, and then beginning on March 1, 2010, your PC will start shutting down every two hours

# Windows 7

In a freewheeling interview-cum-demo, the Digit team had a chat with Mr. Popli, Director - Windows Client, while the operating system was being showcased.

## Siddharth Parwatay & Rohan Naravane

kumar.j@thinkdigit.com

rohan.naravane@thinkdigit.com

### For those who came in late, can you tell us what Windows 7 is all about?

The key theme around which Windows 7 was based was how it should work for the consumer and corporates. The thought that went into it was based on around 4,000 IT companies' feedback. It meant resolving all the expectations of consumers such as "I want it to be faster", "I want it to be smarter", and of course "it should be lighter on resources".

It is widely acknowledged that Vista less prone to malware, but the security came with a whole lot of notifications. So the question that consumers had was "do I need to be interrupted each time"? So with Windows 7 we left the choice up to the consumer.

With all its features, Windows 7 lets you make your life simple, lets you do exactly what you want to do and lets you do new things.

In the commercial environment direct access is one of the very big features offered by Windows 7. It's actually a replacement to a VPN. What direct access does, is let you directly access your corporate resources remotely, while giving you certain amount of savings. Branch cache and bit locker are also new features that are worth mentioning. All these features go to making the PC experience simplified, while taking care of security and risk management. IE8, which is also an integral part of Windows 7, has superior security and protection features.

### Speaking of browsers, Google has announced the Chrome OS, which is to be based on a browser. What are your views?

We've not seen it yet, so it's very difficult to comment on it. All said and done even for the netbook phenomenon consumers have favoured or shown their preference for the Windows platform for reasons of its compatibility, eco-system experience and familiarity; even its interoperability with other devices.

### Windows is giving upgrade options for Vista Premium and Ultimate users. Do you have similar options for netbook users? Especially since they don't come with an optical drive. Any options for USB boot?

I'll get back to you on that. However, in the new scheme of things, once the product is launched in October, netbook buyers will have the option of having Windows 7 preinstalled on their devices. Once that happens it will be a transparent experience. Windows Anytime Upgrade options are also available on Windows 7 for field upgrade using a key. To upgrade from, say, a Starter Edition to Ultimate.

### Will Windows 7 also come with a Starter Edition, like Windows XP?

Yes, Windows 7 Starter Edition will be available for small-form factors including netbooks.



### Will it have a three-application limit that XP had?

No, there won't be any three application limits this time with Windows 7.

### What about anti-piracy measures? Does Windows 7 offer any sophisticated form of anti-piracy technique, compared to previous versions that sported the online validation tool?


Windows 7 will come with the Genuine Advantage Program with automatic update. Those are the ones that will be a driving tool, so that consumers will see that having legitimate software will be of value to them. Partners loose out since there's not much value coming through in terms of overall business proposition. Lastly, the economy's obviously a loser since the government gets nothing back in the form of tax behind every product sale.

### What is the Windows 7 pricing going to be? We've seen that the pricing for consumers has been slashed compared to Windows Vista in the US. Will this be reflected here in India as well?

At a broad level, the prices will be cheaper. I can't really give you an exact figure, but approximately it would be in the range of 10-15 per cent lower.

### We've seen a trend of software moving towards the cloud. Google is coming up with its browser-centred Chrome OS. Already, there are many cloud-based OSes out there. What are Microsoft's plans to take on the 'cloud'?

Our view of the cloud is very clear; it's going to be a combination. It's going to be a combination of a platform-like PC which has its own abilities to run applications. Because there's no comparison to the user-experience across the board to have every thing on the cloud. There are certain services that will be on the cloud. There's value for certain applications to be on the cloud. Does it mean that what you need on an everyday basis has to be only on the cloud? Unlikely. And why would you do that? Can you imagine one billion users today to be on the cloud, all the time? Potentially not. Let's talk of our own country, how many people are really going to be on the cloud, all the time? The speeds currently are not worthy of giving us a real-life experience.

As a trend, increasingly, more and more services are going to be on the cloud. Today, you have IM and mail on the cloud. This is recognition that more people are spending more time on the cloud. But does it mean its going to be black and white, all cloud and no client? I think that's a very unlikely scenario. Which is why Microsoft has stated that our direction is to continue to work and enhance the services on the cloud. But the versatility of the PC platform, the richness of what it can offer, in a combination with the cloud is the direction to move forward. 

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# Cisco TelePresence

**Eskild Hansen - Head, European Design Center, Cisco Consumer Business Group speaks on design and user interface**

**Kumar Jhuremalani and Rohan Naravane**  
*kumar.j@thinkdigit.com and rohan.naravane@thinkdigit.com*

**How do you see India's growth in terms of internet and Wi-Fi usage?**

In countries like India and China, there is massive growth in the internet. Currently, China has the most internet users and India has close to one billion people, so there is a huge number of people who can use the internet.

**Is Cisco planning to create the TelePresence experience for home users?**

We are planning to bring it to the consumer market, but we do not have a concrete plan yet for consumers. It's the same human network, if you think about it. If you want to connect with your friends and family, it's not about looking at a computer, but it's something you want to do in your living room. So it's a natural movement process. It will be really interesting to see how we develop as a company within the next one, two to five years.

**How does Cisco see itself in comparison to the other companies out there?**

We have the vision to be the leading company in our category. When we go into categories, we want to be the leader, number two is not good enough. Even with our products, if you look at the reviews they get, it shows that we are moving towards that.

**Other than the external design changes, was the design team responsible for the software interface design?**


What we do is, we have a collaboration model. So the whole idea



about Cisco is, we have what you call Cisco 3.0, like the web 2.0 collaboration technologies, we're doing that inside of our company. We have blogs and video blogs and all kinds of internally linked things and we use these to collaborate. So, even though we didn't execute the product, it's really about how we are moving towards the same mission. Very interesting way of working.



**Does the user interface support multiple languages, and is Hindi a part of that?**

The routers come with software called Easy Link Advisor, which is easy for anybody to use. You just have to follow the simple step by step procedures. The software CD comes with every router and you just have to drop in the CD and the step-by-step instructions are displayed on the screen - which makes it very easy to understand. We already have support for 33 different languages like Japanese, English and Chinese. Currently there is no support for Hindi, but we are trying to localise it as much as possible 

**Ashok Tripathi, General Manager, Systems and Technology Division for Wipro Infotech, on eGO - Wipro's range of networks**

Wipro has had a good year as far as sales are concerned. While overall share of desktops in the computer market has come down, Wipro has held its position.

**How did you manage to sustain your sales when most companies have seen a decline?**


We try and differentiate ourselves in terms of design, which is specially done for local needs with service, a promise of trust and wide reach. Offering on-site warranty in more than 50 cities is part of this value proposition.

**Tell us more about the eGO line of laptops.**

The idea was to appeal to the *confident* buyer, address the latent need to own a good looking product. Hence, we focussed on styling, aesthetics and functionality.

**How has the product been received?**

eGo now accounts for 33 per cent of all notebooks sold by Wipro. In fact, in the enterprise market, Wipro is the fourth largest brand of notebooks.

We believe nettops are more suitable for office users than consumers. All-in-ones are not likely to become very common and popular in the near term. 



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Nominate your favourite Indian innovator who you think has made a significant contribution to tech. Mail your nomination(s) to [yii@thinkdigit.com](mailto:yii@thinkdigit.com). Head to [www.thinkdigit.com/yii](http://www.thinkdigit.com/yii) for more

Buzz

# PlayStation goes slim

So now that the new PlayStation 3 Slim has been unveiled, the question for every Indian is "When can we get our hands on it?" Well, Digit's got the exclusive details, straight from the horse's mouth!

You can expect the PS3 Slim to hit retail shelves in India in November, for around the same price as the current 80 GB 'Fat PS3', which received a

Slim some time in November," he said.

"We realise the disappointment during the festive season and have hence released the 80 GB PS3 bundle with two free titles for gaming enthusiasts," he added.

And what's more, Bose revealed that the Fat PS3 will be phased out once current stocks are sold out.

"Once the current lot of



price cut to retail at Rs. 19,990. However, while the Fat PS3 also comes bundled with two games (*Uncharted: Drake's Fortune* and *GT5 Prologue*), the PS3 Slim will carry no such packaged titles.

Atindriya Bose, Country Manager, Sony Computer Entertainment, told Think Digit: "As you know, the worldwide launch for the PS3 Slim is scheduled for September 1, and since we normally get our shipments from the European market, that usually means a delay of about a month and half."

"However, with Diwali coming up, logistics becomes a little difficult. So we are targeting a launch for the PS3

80 GB PS3 units are sold, we will be making only the 120 GB PS3 Slim available in the Indian market," he said.

So, will you wait out until November for the PS3 Slim or grab the 80 GB PS3 bundle with the two free games?

## 'Rozgar Duniya' - a new job portal for rural India

The idea of an online employment portal for Indian villagers does not seem quite plausible at first. But, if there are two organisations that can make it successful, they have to be Monster.com and ITC's e-Choupal initiative.

Together, they have now launched a bi-lingual (Hindi

and English) portal, Rozgar Duniya, to cater specifically to rural job seekers in India. Job categories include textiles and weaving, teaching, mechanics and auto repair, data entry and industrial jobs such as motor binding, steel fabrication, glass blowing and administration.

The biggest obstacle, obviously, is in getting the technologically backward and often illiterate farmers and other villagers to participate. This is where e-Choupal comes in.

These e-Choupals are internet kiosks in villages that offer farmers crop, weather and market information.

Overall, there are 6,500 such kiosks in ten states so far, reaching four million villagers. For more information, read an interesting article at <http://www.thinkdigit.com/d/96904/>.

## Xbox 360 failure over 50 per cent!

A consumer survey by Game Informer magazine has revealed some astounding facts, the prime among them being that one out of every two Xbox 360 units sold is malfunctioning; yet, owners will be undeterred by the hardware failure and still buy the console in the future!

The Xbox 360 has been notorious for a string of technical failures, the most widely renowned being the dreaded *Red Ring Of Death*.

The survey found that the Xbox 360 has a 54.2 per cent failure rate, compared to 10.6 per cent for the PS3 and the Wii's 6.8 per cent.

"Microsoft also seized the gold medal for unhelpful customer service, taking nearly a month to repair or replace a console, while Nintendo and Sony stuck closer to a week. Only 37.7 per cent of Microsoft customers found the company's customer service was "very helpful," compared to 51.1 per cent for Sony and



Microsoft's Big Blunder?

56.1 per cent for Nintendo," reported The Consumerist.

The most shocking number from the survey – and frightening from a consumer perspective – is that only 3.8 per cent of Xbox 360 owners said they'd never buy another Xbox because of hardware failure.

## Sony's fast Li-ions

Sony has announced a new line of rechargeable lithium ion cells. These batteries use olivine-type lithium ion phosphate cathodes and give a much desired combination of long life, fast recharging and good power density.

These marvels are capable of as many as 2,000 charge-discharge cycles, and if that wasn't impressive enough, they manage to retain more than 80 per cent of their capacity even after that!

The batteries will be capable of being charged up to 99 per cent of their full capacity in as little as 30 minutes – this is half that of their current batteries. Imagine the consequences this can have for mobile devices, where battery life and recharge time are especially important. For those seeking more specific details, check out <http://www.thinkdigit.com/d/31392/>.

Blizzard confirms no LAN support for Starcraft II

Sony might develop a phone component to their successful Playstation Portable handheld

## Google BINGes on Caffeine

Is Google beginning to feel the competition from Bing already? In a blog post at the end of August, Google announced its "next-generation" infrastructure, dubbed Caffeine.

Competition brings out the best in products, and this is clearly an example of the benefits of competition. Like all things Google though, the Caffeine-based engine is as simple as the standard Google search. The changes made have been entirely "under the hood" and the only effect (and not even much at that) will be in the search results and speed.

Google is now looking for people to give feedback on its new venture, especially the power searchers who might actually notice a difference in the results they get. Those interested can head over to <http://www2.sandbox.google.com/> to try it out.

## IBM to develop DNA microchips

Researchers at IBM's US-based laboratories and the California Institute of Technology (Caltech) have developed a new method to use DNA to create next-gen microchips that are faster, cheaper and more energy efficient.

Artificial DNA nanostructures, or "DNA

origami" may provide a cheap framework on which to build tiny microchips, according to a paper published on Sunday in the journal Nature Nanotechnology. This means that such DNA molecules can be used as scaffolds (mini circuit boards) for carbon nanotubes, nanowires and nanoparticles to assemble themselves into precise patterns.

"This is the first demonstration of using biological molecules to help with processing in the semiconductor industry," IBM research



Microchips of the future?

manager Spike Narayan told Reuters. "Basically, this is telling us that biological structures like DNA actually offer some very reproducible, repetitive kinds of patterns that we can actually leverage in semiconductor processes."

The research might help manufacturers such as IBM, Intel and AMD keep up with Moore's Law, which states that the number of transistors on a circuit roughly double every two years. The biggest obstacle to keeping up with Moore's Law is developing smaller and smaller chipsets.

To read up about this, just type <http://www.thinkdigit.com/d/36684/>.

## ISRO launches 'Bhuvan'

The Indian Space Research Organisation (ISRO) unveiled its most ambitious people-oriented project yet. *Bhuvan*, meaning 'Earth' in Sanskrit is a remote-sensing 3D image portal that promises to take on the likes of popular virtual globe-mapping applications such as Google Earth and Wikimapia. What's more, it is technically superior on paper!

The most interesting feature for users will be the ability of *Bhuvan* to zoom far closer than the aerial view from a chopper. While Google Earth restricts zooming to 200 metres and Wikimapia goes up to 50 metres, ISRO's new technology will be able to render images from up to 10 metres, which means you can easily see details up to a three-floor high building and also add information.

The other important

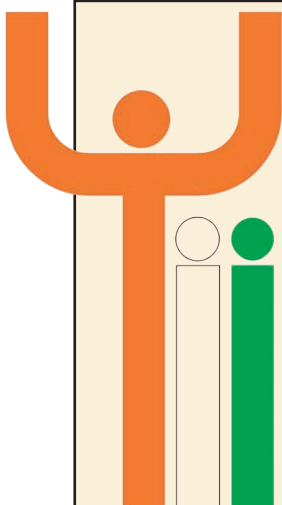


India's answer to Google Earth

feature is that *Bhuvan* uses seven satellites (including ISRO's Resourcesat-1, Cartosat-1 and Cartosat-2) to provide images, as well as time-stamping for multiple views from the same satellite. This provides images from different angles apart from the default top-down perpendicular view, thus enriching the user experience.

ISRO will update images for the program once every year, compared to Google's four-year updates. As it keeps updating its database with more recent and higher resolution images, *Bhuvan* eventually promises to offer real-time data and images.

For the full story, visit <http://www.thinkdigit.com/d/90766/>



Your chance to make a difference

YOUNG INDIAN INNOVATORS

### vote for Young Indian Innovators who are Changing the World

In celebration of our independence this year, Digit has decided to compile a list of Young Indian Innovators who are Changing our World through tech. Whether a young Indian has designed a microchip, written an all-important algorithm for a search engine, or has contributed to rural enterprise, we would like to identify and felicitate the individual for his contribution to our society.

To help in the endeavour, we would like to enlist your help. Contribute to this cause by sending in your nominations to [yii@thinkdigit.com](mailto:yii@thinkdigit.com), and by voting for those whose work you think has truly made an impact on India and the world. Take a moment of your time to show your appreciation for the great minds of contemporary India.

Visit [www.thinkdigit.com/yii](http://www.thinkdigit.com/yii) for more information.

**Nokia N900 tablet**

Dubbed as the RX-51, the internet was full of leaked shots of the upcoming Nokia N900, the successor to the N810. This is interesting news because there has been little happening in the tablet space. Secondly, this bulky beast will be one of the first devices to sport the Maemo 5 OS, codenamed Fremantle - Tux fanboys will clap their hands in glee since the platform is based on Linux. Nokia has been working with members of the Maemo community and Linux mobile developers for some time now. In fact, Maemo 5 represents a lot of push from Nokia's side to bring about architectural changes.

We're saving the spoilers on the hardware for last and now a little more dope on Maemo 5. A unique hardware and boot management system called "Upstart" is being used. Being event driven and asynchronous, it can perform multiple tasks simultaneously and is much better than the current iterative system that performs operations in a predetermined order. So Maemo starts up faster. The open hardware manager (OHM) is next. This hardware abstraction layer (HAL) provides a standardised interface for managing the device's internal functionality, such as reducing back lighting automatically in case of low battery or under-clocking the processor in case of excessive heat dissipation. Disabling the power button during a firmware flash is one other such example. It is completely user configurable and features rule-based policies.

The most excitement is generated by the connectivity options that Maemo 5 supports. Nokia has opened its source code for high speed



packet access (HSPA) and the Wi-Fi driver for tablets to the development community in the pursuit of getting these into the Linux kernel. Then there is the "Clutter" graphics framework, which brings richer and more

has become a Nokia *de facto* now. The N900 should make a splash later this year, probably at Nokia World 2009 scheduled for September. Rumours have it's pricing at around the \$599 mark, which seems about

**Tux fanboys will clap their hands in glee since the platform is based on Linux**

interactive and attractive menu systems, visual effects, and of course, usability.

And now for the N900; how does a massive 3.5-inch resistive-touch based touchscreen with a hefty resolution of 800 x 480 pixels sound? The 32 GB built-in memory, 5 MP camera, Wi-Fi, Bluetooth, GPS, micro USB and TV-out are fresh out of the N97 oven. Did we mention a full, slide-out QWERTY keypad? Processing grunt comes from an ARM Cortex-A8 CPU that is clocked at anywhere 550 and 650 MHz (Nokia is keeping this hush for now). No news on the battery, but we expect nothing less than a colossal 1,500 mAh unit, perhaps something even larger given that this will be used for heavy connectivity.

Reviewers who have got a sneak peek say the Maemo 5 interface is fun, rich and very usable, not to mention an excellent performer and better than the Symbian S60 platform that

right for the features and performance on offer.

**Nokia's rural love - new micro-payment scheme**

Amid pandemic scares and global recession, as fortunes continue to dwindle it seems Nokia is the one shining star that threatens to emerge from all this even stronger than it was a year ago. Nokia's Indian market continues to grow even as pockets shrink and kudos to their marketing division for coming up with innovative ways to reel in even more customers.

India is already Nokia's second biggest market with 430 million users - a whopping 60 per cent of India's cellphones are Nokias. While the demand for high-end phones remains the domain of urban India, Nokia has a new lucrative micro-financing scheme that should reign in more of the rural audience as well. The new scheme, which has already been tested in Maharashtra, will enable rural

customers to pay for their mobile in 25 equal weekly installments of Rs. 100 each. This service is sure to be a boon to many of the customers in the rural market, as now with a small bill of Rs. 400 above their monthly bill, they can get a Nokia mobile. Other schemes, such as Nokia Life Tools, are also targeted towards this market. With the Nokia Life Tools Agriculture services, Nokia intends to provide its rural audience with information relevant to them. Connectivity is always a good thing, and more services geared for farmers and other rural audiences is surely a good sign. Just don't expect to get an N97 in this scheme anytime soon!

**When giants meet**

Nokia, the worldwide leader in smart-phones and Microsoft, the largest software manufacturer in the world, have combined forces and entered into an alliance that is set to deliver a groundbreaking, enterprise-grade solution for mobile productivity. In mid-August, Microsoft Business Division President Stephen Elop and Nokia's Executive Vice President for Devices, Kai Oistamo, announced the agreement and outlined a shared vision for the future of mobile productivity.

The two giants have already begun collaborating on the design, development and marketing of productivity solutions for the mobile professional, bringing Microsoft Office Mobile and Microsoft business communications, collaboration and device management software to Nokia's Symbian devices. These solutions will be available for a broad range of Nokia smart-phones, starting with the E-series. Both Microsoft and Nokia possess a rare combination of enterprise experience and consumer understanding and, in addition to the collaboration on existing software and services, will use these assets to jointly design a

**thinkdigit.com news**

So the shiny new iPhone 3GS can play 1080p content despite Apples claims to the contrary. But is it any good? Read more - <http://www.thinkdigit.com/d/90376/>

## NVIDIA Tegra in action

NVIDIA's new low-power Tegra chip is the one driving the new Zune HD PMP

## VOIP apps blocked

AT&T admits to having struck a deal with Apple that doesn't allow iPhone applications to use VOIP services under its network

## Mobile Watch

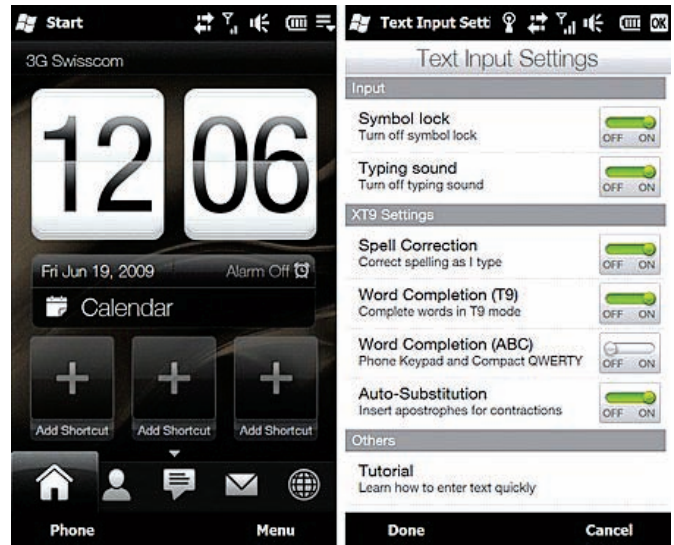
range of new user experiences for future Nokia devices. Next year, Nokia intends to start shipping Microsoft Office Communicator Mobile on its smart-phones, followed by other Office applications and related software and services in the future. These will include: the ability to view, edit, create and share Office documents on more devices in more places with mobile-optimised versions of Microsoft Word, Microsoft PowerPoint, Microsoft Excel and Microsoft OneNote.

## Touch and flo

With Windows Mobile 6.5 approaching launch readiness there is a leaked preview of TouchFLO 3D from HTC that

its sluggishness and of course the plain-jane looks. Some also found it to be little more than a cosmetic addition, not adding any usefulness to the interface. Enter TouchFLO 3D 2.6 with the promise of more colour, usefulness and user friendliness.

The most noticeable changes (at first sight) are of the menu system and the icons used to change tabs, as well as improved browsing of image and audio galleries with an all new landscape view for album art browsing. The calendar section has also seen a lot of sprucing up with many new view options. There are also large, easy to thumb, onscreen buttons for home, internet



are attractive and add a dash of much needed pizzazz to the interface, although some claim they bear a striking resemblance to the icons on Android-based handsets.

Reports also mention the sluggishness of videos when demonstrating this on certain

HTC handsets such as the HTC Touch Diamond 2, although these are cases of TouchFLO 2.6 being run on certain non-WM 6.5 based devices; undoubtedly optimisations will be made so that the final product should hopefully be a lot smoother. **d**



Give us your feedback at <http://www.thinkdigit.com/d/47773/>

has been doing the rounds on the internet. One of the biggest complaints against the TouchFLO interface has been

and people tabs; this will undoubtedly save time as every function is virtually a click or two away. The colourful icons

# X-SERIES

## 750 / 650W

**EXTREME DESIGN DELIVERS POWER AND PERFORMANCE FROM THE INSIDE OUT**

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**Beta time**

The third beta version of Opera 10 is now available online - this focuses on a more stable and faster performing solution

**Android creates Magic**

The HTC Magic running Android OS has sold over a million units, according to a statement made by HTC CEO Peter Chou

**Kumar Jhuremalani and Rossi Fernandes**

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The internet has developed to the point where many web sites are thought of more as applications, with browsers designed such that you launch applications from your desktop that are actually services running in a window.

One persistent problem with browsers has been that many have been plagued by bugs and security vulnerabilities. It seems that the more popular a browser gets, the more holes are discovered, often causing users to move from one browser to another. On the other hand, browser developers compete with each other by adding more and more features into their browser, turning some of them almost into bloatware, stuffed with features simply not needed by most users.

But if you have had enough of the bloatware and security vulnerabilities in your browser, you might not be aware of the scope available to you for change - there are more browsers out there than you think. Each of these browsers uses the rendering backend, or engine, that is used by the

popular browsers Firefox and Safari. They are therefore perfect for browsing, but each has been developed for different kinds of users, some of whom may want a large number of features, others, something as light as possible. Here, we introduce you to some of the alternatives, both for desktops and mobiles.

**K-Meleon  
If you need a lightweight Firefox-like browser**

Web site: <http://kmeleon.sourceforge.net>  
Latest version: 1.5.3  
Renderer: Gecko  
Download size: Approx 5 MB

The open source browser K-Meleon has had a small, but loyal following since it was launched back in 2000. At that time, it lacked many important features, but nine years down the line and it has caught up with the competition. Today, it's a robust and usable all-purpose browser, suitable for most users. It is also light on resources and consumes only around 12 MB of RAM while running with one tab open.

One of the better-known browsers, Opera, is liked by many simply because fact you get the complete package all in one go. Firefox, on the other hand, does require some degree of customisation in terms of



K-Meleon is a hearty competitor as an alternative browser

plug-ins and add-ons to get it up to speed. The K-Meleon browser is more like Opera, in that it comes most goodies built-in. It is feature-packed, but also has support for add-ons.

A built-in ad blocker, mouse gestures and a news feed reader are just some of the features that come with K-Meleon, so clearly you won't be missing out on anything major. One feature that speeds up the load time of K-Meleon is a loader application that sits in your system tray. Double-clicking it opens the browser within a second on almost any

Imaging: Chaitanya Surpur

# Browser Alternatives

We've taken a look at the other browsers out there and have found out some interesting browsers that will catch your fancy





## Dell playing smart

Dell's new Chinese handset called the Mini 3i has now surfaced; it is a 2G phone that runs Android OS

## Entourage fades

Outlook for Mac is going to replace the previous email client Entourage for Mac, in the next release of Microsoft Office for Mac

system. The only minor downside is that this uses a small amount of memory.

Moving to K-Meleon is trouble free. It might be a little confusing at first but you can easily import bookmarks from Opera, Internet Explorer and Firefox. K-Meleon offers high levels of customisations but much of this has to be done by editing text files rather than through menus and dialogue boxes. Those who like to dabble with customisation will no doubt enjoy this part of K-Meleon.

## Flock

### The complete package for social networking

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

Latest version: 2.5.2

Renderer: Gecko

Download size: Approx 12.7 MB

Flock basically a complete entertainment package aimed at those who are addicted to social networking. Resource usage is a bit on the higher side – with services such as the media bar and a tab open, it uses about



Flock gives you complete control of social networking and entertainment sites

70 MB of RAM.

Overall, Flock has a rather retro look to it and once installed, you are immediately greeted with options to log into the social networking sites, Facebook, MySpace and Twitter. It also has an integrated media bar that allows users to search through Youtube, Flickr or Truveo without interfering with the rest of the browser.

Other sidebars also help you sort between your feeds, social networking accounts, and other services such as maintaining blogs and media sharing.

Once you are logged into a social networking site, your information is saved and any updates can be viewed on the people sidebar, even when you are not actually on that particular page or tab.

The Web Clipboard is another useful feature of Flock, which allows you to highlight and drag random text to the sidebar which is then stored there for later use. Image uploading is equally easy with Flock.

Flock can be customised similarly to Firefox, using extensions; you can check them out at <https://extensions.flock.com/>

extensions/. You can also add more toolbars for entertainment purposes. However, it does not have separate themes.

As Flock is powered by the same technology that is used by the Mozilla Firefox 3 browser, it can use most of the extensions that are available for Firefox.

## Midori

### Tiny and Speedy

Web site: [www.twotoastes.de](http://www.twotoastes.de)

Latest version: 0.1.8

Renderer: WebKit

Download size: Approx 7.2 MB

Midori is an open source browser that works on the WebKit renderer. WebKit is



The simplistic charms of Midori

the same engine that is used by Mac OS X's Safari, and is also being used to develop mobile phone browsers.

The Midori browser is also a part of the Xfce desktop environment.

Midori does not come as an installation file, but instead in a .7z file containing the directly executable file. It is not impressive to look at, but is intended to be fast and light. Similarly to K-Meleon, Midori uses only about 12 MB of RAM with one tab open.

The progress bar of Midori is directly displayed on the address bar with a rather old-fashioned look. To get the best out of this browser you will need to customise it, but this might not suit everybody. It allows you to add styles, Netscape plugins and extensions, but you will have to do these manually, unlike other popular browsers.

Midori is a work in progress, but the developers are pretty enthusiastic about this open source browser and update it regularly.

## Arora

### The browser of the future?

Web site: <http://code.google.com/p/arora/>

Latest version: 0.8.0

Renderer: WebKit

Download size: Approx 9.7 MB

The Arora web browser is another open source project that was started by Adaptive Path in collaboration with the guys at Mozilla Labs. Together, they have come up with a concept browser that is meant to be the browser of the future. Arora is certainly

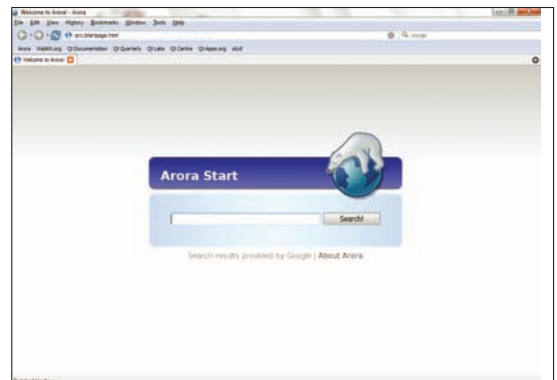
## Bitty

Many will have had the experience of wanting to search for something while surfing the web, but without having to switch to another tab or open a new window. With Bitty, this is now possible, as it works like a small browser within the browser you are currently using. Think of it as equivalent to picture-in-picture for TVs, but with browsers. Some examples of where you can use Bitty: iGoogle, Netvibes, PageFlake, etc. So you can continue reading the information, while browsing at the same time. Bitty is nothing fancy, it's just a plain browser with an address bar and a few navigation buttons, and that's it.

unique in its own way. It is intended to be an all-in-one solution that is to be used as an integrated desktop sharing environment.

Currently, it is still in the works, but this browser tries to accomplish a lot, with users can sharing their desktops online for a more interactive experience, with different modes of communications (IMs, Emails, voice chat, etc.) and various mouse gestures.

At this point in time Arora still needs a considerable amount of work, but it does



Futuristic, but still needs work. As just a browser, Arora is a great Webkit powered alternative to Safari and Chrome.

have the basic necessities of a browser. The current build includes the following features: session manager, privacy mode, good search engine management, a ClickToFlash plugin, a download manager and it also comes in 30 different languages.

## xB Browser

### For when you want to be anonymous

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

Latest version: 2.0.0.20c

Renderer: Gecko

Download size: Approx 10.2 MB

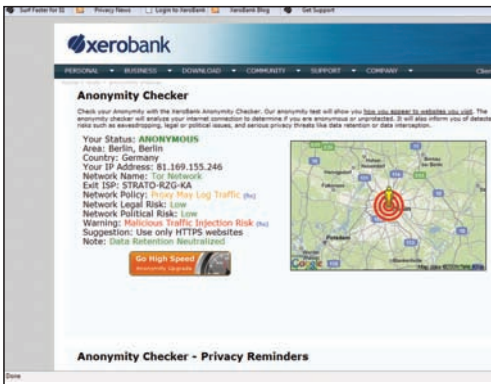
xB stands for XeroBank, which was formerly known as Torpark, and is an open source anonymous browser. The xB Browser is secure in the sense that it erases everything, and doesn't store unwanted elements such as cache or browser history, and hence makes the entire browsing session anonymous.

## Official office

Microsoft and Nokia have struck a deal and are now going to introduce the official versions of MS Office for Nokia smartphones such as the E-Series

## Goa-IDC goes wireless

State owned BSNL telecommunications is partnering with the Goa Industrial Development Corporation to provide a wireless broadband network to connect all the 19 industrial estates that are under Goa-IDC



The anonymity checker from xB that uses the tor network

Other features of xB include no saved passwords or forms, download history automatically wiped after the download, and cookies are accepted from sites, but are immediately erased once xB is closed.

xB is not a new browser that has been built from scratch, and once installed, you'll see similarities to Firefox. The reason is that this browser has been built on Firefox and is secure and anonymous by means of changing the standard Firefox configurations.

Once you fire up xB, your anonymous status is displayed on the screen, you also see how your browser's data packets are being routed through the Tor network. A small drawback here is that a site such as Google will open in accordance to the region your IP is in.



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Additional useful features of this browser are that it utilises approximately only 5 MB of RAM even with a second tab open and you also have the option to disable images. Thanks to xB, you can bypass firewalls and other security features and at the same time remain secure yourself when it comes to browsing through cyberspace.

## Epiphany GNOME gets some game

Web site: <http://projects.gnome.org/epiphany/>  
Latest version: 2.22.3  
Renderer: Gecko  
Download size: Approx

Epiphany is an open source browser intended mainly for Linux, but also with versions for BSD and Mac OS X.



The customisable browser meant for GNOME

Epiphany is a descendant of Galeon, another web browser which is quite old now (last updated in 2006), and has been created by the same person who started Galeon - Marco Pesenti Gritti.

The general layout and user interface of Epiphany is different, but overall this browser is similar to Firefox, with the same customisation options through extensions and plug-ins. Instead of themes, Epiphany allows users to customise their user interface. Bookmarks are arranged according to topics rather than folders - you can assign multiple topics to any bookmark, rather than saving it in a particular folder. So, with Epiphany, gone are the days where you forget which folder which bookmark was saved in. Privacy and security features are also present and easily configurable.

When we started Epiphany, we felt that it has a strong resemblance to Firefox as well as Internet Explorer, but at the same time the fonts used are smooth and give a soft and comfortable overall appeal.

Epiphany is definitely something GNOME users should give a try if they haven't already, as this browser can give Firefox a good run for its money.

## Mobile browsers Skyfire

The real mobile browser alternative  
Web site: [www.skyfire.com](http://www.skyfire.com)  
Latest version: 1.0

Renderer: Gecko  
Download size: Approx 2.1 MB

Skyfire is a mobile web browser that really comes with all important features and has good cross-platform support: Windows Mobile 5, 6, 6.1, Symbian OS S60 v9.x and even HTC Touch Diamond.

With this browser you can freely browse and watch videos on sites such as YouTube, Hulu, etc., as it comes with full support for Adobe Flash, Silverlight 2.0 and QuickTime. No need to install additional plug-ins.

We tested the Skyfire browser on a mobile phone running Windows Mobile 6.0. It was easy to install and you also get



Skyfire feels like a desktop browser

## Skweezer

Skweezer is a service available for free on the internet that gives you a stripped down version of any web site. This is especially beneficial to those using mobile devices to surf the web as Skweezer eliminates all the images, tables, etc. and you are presented with a straightforward simple page with just text links. Check out Skweezer at [www.skweezer.com](http://www.skweezer.com)

the option to install a search bar on the home screen. When browsing, Skyfire gives a full browser experience and the entire page is visible in a shrunken version. You can tap on the screen to zoom in to sections of a page.

Cookies and bookmarks can also be stored with Skyfire. Currently, this is one of the best alternative mobile browsers out there and we recommend that you give it a try.

## Fennec

A revamped mobile browser from Mozilla

Web site: <http://www.mozilla.com/en-US/mobile/>  
Latest version: 1.0  
Renderer: Gecko  
Download size: Approx 8.7 MB

Fennec is currently in the test stages, but we felt this deserves a mention as the developers seem to have done quite a good job so far. Fennec is being developed by the



Fennec browser showing the different tabs

team over at Mozilla and is based on Firefox.

Though it is intended for hand-held and mobile devices, it can currently be used on Windows, Linux or Mac OS X. When we tried it out, the changes to the interface came as a pleasant surprise. Firefox has been given a complete revamp for Fennec and we feel it looks very good. It looks really simple, but at the same time will give the mobile device a very PC-like feel. Fennec just has a simple address bar and refresh button next to it with instructions and arrow keys. These are meant to be used either by touch controls (for devices that support them) or by using the arrow keys on the device. The browser slides out to reveal settings and other features on one side and the other shows tabs, giving navigation a totally new approach.

Once Fennec is ready, we're sure it will be one of the best mobile browsers out there. **d**

**Bespin**

(bespin.mozilla.com) is Mozilla's HTML5-based text editor "in the cloud"; it works in the latest Firefox and Safari

**Geolocation API**

HTML5 adds a Geolocation API, so your browser can tell websites your current location

# Cooking With HTML 5

What's new, and what can you do with it?

**Nimish Chandiramani**

readersletters@thinkdigit.com

As users, it doesn't really matter to us how the sites we visit are built. Overused divs, tables for layout – who cares, as long as the sites look and work fine?

As developers, though, it all matters. And as the web becomes increasingly aware of semantics – the context of content – it also matters that we build pages that the search engines understand. And that's why there's HTML 5.

HTML 5 gets a lot of press for one feature alone: the `<video>` tag, which lets you embed Ogg video into pages, without needing plugins like Flash or Silverlight. That tag, however, is just part of a much bigger design – to make the tags indicative of what the pages contain.

## Tagged right

Most web pages you'll visit have a layout that looks something like this:

```
<body>
<div id="header">
<!--your page header and logo go here-->
<div id="nav">
<!--your navigation links go here-->
</div>
</div>
<div id="content-area">
<div class="article">
<h2>This is a heading</h2>
<p>This is some text.</p>
</div>
<div class="article">
<h2>This is another heading</h2>
<p>This is some more text.</p>
</div>
</div>
<div id="sidebar">
<!--your sidebar information goes here-->
</div>
<div id="footer">
<!--your copyright and contact information goes here-->
</div>
</body>
```

Pretty standard stuff, that. The problem, however, is that divs don't really mean anything. They tell the browser that they're distinct areas of the document with "stuff" inside them, but that's it. With HTML 5, however, we get structural elements that

actually tell us what's inside:

The `<header>` element to put all introductory information, like your logo, a brief description of the page, and so on. You can also use these as content headers, which can contain the title.

The `<nav>` element, to put your primary navigation links in.

The `<section>` element, to segregate your content into chapters, categories, or anything similar.

The `<article>` element, where you can stick your primary content.

The `<aside>` element, where you can put stuff that's tangentially related to the content around the aside element, and which could be considered separate from that content, according to the W3C. This means sidebars, pull-quotes, and other such content that isn't part of the main flow.

Finally, the `<footer>` element, where you can put copyright notices, contact details, and so on. Like `<header>`, you can also use this for article footers – date published, number of comments, and so on.

As you can see, the new tags make much more sense – both when you're creating a page, and if you have to edit a page someone else created.

## Putting it together

Now that we've got new tags to work with, we can set about rebuilding our page, starting with the easiest bits. The header is simple enough:

```
<header class="mainhead">
<h1>This is the page header</h1>
<nav>
<ul>
<li><a href="somewhere.htm">Navigation 1</a></li>
<li><a href="somewhere.htm">Navigation 2</a></li>
<li><a href="somewhere.htm">Navigation 3</a></li>
</ul>
</nav>
</header>
```

It's not absolutely essential to have the navigation links within the header, but since they are an "introduction" to what's on your site, it makes sense to put them there.

## The other simple element is the aside:

```
<aside>
<ul>
<li><!--a calendar widget--></li>
<li><!--an archive widget--></li>
</ul>
```

```
</aside>
```

This is a very WordPress-like sidebar, with widgets in an unordered list. You can use divs too, if you like.

## There's also the sections:

```
<section id="articlesnippets">
<article class="snippet">
<!--article preview goes here-->
</article>
</section>
```

...and so on. If you use the HTML 5 elements the way you would divs, you're on the right track.

## Articles of interest

Apart from the obvious `<article>` element, HTML 5 gives us several other elements to add richness to content. The first is `<hgroup>`, which lets us group headings (for the benefit of search engines, which would see ungrouped headings as separate content items):

```
<article class="full">
<header class="article-header">
<hgroup>
<h1>This is the main heading</h1>
<h2>This is the subheading</h2>
<h3>Author</h3>
</hgroup>
</header>
<!--article content goes here-->
</article>
```

If you have images within the content, you can use the `<figure>` element to show it – adding more significance to its purpose:

```
<figure id="figure-1">
<legend>This becomes the figure's caption</legend>

</figure>
```

This doesn't have to be limited to images – just replace the `<img>` with `<audio>` or `<video>`, and you've got yourself captioned audio or video.

There are a bunch of little additions for your content, too – use the `<mark>` tag (or `<m>`; the spec is still undecided on which) to highlight text that you think is significant (you can use CSS to decide how that looks):

```
<p>This was a triumph. I'm making a note here: <mark>HUGE SUCCESS</mark>.</p>
```

You can also mark off time (`<time>`), or other units (`<meter>`):

```
<p>I made <meter>Rs. 300</meter> at <time>10:15 AM on August 5</time>.</p>
```

But this is just the boring, utilitarian part.

## Google Wave

Google Wave will be based heavily on HTML5, and will showcase most of its features, including the ability to store data on your hard disk

## Developer corner

HTML 5 enables much coolness, as well.

### Mr Fancy Pants

Another one of HTML 5's talked-about features is the <canvas> element. It conjures up images of a large, editable area that users can draw on, but that's hardly the case. By itself, the <canvas> element is not much – it needs JavaScript to really get it to do something. And that something could potentially be a Flash-killer, if this demo combination of Twitter, <canvas> and <audio> is anything to go by: <http://9elements.com/io/projects/html5/canvas/>.

Let's try a basic canvas demo for ourselves. It's simple enough to create a blank 200x200 canvas to start scribbling on:

```
<!DOCTYPE html> <!--no more fancy DOCTYPEs-->
<html>
<head>
<title>Canvas Demo</title>
</head>
<body onload="drawSomething();" >
<canvas id="test" width="200"
height="200">
</canvas>
</body>
</html>
```

The drawing part comes from JavaScript. The only shape you can draw directly on a canvas is the rectangle; everything else must be drawn using paths, lines or curves. We won't go into all the possible functions here, but here are some of the basics:

```
fillRect(x-position,y-
position,width,height): for a solid
rectangle
strokeRect(x-position,y-
position,width,height): for just the
outline
clearRect(x-position,y-
position,width,height): to delete the
area under the rectangle
beginPath(): start drawing a path
closePath(): stop drawing
stroke(): closes the path, and draws
the outline
fill(): closes the path, and turns it into
a solid shape
```

Once you've begun a path, you've essentially enabled a pencil (or pen, or marker, if you want), which you can command to do what you want:

```
moveTo(x,y): move to this point
without drawing
lineTo(x,y): draw a line from the
current position
```

This is all we'll use for now. Like any other JavaScript, you can put the code within the <script> tags. Here's what the drawSomething() function looks like:

```
function drawSomething()
{
```

```
//get the canvas
var canvas = document.
getElementById('test');
//now get it for drawing
var board = canvas.
getContext('2d');
//create a filled rectangle
board.fillRect(40,25,50,30);
//draw a random shape
board.beginPath();
board.moveTo(10,10);
board.lineTo(30,15);
board.lineTo(20,50);
board.lineTo(100,150);
board.lineTo(30,150);
board.fill(); //closes the shape
}
```

And here's the result:



The resulting scribbles

This is just to give you an idea of what you can do with canvas; if you're up to it, you can go over to Mozilla's excellent canvas tutorial for more: [https://developer.mozilla.org/en/Canvas\\_tutorial](https://developer.mozilla.org/en/Canvas_tutorial).

There are several other neat features, too, including support for drag-and-drop. You can make any element draggable by simply adding the draggable="true" attribute, and then use JavaScript to handle the result of someone actually dragging the element.

### Now, make it work

There's a lot more HTML 5 than our page count will permit, but a good question arises at this point: "Will it work in all browsers?" A large portion of the HTML 5 spec is supported by the latest browsers – Firefox 3.5, Safari 4, and Opera 10 beta – so you can actually create a complete HTML 5 site and have it work normally for any visitors who don't use IE. For IE users, you'll have to include the HTML 5 Enabling Script thus:

```
<!--[if IE]>
<script src="http://html5shiv.
googlecode.com/svn/trunk/html5.
js"></script>
<![endif]-->
```

Or, you could just tell them to stop using IE, and we'll all be happy in our HTML 5-enabled world.

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**Bespin**

(bespin.mozilla.com) is Mozilla's HTML5-based text editor "in the cloud"; it works in the latest Firefox and Safari

**Geolocation API**

HTML5 adds a Geolocation API, so your browser can tell websites your current location

# Cooking With HTML 5

What's new, and what can you do with it?

**Nimish Chandiramani**

readersletters@thinkdigit.com

As users, it doesn't really matter to us how the sites we visit are built. Overused divs, tables for layout – who cares, as long as the sites look and work fine?

As developers, though, it all matters. And as the web becomes increasingly aware of semantics – the context of content – it also matters that we build pages that the search engines understand. And that's why there's HTML 5.

HTML 5 gets a lot of press for one feature alone: the `<video>` tag, which lets you embed Ogg video into pages, without needing plugins like Flash or Silverlight. That tag, however, is just part of a much bigger design – to make the tags indicative of what the pages contain.

## Tagged right

Most web pages you'll visit have a layout that looks something like this:

```
<body>
<div id="header">
<!--your page header and logo go here-->
<div id="nav">
<!--your navigation links go here-->
</div>
</div>
<div id="content-area">
<div class="article">
<h2>This is a heading</h2>
<p>This is some text.</p>
</div>
<div class="article">
<h2>This is another heading</h2>
<p>This is some more text.</p>
</div>
</div>
<div id="sidebar">
<!--your sidebar information goes here-->
</div>
<div id="footer">
<!--your copyright and contact information goes here-->
</div>
</body>
```

Pretty standard stuff, that. The problem, however, is that divs don't really mean anything. They tell the browser that they're distinct areas of the document with "stuff" inside them, but that's it. With HTML 5, however, we get structural elements that

actually tell us what's inside:

The `<header>` element to put all introductory information, like your logo, a brief description of the page, and so on. You can also use these as content headers, which can contain the title.

The `<nav>` element, to put your primary navigation links in.

The `<section>` element, to segregate your content into chapters, categories, or anything similar.

The `<article>` element, where you can stick your primary content.

The `<aside>` element, where you can put stuff that's tangentially related to the content around the aside element, and which could be considered separate from that content, according to the W3C. This means sidebars, pull-quotes, and other such content that isn't part of the main flow.

Finally, the `<footer>` element, where you can put copyright notices, contact details, and so on. Like `<header>`, you can also use this for article footers – date published, number of comments, and so on.

As you can see, the new tags make much more sense – both when you're creating a page, and if you have to edit a page someone else created.

## Putting it together

Now that we've got new tags to work with, we can set about rebuilding our page, starting with the easiest bits. The header is simple enough:

```
<header class="mainhead">
<h1>This is the page header</h1>
<nav>
<ul>
<li><a href="somewhere.htm">Navigation 1</a></li>
<li><a href="somewhere.htm">Navigation 2</a></li>
<li><a href="somewhere.htm">Navigation 3</a></li>
</ul>
</nav>
</header>
```

It's not absolutely essential to have the navigation links within the header, but since they are an "introduction" to what's on your site, it makes sense to put them there.

## The other simple element is the aside:

```
<aside>
<ul>
<li><!--a calendar widget--></li>
<li><!--an archive widget--></li>
</ul>
```

```
</aside>
```

This is a very WordPress-like sidebar, with widgets in an unordered list. You can use divs too, if you like.

## There's also the sections:

```
<section id="articlesnippets">
<article class="snippet">
<!--article preview goes here-->
</article>
</section>
```

...and so on. If you use the HTML 5 elements the way you would divs, you're on the right track.

## Articles of interest

Apart from the obvious `<article>` element, HTML 5 gives us several other elements to add richness to content. The first is `<hgroup>`, which lets us group headings (for the benefit of search engines, which would see ungrouped headings as separate content items):

```
<article class="full">
<header class="article-header">
<hgroup>
<h1>This is the main heading</h1>
<h2>This is the subheading</h2>
<h3>Author</h3>
</hgroup>
</header>
<!--article content goes here-->
</article>
```

If you have images within the content, you can use the `<figure>` element to show it – adding more significance to its purpose:

```
<figure id="figure-1">
<legend>This becomes the figure's caption</legend>

</figure>
```

This doesn't have to be limited to images – just replace the `<img>` with `<audio>` or `<video>`, and you've got yourself captioned audio or video.

There are a bunch of little additions for your content, too – use the `<mark>` tag (or `<m>`; the spec is still undecided on which) to highlight text that you think is significant (you can use CSS to decide how that looks):

```
<p>This was a triumph. I'm making a note here: <mark>HUGE SUCCESS</mark>.</p>
```

You can also mark off time (`<time>`), or other units (`<meter>`):

```
<p>I made <meter>Rs. 300</meter> at <time>10:15 AM on August 5</time>.
```

But this is just the boring, utilitarian part.

## Google Wave

Google Wave will be based heavily on HTML5, and will showcase most of its features, including the ability to store data on your hard disk

## Developer corner

HTML 5 enables much coolness, as well.

### Mr Fancy Pants

Another one of HTML 5's talked-about features is the <canvas> element. It conjures up images of a large, editable area that users can draw on, but that's hardly the case. By itself, the <canvas> element is not much – it needs JavaScript to really get it to do something. And that something could potentially be a Flash-killer, if this demo combination of Twitter, <canvas> and <audio> is anything to go by: <http://9elements.com/io/projects/html5/canvas/>.

Let's try a basic canvas demo for ourselves. It's simple enough to create a blank 200x200 canvas to start scribbling on:

```
<!DOCTYPE html> <!--no more fancy DOCTYPEs-->
<html>
<head>
<title>Canvas Demo</title>
</head>
<body onload="drawSomething();" >
<canvas id="test" width="200"
height="200">
</canvas>
</body>
</html>
```

The drawing part comes from JavaScript. The only shape you can draw directly on a canvas is the rectangle; everything else must be drawn using paths, lines or curves. We won't go into all the possible functions here, but here are some of the basics:

`fillRect(x-position,y-position,width,height)`: for a solid rectangle  
`strokeRect(x-position,y-position,width,height)`: for just the outline  
`clearRect(x-position,y-position,width,height)`: to delete the area under the rectangle  
`beginPath()`: start drawing a path  
`closePath()`: stop drawing  
`stroke()`: closes the path, and draws the outline  
`fill()`: closes the path, and turns it into a solid shape

Once you've begun a path, you've essentially enabled a pencil (or pen, or marker, if you want), which you can command to do what you want:

`moveTo(x,y)`: move to this point without drawing  
`lineTo(x,y)`: draw a line from the current position

This is all we'll use for now. Like any other JavaScript, you can put the code within the <script> tags. Here's what the `drawSomething()` function looks like:

```
function drawSomething()
{
```

```
//get the canvas
var canvas = document.
getElementById('test');
//now get it for drawing
var board = canvas.
getContext('2d');
//create a filled rectangle
board.fillRect(40,25,50,30);
//draw a random shape
board.beginPath();
board.moveTo(10,10);
board.lineTo(30,15);
board.lineTo(20,50);
board.lineTo(100,150);
board.lineTo(30,150);
board.fill(); //closes the shape
}
```

And here's the result:



The resulting scribbles

This is just to give you an idea of what you can do with canvas; if you're up to it, you can go over to Mozilla's excellent canvas tutorial for more: [https://developer.mozilla.org/en/Canvas\\_tutorial](https://developer.mozilla.org/en/Canvas_tutorial).

There are several other neat features, too, including support for drag-and-drop. You can make any element draggable by simply adding the `draggable="true"` attribute, and then use JavaScript to handle the result of someone actually dragging the element.

### Now, make it work

There's a lot more HTML 5 than our page count will permit, but a good question arises at this point: "Will it work in all browsers?" A large portion of the HTML 5 spec is supported by the latest browsers – Firefox 3.5, Safari 4, and Opera 10 beta – so you can actually create a complete HTML 5 site and have it work normally for any visitors who don't use IE. For IE users, you'll have to include the HTML 5 Enabling Script thus:

```
<!--[if IE]>
<script src="http://html5shiv.
googlecode.com/svn/trunk/html5.
js"></script>
<![endif]-->
```

Or, you could just tell them to stop using IE, and we'll all be happy in our HTML 5-enabled world. ☑

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Job satisfaction

A Korn/Ferry institute study of respondents from 70 countries revealed that 50 per cent of executives are dissatisfied with their current position in the work place

Make resumes error free

Recent research done by TeamLease Services, found that 90 per cent of the randomly selected 500 CVs had some or the other form of error. Such resumes are just not considered

Using web services is no longer a one time activity, it is now a part of our lives, and a serious investment of time, energy and money. Users now have a need to trust these sites as much as a jeweler, doctor or a mechanic. This is where we come in...

Team Digit

Search engines still don't make as much sense of the web as they should have when they were first introduced. Any search will give you a staggering number of hits for services you are looking for, but the best of the lot still spread through word of mouth. For a lay user, figuring out which web service is safe, reliable and accurate is still as difficult as it was ten or twenty years ago. Many users are forced to use a particular service merely because they were not aware of a better alternative, by force of habit, or because everyone they know uses that particular service only.

The internet is no longer a resource for research, entertainment purposes or just a casual pass time. There are many services available, and while these are convenient, they are also a serious investment. Time, energy and money pass on to internet services, and it is disappointing when these are not reflected in the benefits to the user. Users now have a basic need to be online and connected all the time, and stay updated on any platform they have access to: a desktop computer, a netbook in a coffee shop or on their mobile phones. Using web services is no longer a one time activity, it is now a part of our

lives, and users have a need to trust these sites as much as a jeweller, doctor or a mechanic. This is where we come in.

Our categories range from basic services including search, social networking and email, to more real world services such as travel, real estate and tech shopping, as well as cloud based services such as online office suites and image editors. The test procedure itself was an elaborate affair. We checked the usability of the sites on different platforms, and compatibility with different browsers. We looked below the superficial stuff, into the technologies driving the sites; how fast and secure they were, how well the search functions worked, how thorough the help or FAQ sections were, and how comprehensive the services offered were. Throughout the tests, we kept in mind different usage scenarios, and deeply considered how the services were most likely to be used, and what kinds of needs they fulfilled. Some of the winners come as no surprise, but some are hidden gems that don't show up in the first few hits of major search engines. We present to you the Web Awards, an effort in making sense of the internet.



# The Web Awards 2009

# Search engines

Search engines organise for you the vast streams of information on the internet and even help you make sense of it all. Consequently, which search engine to use has always been a matter of contention for web users, especially with Bing entering the fray.

To drill down to the short-listed candidates, we ran a few exploratory searches on the most popular as well as many obscure engines, including **ask.com**, **cuil.com**, **exalead** and **alltheweb**. We

## thinkdigit.com news

The purse strings are loosening, and it appears as much as \$80 to \$100 million is likely to fall out, as Microsoft decides to boldly enter what is clearly Google's domain; Search. It intends to create a new search engine which it believes will show people what they've always been missing in search results. Although a casual observer might ask "based on what experience"? To read more, go to <http://www.thinkdigit.com/d/thinkdigit/mvsg/>

found that most of them could not deliver consistently relevant results, especially when it came to local search terms.

Since at the time of testing Yahoo and Bing still haven't consolidated their backends, we've considered them separately. To eliminate user bias, on certain search terms, we decided to use the BlindSearch ([blindsearch.fejus.com](http://blindsearch.fejus.com)) tool. The results are displayed in three separate columns which

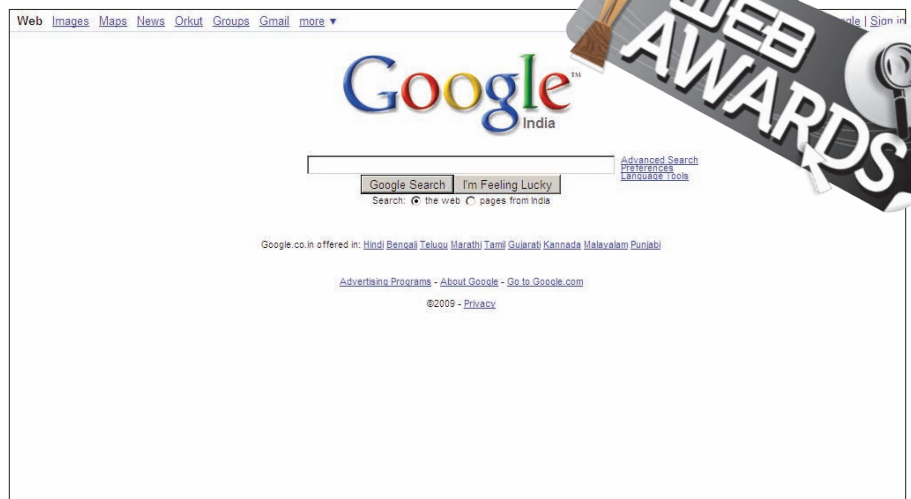
## SEARCH ENGINES FOR YOUR EVERY NEED

### For realtime search

If you want to know what's happening on the internet at any point in time, head over to [icerocket.com](http://icerocket.com) to search for blogs and blog trends. It's even got a nifty RSS builder tool. Another one is [collecta.com](http://collecta.com); this displays your search results as a continuous flow that's refreshed every few seconds. Head over to [oneriot.com](http://oneriot.com) or [scoopler.com](http://scoopler.com) for the latest trending topics in the web 2.0 world from sources such as [twitter.com](http://twitter.com). The trending topics are all neatly sorted into categories: business, technology and music.

### For your audio-visual needs

Head over to [blinx.com](http://blinx.com) to search through over 35 million hours of video. Music is more your taste? Go to [fizy.com](http://fizy.com), simply type the



keep changing randomly with each term. Each relevant result appearing closest to the top was awarded a point. We created a mixed bag of search terms in different categories. Some terms were general, such as Indian economic policy, while a whole category was devoted to terms of local relevance such as sweet shop mumbai, thermocol balls near vashi, Bandra-worli sea link map, ganesh chaturthi, and roti. The most fun category of search terms was the set of terms used to determine the indexing capabilities of the search engines. Here we had to come up with random, obscure strings of sentences such as evolution of "samurai crabs". These would determine if the search engine is capable of crawling for obscure bits of information. Then a whole set of terms were tried that were time sensitive, such as swine flu and Leno show. Since image

### In the blind test, Google and Bing ran neck and neck. While Yahoo didn't garner many points

search is one of the most used features, we settled on a few image terms as well. In the blind test, Google and Bing ran neck and neck. While Yahoo! didn't garner many points. That put Google and Bing in the lead for the rest of the categories of search. As far as calculations were concerned, both Bing and Google were fairly similar so we decided to raise the bar, and queried speed of light in furlongs per fortnight. Google calculator displayed the result correctly, while Bing pointed to the result. Bonus points for Google on that one. For local search, let's take the case of mumbai sweet shop. Google

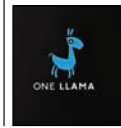
returned literally hundreds of results with direct maps and direction support that worked quite well. There were even reviews available for some of the listings. Bing on the other hand returned only a handful of local results; six to be precise. It had map direction and the capability of reviews, but none were available for our search. Also, driving directions didn't work. For Roti, Bing, Google and Yahoo! offered similar results. However, Bing showed a few videos right at the top. Other than these, as far as the index size or number of results go, Google was ahead. For images, Google and Bing were almost the same, while Yahoo! certainly lagged behind for difficult searches such as "Naneghat map".

Going by overall scores and relevance of results, Google was the winner. But certainly not by a mile, and Bing is close on its heels. With the imminent integration of the two runners up, Bing may just have some tricks up its sleeve in the near future to overthrow the reigning champion. But Google has also revamped itself with Caffeine, so we're in for a lot of action in the months to come. **d**



**A deal in the offing**

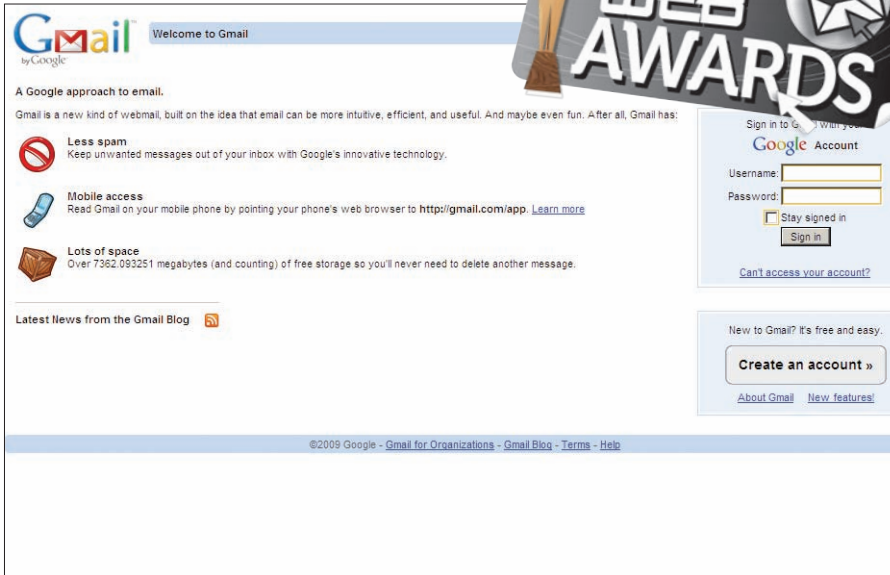
MySpace is slated to buy the music recommendation service iLike in an effort to help drive stickier traffic and ultimately improve revenue generation from the MySpace user base



**OneLlama.com**

An online radio station that aims to predict human behaviour so as to serve you with the perfect music even before you crave it

**Email**



**thinkdigit.com news**

With just two simple sentences at the end of an email, you can now eliminate the 'Sponsored Links' that show up on the side of an email in your inbox.

The sentences were based on the logic laid forth by blogger Joe McKay, who wrote in a blog post on his site that all you need to do is mention catastrophes or tragedies in your mail for Gmail to not put up ads. To read more, go to <http://www.thinkdigit.com/d/48628/>

Word, Excel or PowerPoint document can be instantly opened for reading or editing, straight from the email. Transliteration is another feature of Gmail.

Also important is Gmail Labs – this allows users to customise their email experience even further. Mouse gestures, offline mode, keyboard shortcuts, interface tweaks – these are some of the Labs features that can be activated in Gmail. Recently, Gmail has added the feature of allowing users to import their emails and contacts from other email services such as Hotmail, Yahoo!, or any others that use POP3. With this you won't really need to log into any other email service other than Gmail.

The few drawbacks of Gmail – yes there are some – include the distracting Ad line: some might like this, while many of us don't. Another thing is that you can't send .exe files as attachments, even if it is wrapped in a zipped file. According to

No doubt, many of you already have multiple email accounts registered with different email services. Services have changed much in recent years with even email protocols changed from the evergreen POP3 to the new standards of IMAP. Here we assess how these email services have evolved with the times and which one is the best optimised to suit the needs of everybody.

above SSL. Along with POP3 support, it has IMAP support, so that you can remotely access your email from anywhere without downloading it to your PC. The IMAP feature is not found in other email services.

Gmail allows users to manage their emails more efficiently with filters, colour

**With the calendar, your events are sent as email notifications, so you don't forget anything**

We looked through a number of email services such as Gmail, Yahoo!, Rediffmail, Indiatimes, Windows Live and even In.com. We looked for ease of registration, how easy it was to organise emails, storage options, email protocols, security options and any other features these services could provide.

After going through all the features and assessing usability, the best email service according to us is Gmail. We came to a unanimous decision and feel you all will agree, it's simple and one of the most used services on the internet. Gmail gives you ample customisation options along with the possibility to be just used for emails alone. With a Gmail account, your inbox has 7.5 GB of available storage space for both emails and attachments. The attachment size provided by Gmail is also the largest at 25 MB. The security features in Gmail also push it above the others: not only does it have SSL, it also provides TLS (Transport Layer Security) which is a step

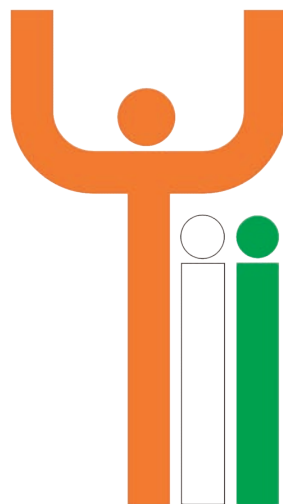
co-ordinated labels, a search feature that works brilliantly (thanks to Google of course). Along with just email functions, you can chat at the same time as checking your emails, and with Google Docs, any



Things your mommy never told you about Gmail <http://www.thinkdigit.com/d/48628/>

Gmail, this is a security issue – a fair point, but we feel there should be a better way to handle this. Also, no images can be added to the signature with BB codes or html codes.

Yahoo! and Rediffmail were also in the running to win the Digit Web Award for email services, but they simply lack the number of features of Gmail. Though Yahoo!'s storage is unlimited, the attachment size is limited to 10 MB, it does not support IMAP – but it does allow users to chat. One thing we noticed with Yahoo! was that you also have the option to create a @ymail.com id – it seems somebody was trying to copy the successful category winner. Rediffmail also has unlimited storage, but a 20 MB attachment limit and does deserve a mention for being extremely plain and simple to use. Rediffmail also has great transliteration features when sending emails. **d**



Digit has decided to compile a list of Young Indian Innovators who are changing our world through tech. Send your nominations to [yii@thinkdigit.com](mailto:yii@thinkdigit.com). Visit [www.thinkdigit.com/yii](http://www.thinkdigit.com/yii) for more information

**YOUNG INDIAN INNOVATORS**

**They're watching**

45 per cent of employers in the US say they use social networking sites such as Twitter, Facebook, LinkedIn and MySpace, to research a candidate before recruitment



**Twitter for businesses**

Read our June 2009 anniversary special for more if you missed it

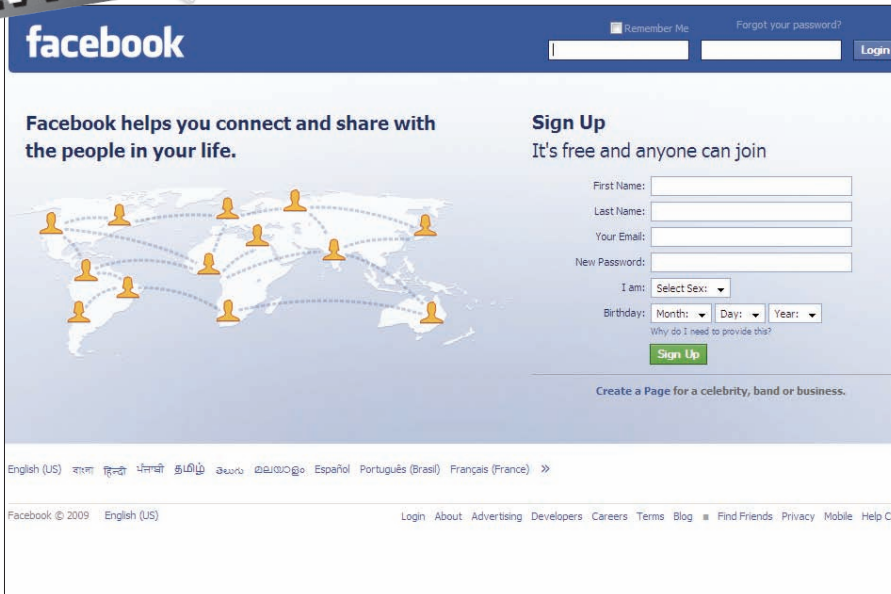


# Social networking

**Network with Digit**

The Digit community is active on many social networking sites, apart from the forums over at [www.thinkdigit.com/forum](http://www.thinkdigit.com/forum). Look up the "Digitindia" group on Orkut, which is the official Orkut Digit community. We can be found on Facebook at [www.facebook.com/digitindia](http://www.facebook.com/digitindia). We answer questions and interact with our readers on these platforms. Follow us on [www.twitter.com/digitindia](http://www.twitter.com/digitindia) for real time updates.

To compare the multitude of options available, we looked at the overall usability and drew up extensive lists of features such as application support availability, community interaction, search proficiency, ability to import contacts from other sources and privacy options. When we look at statistics, Orkut and Facebook clearly emerge as a class apart. What ensued next was a long drawn jury debate over which one should be crowned the winner. Facebook offers the best modular privacy features that let you choose to a great extent what part of your profile can be viewed by whom. It allows you to create specific lists for friends and give access rights to content on your profile. Orkut, on the other hand,



According to a recent study by Tata Consultancy Services on the web 2.0 generation, across 14,000 high school children in 12 Indian cities, aged between 12 and 18, over 63 per cent of urban students spent over an hour online daily and as many as 93 per cent were hooked on social networking. It comes as no surprise then, that social networking web sites are among the most visited web sites today, sometimes even surpassing search engines.

Most of us like to reconnect with our past friends, discover new people, browse and comment on photos and generally while away time playing games or engaging in a host of other activities on social networking web sites. These are some of the features that are offered by today's social networking web sites. Now let's get on to the process of finding out which is the best social networking web site out there? To come to a conclusion we decided to first leave out the usual suspects - Orkut and Facebook - and look at some other alternatives (of both *desi* and other origin)



Improved search feature and FriendFeed on Facebook  
<http://www.thinkdigit.com/d/43939/>

for strong contenders.

We found the Indian web scape crowded with numerous *me too* alternatives. Sifting through the hoards we came to some of the better ones. There was [bharatstudent.com](http://bharatstudent.com), which is more popular in terms of page views than most Indian networks. Among the Indian networking web sites are *ibibo*, *Yaari*, *BigAdda* and *Minglebox*. Each has its own small USP and focus. For instance, *ibibo* was more of a talent showcase, while *Bharatstudent* has a lot of resources on education, and *BigAdda* hosts celebrity blogs including that of *Amitabh Bachchan*. However, some web sites can be described as nothing more than shady hangouts where fake profiles and objectionable content abound. Others just lie abandoned. What good is a social networking web site without people, right?

had the first mover advantage in terms of user base with its simplicity; although Facebook is not far behind. Orkut scored high on community interaction too - with more real world offline activities such as treks and concerts being promoted there rather than on Facebook. But we all know Orkut has a dark underbelly too; shadowy characters are always lurking at the fringes of your profile. Facebook has more *real* people. It allows you to interact with them in many more different ways - thanks in part to its superior applications and games base. Although both Orkut and Facebook support applications, people on Facebook actually use these applications much more than the same features on Orkut. The status message feature in Facebook allows friends to stay connected in real time, and is a great mechanism to encourage users to interact more with each other. People can also "Like" or add comments to the different activities of friends, which is not as static as the comment feature on Orkut albums. Facebook is thus a much more dynamic environment for social networking, when compared to Orkut, and we've noticed that communities, events and the profile pages move a lot faster than the Orkut equivalents. For all of these reasons and many others, Facebook won; albeit with a small margin. **d**

**SPECIAL MENTION**

MySpace has been involved in several initiatives lately to increase its market share in India. It hosted a series of 'secret shows' and events in the metro cities. To attend these concerts, you needed to have a MySpace profile. Thousands of people made profiles and queued up outside these events with printouts of their profiles in hand. Gimmicks aside, MySpace is a pretty

user friendly web site. It's a good place to find new music from emerging artists from all over the world and especially India. The reason for this is that the web site is very artist friendly and allows them to have embedded players on their profile pages. Several artists choose this medium to showcase never heard before music, and this makes for interesting browsing.

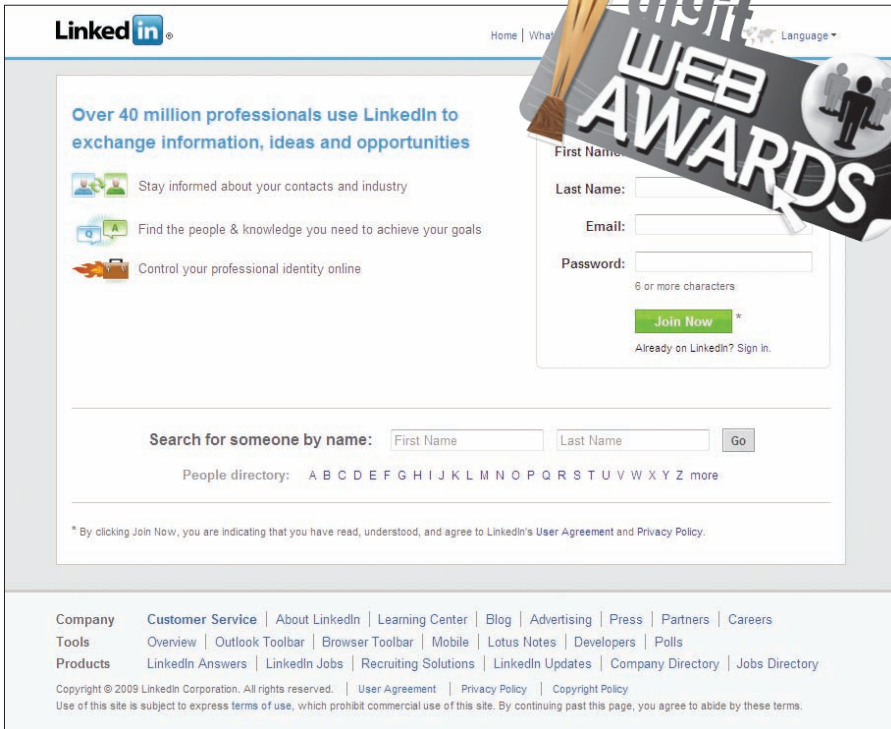
**MyTradeBook.com**

The web site is supposed to be a fusion of a networking and a trading site. 40 per cent of its registered users are from India, and gaining access to potential global customers

**LinkedIn Traffic**

With the down turn in the economy, the business networking web site's traffic has shown a sharp increase. ComScore reported the rise to be an increase of 22 per cent

# Business networking



to be the only web site that has a user base of a significant size. At the last count, it had approximately 3.2 million registered users, more importantly from the Indian subcontinent.

So, for the contender of our professional networking award, **SiliconIndia.com** does well as our runner up. Coming to our winner, **LinkedIn.com** takes privacy very seriously. Firstly, it encourages you to add contacts only if you know them. LinkedIn prompts you to mention how you know the contact or supply their email address. Further, it needs the approval of the other person (referred to as a connection in LinkedIn) for the connection to be complete. The best part is that, if over a period of time several people say they don't know you, LinkedIn automatically keeps tabs on you and you will not be able to add contacts directly until you commit not to add contacts without knowing them. As far as the number of registered users go, there are 45 million users on **LinkedIn.com**.

The likelihood that you will meet more people from your professional circle is higher on LinkedIn than any other professional networking site. Also, going by the number of prominent users on LinkedIn, the site's credibility is indisputable. Barack Obama, Sarah Palin, Bill Gates and Steve Jobs are just some of the personalities you will find on **LinkedIn.com**.

LinkedIn has a large number of groups and associations. If you are a technologist and plan to launch your venture, you will find a vast pool of venture capitalists registered with LinkedIn. Even college students and professionals across sectors are active here.

**LinkedIn.com** also has a very useful tool called LinkedIn Answers that lets you ask any question that you may have relevant to your profession or business and the vast pool of LinkedIn users will answer it for you. **d**

There's more to networking than just catching up with old and long lost school friends or wasting time doing nothing constructive. And this is where business networking comes in. In addition to posting your profiles on job portals, signing up with business or professional networking sites will boost the probability of connecting with strategic people and could land you a job. Not just that, professional networking also increases your circle of professional contacts, thereby assisting you in decision making, come an emergency.

Although the idea is more or less the same as social networking, the underlying sentiments are more serious and need greater privacy and integrity. Hence, filtering out spammers becomes all the more important. When you're out there looking out for something serious, the last thing you want is to be linked to by unknown people for no reason.

Essentially, the first thing you look for in a professional networking site is privacy, credibility, integrity and appropriate users to interact with. These will certainly differ from user to user, but we can assess the sites according to their functionality and operability. We looked into the options we had and came across several web sites that claimed to be the one answer to your business networking needs.

The sites that we closed in on in our

final comparison were **SiliconIndia.com** and **LinkedIn.com**, in addition to a few other web sites that fell below our expectations. There is a significant difference between **SiliconIndia.com** and **LinkedIn.com**, and so there is a clear winner here. LinkedIn has a very intuitive interface that takes you straight to where you need to go, with a vast storehouse of users. The reason we even included SiliconIndia is that, from an Indian perspective, **SiliconIndia.com** seems

## Networking Feature Picks

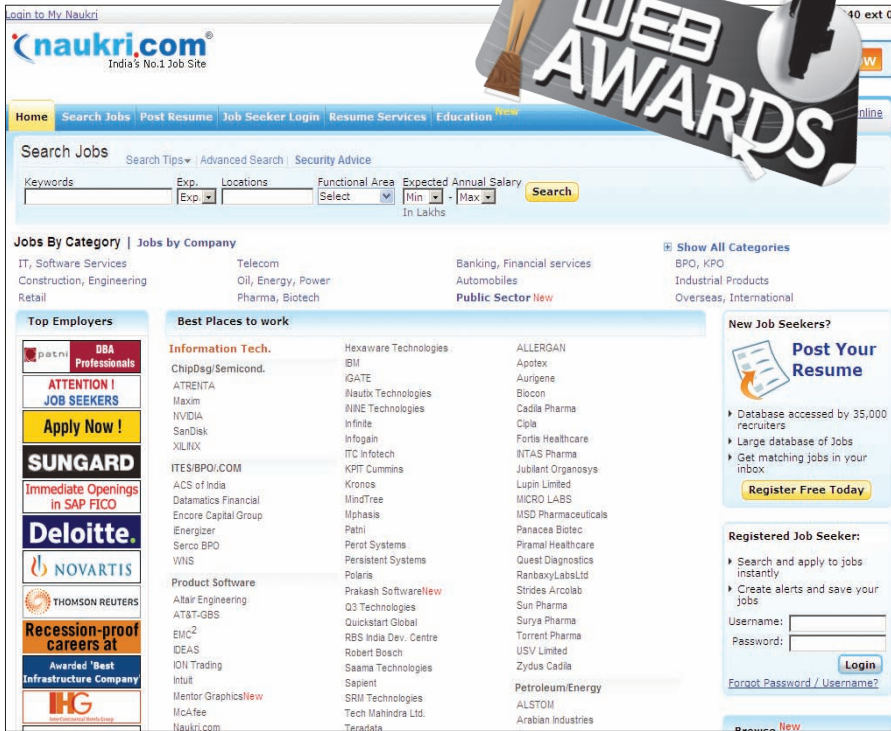
**brijj.com** - A business networking web site launched by the people behind naukri.com. It's an extension of their job search service, and the network has received quite a sizable amount of registrations since its launch. An interesting feature is the way interaction takes place within groups. Members can share files such as documents and presentations in the group apart from the possibility of having discussions on topics. Events are also organised within each group.

**Wapr.com** - A newer kid on the block; this web site was started by young entrepreneurs from Hyderabad. We found the site to be extremely customisable. It has strong privacy features and an easy navigation scheme. Since the site is new, understandably it has fewer members. The web site is not only a professional network but also a tool for companies to attract talent. What we found strange though was the lack of straight forward groups or communities.

**toostep.com** - This web site is based on a slightly different philosophy. Rather than just simple networking, the web site puts a lot of stress on the sharing of knowledge and open collaboration to generate innovative ideas. The community has a reward system in the form of badges and points for contributors. The three ways to participate on the web site are through "Debate", "Ideate", "Insight" and "Q&A" modules. Ideate allows you to ask for ideas from the community, through Insight you can publish articles, and Q&A lets you ask and answer questions.

**peerpower.com** - Peer power is an exclusive, invitation only, network launched by the Times of India group. The site seems to be too niche in its current form. It allows you to register only with your corporate email id but only after you get an invitation. An interesting feature we found on the site was the make your own newspaper feature. It allows you to use RSS feeds to aggregate news from different sources. The feeds are placed in an attractive newspaper format. You can then publish this newspaper and others on the network can subscribe to it.

# Job sites



terms and scrutinised each of these portals to judge where they stand and whether or not they have reason to give hope. While job portals may not guarantee you a job, they are pivotal in presenting you with the opportunity to face the interview. You must remember, although a portal may get you to face an interview, performing in the interview and convincing the interview panel is totally up to you as the candidate.

After analysing as many available options as possible, we reduced the number of web sites in the final analysis based on the number of job postings across categories and technologies. Eventually, we had two sites that impressed us – Naukri and Monster – this was the unanimous view of our panel, but the decision to pick a winner needed deeper scrutiny and debate. The average job applicant that we considered is an Indian national, seeking a job *preferably* within India, with qualifications in the software/hardware sector. We had a long debate on which it should be between the two, but in the end, the figures speak.

Not everyone is a global citizen, not everyone continuously seeks a job abroad. For the sheer volume of jobs here in India, the numbers are in favour of one site, and so our award goes to Naukri. Nevertheless, we did notice that there are certain domains, especially ERP and SAP in particular, where Monster has a clear lead over Naukri. We must say that Monster, with its global footprint, gives access to a wider pool of jobs and is a familiar portal to employers abroad.

Not long ago, the world was reeling under the weight of a global pandemic – we're not talking about swine flu, but rather the recent economic recession. While some of us may be taken aback at the fact that it figures on global trends of most internet search engines, what's even more shocking is the sheer number of jobs lost during the past year. But, all those unemployed people are not going to stay jobless for the rest of their lives. How and what gets them to their new job is vital.

Even Barack Obama's popularity sinks deeper and deeper with every day he completes in office, highlighting the fact that eventually it is service that counts and not the hype! Undoubtedly, security and professional

growth weighs more than all the hype. The same holds true when we look out for a job – more so in difficult times such as these. We have looked at the available options, and



Rozgar duniya, a job portal for daily wage workers  
<http://www.thinkdigit.com/d/87124/>

given our technology focus, we have assessed them from the perspective of a job applicant in the IT industry.

Terms such as software developer, database administrator, test analyst, SAP and ERP are part of this industry, and so we prepared an exhaustive list of such

Usability is intuitive in both these web sites. While both sites have a WAP site whereby you can access your profile from your mobile. Monster.com gives you the option for SMS resume forwarding. With this service, you no longer need even a GPRS connection on your handset. However, you need to know the code for the company to which you wish to forward your resume. Monster is rated as the largest job search engine in the world, and is understandably so in the global perspective. However, in our analysis we have used the figures derived from analysing it from the point of view of the average Indian job applicant.

Additionally, we looked at **Jobstreet.com**, **Timesjobs.com** and **Shine.com** in our final list of sites, after eliminating some platforms due to all-out clutter. Despite being associated with industry heavyweights, these sites somewhat lacked lustre. Either the results were not convincing, the interface was unpleasant or services provided were not up to the mark. **D**

## START CREATING RESUMES ONLINE

### **buzzword.acrobat.com**

If you want a powerful word processor that can help you make rich resumes online, try buzzword. It offers a spectacular interface, good collaboration with fantastic comments support.

### **Editgrid.com**

If you want a quick, easy, clean looking, multifeatured spreadsheet application this is it. It is light (Flash based) and includes easy to use data lookup features from external sources. The application also supports easy collaboration with decent templates.

### **shutterb.org**

If you want a nice *just start typing* text editor (and not a word processor), this site is meant for you.

**darkcopy.com** - If you wish to compose text without distractions such as auto corrections, spelling checks, tool bar, that clutter up fancy word processors, here is the application for you.

**writer.bighugelabs.com** - If a highly tweakable geeky text editor is needed to get your creative juices flowing, you should try this web site.

# Online office suites



The screenshot shows the Zoho website interface with a navigation bar at the top containing links for Home, Forums, Blogs, Pricing, Partners, Contact Us, and FAQ. Below the navigation bar, there are two main columns of application categories: 'Productivity & Collaboration Apps' and 'Business Apps'. Each category lists several applications with brief descriptions and 'Try Now' links. A large, stylized banner for 'digit WEB AWARDS' is positioned diagonally across the middle of the page. To the right of the banner, there is a 'Sign In using' section with a Zoho logo. Below the banner, there is a 'Utilities' section listing services like Site 24x7, Zoho Polls, Zoho Viewer, and Zoho Challenge. At the bottom of the screenshot, there is a 'Zoho CRM' banner with the text 'Get your Email inside CRM'.

Online office suites have been around for quite a while, but for a long time they were looked at in wonderment, not because they did what they're supposed to do well, but because they could do them at all. Before proceeding further, let's define what exactly online office suites are. They're web based services that offer word processor, spreadsheet, presentation and other applications, or rather online alternatives to desktop office suites such as MS Office or OpenOffice. Additionally, they're also required to leverage the cloud to bring to the user the added advantage of collaboration. With collaboration, it is possible for many users to work on a single document and not be restricted by geography. Another advantage of using online office suites is that all your documents reside in the cloud. They can be accessed from any PC with an internet

## Buzzword

Buzzword is a beautiful, full featured, word processor with some spectacular visual effects created by Virtual Ubiquity, an Adobe company. The processor has almost every feature possible, including collaboration and keyboard shortcuts. The commenting and version history options are excellent. The fonts look like they are heavily smoothed and are very pleasing. It is perhaps the only word processor online that can handle text flowing around images flawlessly. It is also supposed to go beyond just WYSIWYG and deliver WYSIWYP (What you see is what you print).

connection and decent browser. And the best part? Most of them are free!


The top three contenders we've chosen were ThinkFree Office Online, Google Docs, and Zoho Office. Let's look at some of the similarities in the three contenders, first. They're all free, work in a web browser and are cross platform. All three have communities associated with them wherein users create sample documents such as resumes or presentation templates, and share them with the community. Through this comparison, the question we're answering is not whether these office suites can give a blow to a heavy weight such as MS Office, but whether they're good as standalone solutions, and furthermore which is the overall solution of choice in terms of what is offered - productivity and collaboration.

Let's start with ThinkFree.com. The suite runs as a Java App and uses the JVM (Java Virtual Machine) environment. This is why it is different from the other two contenders. After a painfully long wait, the suite loads to reveal very rich productivity applications that almost mimic MS Office 2003. The word processor offers standard features such as spellcheck, word count, and even short cut keys. The Excel clone, offers all spreadsheet tools needed to sort data. As for formula functions, there is full support. However, pivot tables were not offered. Since, the presentation tool is made to look exactly like the 2003 PowerPoint

version, you even get to insert slide transitions and custom animation using a very familiar interface. Putting all this together, ThinkFree scores high in terms of familiarity. However, the productivity tools are heavy on system resources. As a result, you'll find the response on slower systems or connections to be lagging, compared to another option such as Google Docs. Loading time goes against this otherwise very powerful office suite.

With Google Docs, it's all about simplicity. It lets you quickly take notes or make a simple presentation on the go. Playing with numbers in a spreadsheet is fine but not hardcore manipulation. Google Docs even offers the best community developed templates for documents. However, since Google Docs has not tried to ape the interface of offline suites, there is some learning to do. We found it next to impossible to sort one column without affecting the others - something which both Zoho and ThinkFree do very smoothly. The word processor is good for simple text while the presentation tool is very basic and may not be what you would use for a typical marketing or student-level presentation, needing a certain level of formatting.

Zoho Office sits in the perfect middle ground between the other two contenders. It offers power features, as well as a light and zippy interface. It scores high on collaboration, too, as the version history and sharing options are slightly more comprehensive than the others. It supports the DOCX file format - something Google Docs is yet to do. Issues to gripe about - there is very limited shortcut support, and on default settings the shortcuts conflict with the browser's shortcuts. Still, a minor irritant in the grander scheme of things. Zoho also features the greatest number of supporting services such as CRM, Wiki, Projects, Planner and a whole lot of other power tools for productivity.

To come to a conclusion, we envisaged different situations under which people might use online office suites. Most users will use online office suites for some quick fixes before submitting documents for some important evaluation. They would use them through netbooks or cybercafes. In such as scenario, ThinkFree loses out as it is resource intensive and we all know the plight of computers and net connections in cyber cafes. At the same time the user would want the greatest number of features. Considering the needs of students, professionals and even casual users Zoho offers the best platform and is our office suite winner. ThinkFree gets our vote for the best features and a power solution, while Google Docs earns the distinction of a quick, zippy solution. 

### Trekking

If you want to make it to the mountains over the weekend, check out [www.thegarwhalhimayas.com](http://www.thegarwhalhimayas.com) for the Himalayas and [trekshitz.com](http://trekshitz.com) for the Sahiyadiris.

### Official Indian tourist sites

Indian states have their own tourism sites, these include [mptourism.org](http://mptourism.org), [keralatourism.org](http://keralatourism.org), [gujarattourism.com](http://gujarattourism.com), [up-tourism.com](http://up-tourism.com), [jktourism.org](http://jktourism.org) and [maharashtratourism.gov.in](http://maharashtratourism.gov.in).

# Travel



holidays abroad. Also, the entire web site is available in Hindi. Signing up is necessary before any bookings can be made, though. The search options in the site are not very flexible, and although you can, say, search for cars on rent in Kodaikanal on particular days, this is very much a hit and miss affair, as you have to select the type of car before searching. This means that most searches that you make will give you no results whatsoever. This is rather silly.

Travelocity is the Indian version of an international site, and also has a clean and clear interface. There usually is just one distinct offer available on the front page, but this is a very attractive one (Flat Rs. 1,000 on return ticket for two on any airline, for example). Travelocity's claim to fame is the lowest prices for over 450 airlines. This web site is also geared towards air travel, but packages, car bookings, hotels and cruises are also available. There is a short break section, which is for weekend getaways, but is focused on just six major cities. These are not local destinations however, and display pricings for places such as Phuket and Bangkok, along with Goa and Jaipur. Rail bookings are not available, but Travelocity has a same day cancellation policy, along with a promise of processing all refunds within five days.

**Makemytrip.com** has many options and interesting features on offer. The site caters to both individual travellers going to a particular destination, as well as those out for a holiday or adventure trip. There is an interesting video section, and listings of fairs and festivals in India. Makemytrip offers live chat during business hours, and the search for international holidays is very fast, and can be refined according to price and duration. There are 12 holiday

"themes" available, which include "wildlife" and "spa" among other themes, - this is a great way to plan a holiday.

When packages are searched for, the list of options available includes a comprehensive set of details, including whether or not the package is escorted, and the kind of accommodation and travel options included.

Users can submit travel stories and travel videos, and the web site has an active community of travellers. Customising and planning tours is easy, and is encouraged by the design of the site. The flight tables look as good on netbooks as on desktops, and the site is also available on mobile platforms. Makemytrip is comprehensive in the options it has to offer, usability, and works well for those who know exactly what they want. Makemytrip is clearly miles ahead, and therefore wins our Web Award. **D**

The Indian travel web sites that we considered were Makemytrip, Yatra, Cleartrip, Ezeego1 and Travelocity, among others.

Yatra looks like a comprehensive travel web site, but is a little misleading in that respect. A fair few links from the main site direct you to a sister travel forum web site, called **Raahi.com**. These are littered all around the site, and even a main tab "City Guides" on the site interface redirects to Raahi. **Yatra.com**, however, has a number of promotional aspects which make it very appealing. Yatra's "fair price" promotion promises to match the lowest price that you get on any international flight, if you find one outside the web site. Yatra also claims to have the lowest hotel pricings around, and will pay users double the difference if they find cheaper rates. Registered users can collect "Yatra miles" that gives them further discounts and access to special offers from time to time. Another interesting feature of Yatra is videos of some hotels, so you can have a look around before you book. There is a range of different holiday options available, and these can be searched, based on the "theme" of the kind of vacation you want; this is a handy and innovative approach.

**Cleartrip.com** has a clean interface without any ads. Meant primarily for booking flights, it has a well laid out flight calendar for any date, which can be sorted

by the airlines available. Cleartrip lets you jump right in, and you can evaluate prices for return and one way journeys for a number of airports in India and abroad. The return flight booking procedure for Indian cities is very easy, and requires a minimum number of clicks before all the flight options, along with the lowest price the site offers, are presented in front of you in a tabular form. There is also a neat graph feature that plots flight pricing by different airlines over any date range that

you specify.

Unfortunately, because of the minimal interface, many things the web site has to offer are rather hidden. The big tables used for most of the flight schedules look horrible on a netbook. There is a "Small world" section that details travel destinations. However, the site has special offers for flights only, and does not chalk up as an all-round travel booking web site.

Ezeego1, at first glance, appears to be the most comprehensive travel web site around. Foreign exchange options, travel insurance, and cruises are prominently displayed on the front page; these options are also available on the other sites. In addition, there are interesting rail and holiday discounts available for locations within India, and "knockout offers" for



To discuss online travel booking go to <http://www.thinkdigit.com/d/24354/>

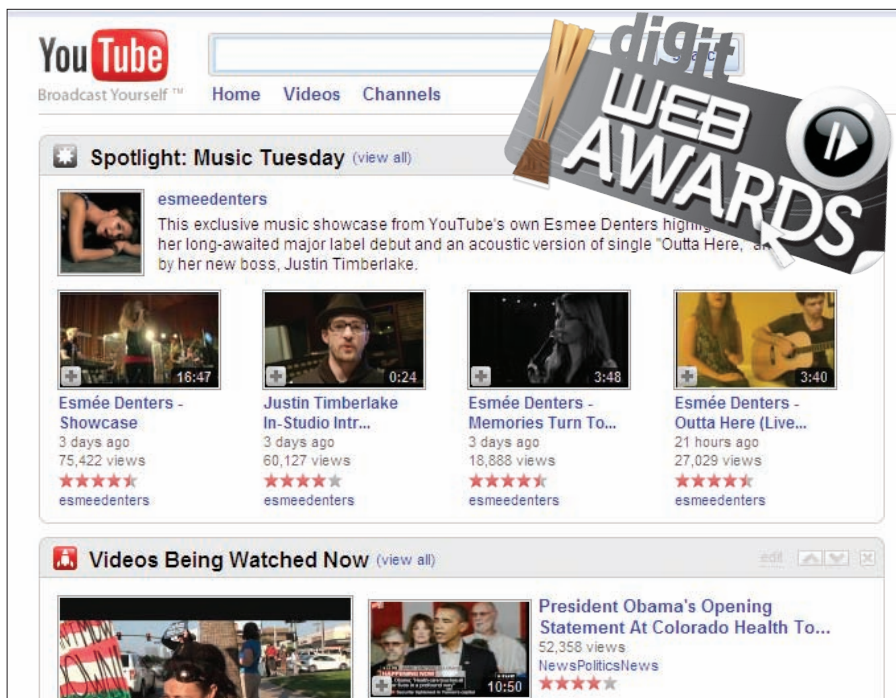
### Warp Speed

Did you know that the testing site for YouTube developers has a great visual method for navigating YouTube? Head out to [http://www.youtube.com/warp\\_speed](http://www.youtube.com/warp_speed).

### HD Content

Vimeo was the first site to offer full HD streaming from a web site, and has a reputation of having a large number of artistic original content and an active video community

# Video streaming



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Blip.tv and Vimeo allow you, and even encourage you, to download videos for viewing offline and on other platforms. Veoh lets you download as long as you have a client, but the videos are not portable and take up disk space. YouTube and Dailymotion, however, do not allow you to easily download videos from the web interface itself. A download option for carrying videos you like on a mobile phone or a PMP would be a very convenient feature if it were implemented in the more popular sites, YouTube and Vimeo.

YouTube has a number of unique features that really lets it stand out. The embed option available while watching any video is convenient when it comes to posting the video on social networking sites, third-party sites and on blogs. This directs a lot of traffic to YouTube, even if the viewer is not on the main site. The ability to create playlists is another interesting feature here. The staggering number of videos on YouTube is far greater than the nearest competitor.

The benefits of quickly being able to upload videos, and having a large number of videos also make it a hassle for people on the lookout for content. Finding something refreshing, new and innovative without knowing it is already there is difficult. The policing of YouTube is at times not able to catch up to many uploads at once. The other sites are much better at censorship,

Watching video online has become a passtime activity on a par with using webmail services and social networking. There are two aspects to video streaming web sites, one from the perspective of the person who is watching the videos, and another from the perspective of the person who is sharing content that he/she has created. The first web site that comes to mind at the mention of video streaming is YouTube, which takes up the lion's share of hits among video streaming sites, as well as the total bandwidth of the internet itself. However, there are a number of other video streaming web sites out there, many of them

in subsequent episodes. Metacafe has channels, but these are different from the channels on YouTube. These channels also offer very focussed content, but with a broader scope. A popular channel, for example, is Movie Trailers. The web site is simply organised into "Most Viewed", "Highest Rated" and "Rising Stars", but the videos don't really stand out unless you are looking for something specific. Vimeo has



YouTube goes Hindi [www.thinkdigit.com/d/25867/](http://www.thinkdigit.com/d/25867/)

### Video streaming reckoner

Sharing HD content: Vimeo  
 Downloading HD content: Vimeo  
 Downloading Vidcasts: Blip.tv  
 If not YouTube: Dailymotion

with a lot of quality content to offer. The web sites shortlisted were Blip.tv, Metacafe, Vimeo, Veoh, Dailymotion and YouTube.

Blip.tv stands out as having a slightly different format for uploading videos, and is a web site intended for vidcasts. There are a number of quality options available for streaming the videos hosted on Blip.tv. The site has a "shows" and "episodes" format, with items searchable by tags or categories. The content from one uploader, that is analogous to a channel on YouTube, is focused on a particular topic, and explores

a lot of user-generated content, ranging on a broad range of topics, and focuses on HD content. Videos are organised into Groups, Channels and Albums.

Vimeo is very friendly when it comes to both uploading content, and streaming video, but the focus on HD means that you will need to have a pretty good internet connection. Veoh also offers HD content, but requires you to download an offline client for watching videos longer than five minutes, which is a negative point to Veoh. Veoh has channels, full length and short movies, and groups.

Dailymotion has comprehensive categories; these make it really easy to get to the kind of content you want to watch, if you are not looking for something specific. Dailymotion has the greatest number of hits for a video streaming web site after YouTube.

simply because the staff has much less content to monitor. Though Dailymotion has less content, the chances of getting rickrolled is also proportionally lower.

YouTube also has many spam channels, ad channels, and users desperately trying to add a number of followers to their channels. This often means that a successful video on YouTube will be replicated on many channels. Although there is much repeated content on YouTube, if there is anything that you are specifically looking for, chances are that you will find it there. There are many official video channels maintained on YouTube. Of late, YouTube has also started offering HD content, where available. The web award goes to YouTube, for the sheer number of videos available, and the convenience of uploading and sharing content. **d**

# Real estate



The screenshot shows the homepage of magicbricks.com. At the top, there are navigation links for 'Properties in India' and 'Properties in Gulf'. The main header includes the site name 'magicbricks.com' and the tagline 'India's No.1 Property Site'. Below this is a search bar with options for 'Buy' or 'Rent', and filters for 'Type' (Multistorey Apartment), 'Budget' (Min/Max), and 'City' (New Delhi). There are also checkboxes for 'Individuals', 'Agents', and 'Builders'. A 'SEARCH NOW' button is visible. Below the search bar, there are sections for 'City Specials' listing various Indian cities, 'Check out our Rent Zone', 'Developer's Gallery' with logos for APARNA, KSL, Rampranath City, MUMI, and HANDEKA, and 'Featured Projects' listing properties in Delhi & NCR, Chennai, and Bangalore. A large banner for 'Office & Retail Space at Sector 18, Noida' is also present.

simple interface and easy navigation. An interesting web site we came across and deserves a mention in terms of usability was [propertywala.com](http://propertywala.com). This web site has video walkthroughs on many topics and even a live chat with tech support that actually works. Among features, we looked at the ability to include photos in listings, EMI calculators, easy finance support, alerts and review options. Two web sites stood out in this regard – [magicbricks.com](http://magicbricks.com) and [99acres.com](http://99acres.com).

Magicbricks.com shows listings in nearby locations. It has a separate section known as Rent Zone. It has Maps support and an auto suggest. On the other hand, [99acres.com](http://99acres.com) has a convenient 'view similar

## Find real estate classifieds

It turns out that free classified-ad web sites are among the most visited sites in India. In this domain Vizisense, an audience measurement platform, recently ranked [clickindia.com](http://clickindia.com) as the top site. Classifieds web sites follow a similar navigation style. You can browse by category such as property, services, auto, etc., or by geographic location. The other sites in this space are [olx.in](http://olx.in), [quikr.com](http://quikr.com), [locanto.in](http://locanto.in), and [click.in](http://click.in). A quick look at these sites will reveal the number of things you can find on them. You will find ads for sale, purchase, rentals and services related to homes, cars, two-wheelers. You'll find jobs, electronics, home appliances, education resources, apartments for rent, vacation cottages for rent and ads related to travel, dating, pets, and probably even a kitchen sink!

There is a sizeable number of real estate web sites in the Indian webscape. You have everything from full-fledged and heavily advertised portals such as [99acres.com](http://99acres.com), to small listing services such as [anandproperties.com](http://anandproperties.com). Even eBay has a real estate microsite, while there are specialised local services such as [realestate-chennai.com](http://realestate-chennai.com). There is even a real estate off-shoot web site, [100nests.com](http://100nests.com), that "helps you look at your home and associated real estate services in a more holistic manner". Essentially, it offers valuations, neighbourhood networking and service providers

such as electricians. All this activity is even more surprising considering the real estate sector was one of the most affected in the recent downturn.

When we got down to dissecting property web sites, we first narrowed down to a short list of five. All the web sites follow a similar format for searching. "to buy" and "to rent" radio buttons are common with relevant fields that let



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## It's payback time

Every year Digit conducts the nationwide ICONS OF TRUST survey, naming the most trusted tech brands. After imparting knowledge, it's time for them to pay you back kind. Let them vote for you as their Digit Reader of Trust. For details turn to page 56

you specify either type (residential or commercial) and its location. From this point on, the web sites differ in terms of refining search results, number of listings and added features. For instance, though [indiaproperties.com](http://indiaproperties.com) may have quite a decent number of listings, it lost out because the search refine function was very tacky. While others provided check boxes for refining by locality, advanced search in [indiaproperties.com](http://indiaproperties.com) made you select localities manually. In terms of features, some have maps and photo support for listings, free SMS to contact sellers, while others let you chat live for more help.

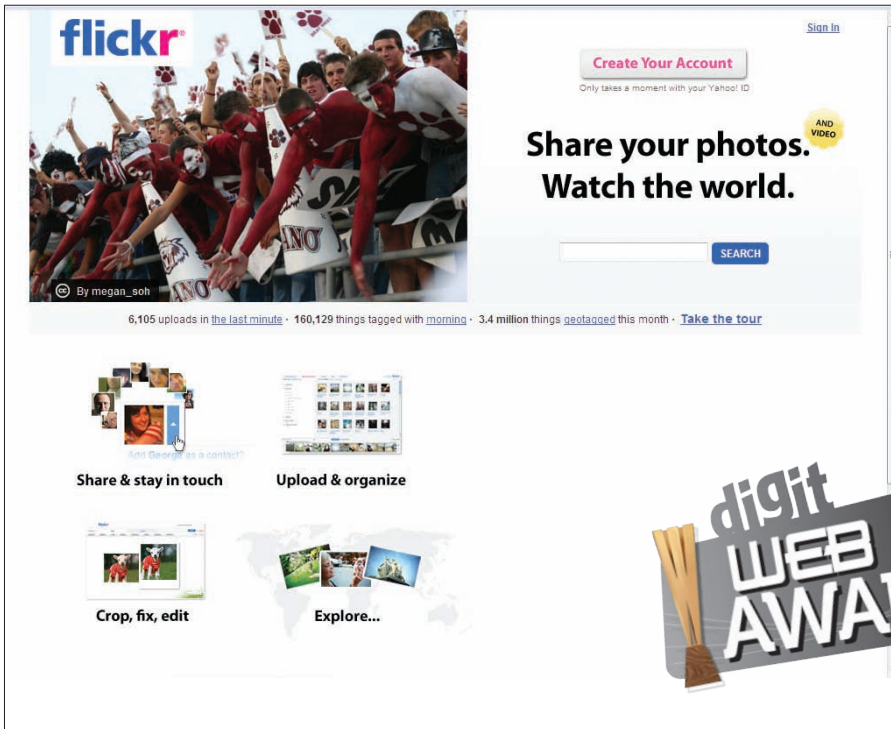
While evaluating, we gave relevant weight to each of the attributes mentioned, as well as to the usability and navigation structure. Of the shortlisted candidates, [makaan.com](http://makaan.com) was the easiest to use with a

properties' button. It lets users contact multiple listings/advertisers at once. It also has a separate paying guest (PG) search on the main page and also offers a toll free support number.

But, aside of the usability fluff, what we must remember is that a good real estate web site is only as good as the number of property listings it brings to you. To evaluate listings we chose five locations spread across the country and within each location two or three popular and obscure localities. We fixed on a realistic price range, both for lease and buy. The greatest number of listings came from [magicbricks.com](http://magicbricks.com) and [99acres.com](http://99acres.com), but the former was ahead by a considerable margin in most cases. Overall, [Magicbricks.com](http://magicbricks.com) emerged the winner thanks to its usability, number of listings and special features. **d**



# Image hosting



service, it has become a habit to create as many accounts as necessary. If you are willing to pay for the services though, Flickr outshines Picasa with a \$24 unlimited scheme per year. You get 10 GB on Picasa for \$20, and 40 GB for \$75. While Picasa imposes limits on the number of collections you can make (250), and the number of photos in each collection (500), Flickr has no such constraints.

Privacy is important when it comes to photo sharing. Picasa allows you to create unlisted albums, and the images are not searchable. You can, however, send a link to the album, and it can be viewed without signing in or registration. Optionally, Picasa also allows you to make private albums that need the uploader's approval before the images can be viewed. Flickr also has a privacy setting, and you need to sign in to Yahoo! before private albums can be viewed. Flickr also allows you to group access according to "friends" and "family", which makes sure that one group does not snoop around the photos intended for another. While Picasa's approach may be convenient,

Flickr's approach is more secure, so this is a trade-off that the user has to weigh.


If photography is a hobby and a user has enthusiast or semi-professional equipment, then the chances are that they will have a more serious approach to photography than the casual user of image hosting services. It is for these people that Flickr really shines through. The Flickr Organizer is a great tool to handle the EXIF data of images, sort them, change them, and tag photos. Picasa has no equivalent tool. Flickr also has a robust search option based not just on tags, but also on EXIF data. This means that when you use Flickr with your equipment, it gets added to the knowledge database of all the enthusiast and prosumer photographers out there, which kicks back as an advantage to the user. For example, before buying a new camera, you can look at all the images shot with that camera in different settings. For these reasons, Flickr has grown to have a very active and helpful photography community, that comments, gives advice and suggests improvements on techniques and approach. Flickr also has an open API, which allows third party developers to create applications using the images on Flickr as a resource. There are ways to jerry-rig such applications for photos hosted on Picasa as well, but this approach is not the same as the Flickr API which encourages third party applications. Flickr simply has a lot more to offer to those who want to take digital photography to the next level, and for this reason, Flickr gets our Web Award. 

Image hosting web sites are a natural consequence of the advent of digital photography. Digital cameras and mobile phones are everywhere, and some enthusiasts are likely to own a dSLR. The next step is to share these photos, over the internet, with a wide audience. Although there are quite a few image hosting web sites, the competition quickly boils down to Picasa and Flickr, the image hosting solutions from Google and Yahoo!, respectively. These are the market leaders, and the social networking aspect of image hosting is one of the main reasons such services are around at all, and these two sites have the biggest share. So, when you host your images on one of these sites, the chances are that you can share them and get feedback as most users are likely to have a Google or Yahoo! username registered.

Despite generally fulfilling the same

## Megaupload.com

If you want to share a large number of images with a few people, but want them to save the files on their hard drives instead of viewing them on a web page, a better solution to image hosting web sites would be a web site for sending large files. Megaupload.com is one such service which lets you email and then share large files that cannot simply be emailed. Just compress all the files into a .zip or .rar archive, then upload to Megaupload.com. A link can then be mailed to your friends or family.

tools for touching up images. Picasa 3 falls short when it comes to serious touching up, though. When uploading a large number of images, Picasa's client is much better than Flickr, but this advantage is offset by the amount of space that Picasa offers to users. One GB of space for image hosting is rather unbecoming of Google, a company

that allocates over 7 GB for email. Flickr has an upload limit of 100 MB per month, which expands every month. Picasa allows for any single image to be around 20 MB, while Flickr allows a maximum of 10 MB per photo.

For people who actively use either



Tutorial on editing and sharing web site, Picnik  
<http://www.thinkdigit.com/d/60430/>

function, Picasa and Flickr are very different in the way they are used, and what they do best. Picasa has a good uploading client, with some features for adjusting images, clearing blemishes and basic touch-up. Flickr also has a client for uploading photos, but this one does not have any

## Twitpic.com

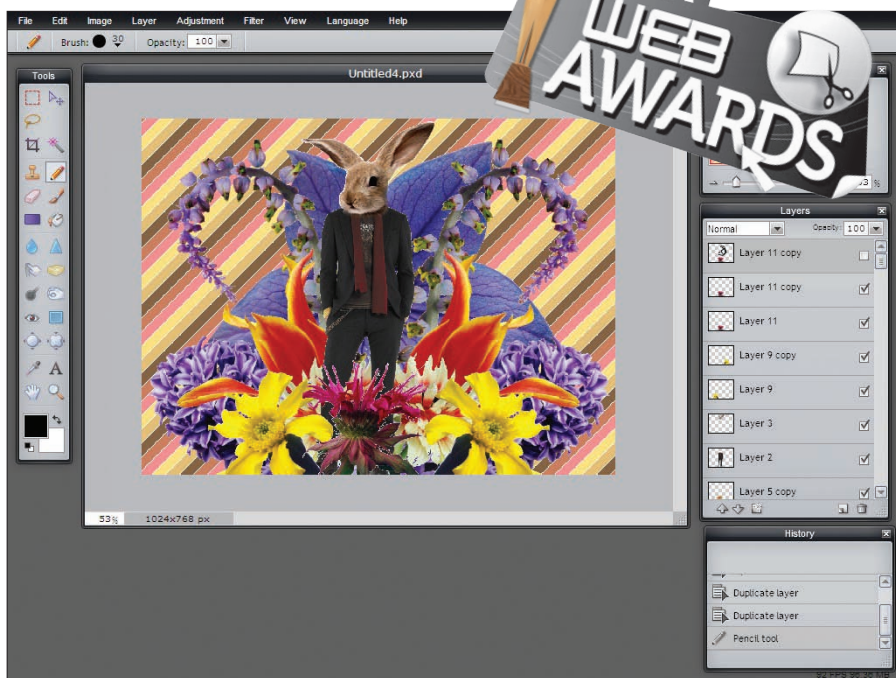
Have a Twitter feed and want to include images in it? Head over to twitpic.com. While you are at it, Agent 001 tweets pics at <http://twitpic.com/photos/digitindia>

## Geotagging

Twitpic, Picasa and Flickr all allow users to geotag images. This adds the location where the image was taken, which can then be shown on a world map. Explore this option if you travel a lot

## Web awards

# Image editing



Online image editing has really taken off recently, making this a difficult category to judge because of the number of exemplary image editing web applications available.

There are a few web sites that allow basic image editing: these include Fotoflexer, Lunapic, Picnic and Adobe Photoshop's online version, the disappointingly very basic, Photoshop Express. You can add layers and text to the photos, as well as choose from a large number of preset shapes, frames and objects. Fotoflexer and Lunapic also allow users to add animated overlays to their images.

Then, there is another class of image editor which allows much more control and a range of drawing and image editing tools. The shortlist consisted of Pixlr, Aviary Phoenix, Splashup and Sumo Paint. These are all web applications with a lot of functionality, including multi-layer support, filters, image-adjustment and in some cases, even plugins. All these image editors run on the Flash platform.

All the short-listed sites have the same basic layout. Along the right, the tools are located. Along the top edge of the screen is the menu bar. Below the menu bar is a parameter bar for tweaking various aspects of the tools being used at any point in time. All these sites are designed following the layout of Adobe Photoshop, so those who have used Photoshop should have a very short learning curve on any of these image editors.

All of them let you start editing images

right away. Creating a new image quickly, or opening an image from your hard drive is just a few clicks away. Aviary Phoenix, Sumo Paint and Splashup all allow you to sign up for an account, and create an online space where you can save and share your creations. Pixlr does not have this option, and you cannot sign up even if you want to. Pixlr let's you save images only on your hard drive.

When it comes to opening images though, each image editing tool has its own set of unique advantages. Sumopaint can open only the basic JPG, PNG and GIF images, and open from a hotlink on the web. Splashup can open JPG, BMP, TIF and PNG, but has an amazing open dialogue box that interfaces with Picasa, Facebook, Flickr, Smugmug and Photobucket. You can

Flickr, Picasa and Facebook.

Both Pixlr and Splashup allow you to move the layer, history and associated windows around the workspace. Splashup also allows you to resize the windows horizontally, but not vertically. Sumopaint uses a drop-down approach, where windows can be shown or hidden at the click of a button – this is a convenient and easy approach. Aviary Phoenix has a very static window, which you can neither move nor resize. When it comes to selecting brushes, Splashup has the smallest number of brushes, as well as the smallest number of customisation options. Pixlr has an impressive brush editor that let's you tweak and change various aspects of the brushes. Aviary has a fair few options, better than Splashup, but not as good as Pixlr. Sumopaint, however, stands out here with a very comprehensive brush editor, a large number of presets, and a large number of brushes, too. Sumopaint really stands out when it comes to the tools. Splashup has 20 tools, Pixlr has 25, Aviary Phoenix, 27, and Sumopaint has 32. A really innovative control option for some of the tools on Sumopaint is the ability to move the cursor around the focus point when drawing a shape. This changes the shape in a number of ways, and lets you draw a wide range of stars and polygons after selecting a single tool. There is also a symmetrical paint option that lets you paint on the image using a number of paintbrushes that move in an identical manner with respect to the edge of the image from which the cursor is moved.

We used each image editor in an actual design scenario, and pushed them all till they broke. Aviary Phoenix does not let you open two files at once, so gets out of the running right there. Sumopaint buckles because of the selection options being rather buggy, and the shortcut keys not working properly. Splashup struggles when large files are loaded, and suffers from



For a more thorough comparison, go to <http://www.thinkdigit.com/d/57382/>

retrieve any image you have hosted on any of these sites using Splashup, or use a link to an image. Pixlr is a little strange as it does not load BMP files, but has support for PSD files. Make sure you save the Photoshop .psd file with the "Maximum Compatibility" option checked, though.

Aviary Phoenix has a misleading window that let's you open up any kind of file on your machine, but choosing heavy files tends to hang the browser you are using. Aviary also supports PSD files. Aviary Phoenix also lets you import files from

a very limited zooming mechanism. Pixlr allows you to zoom in and out intuitively, with a slider option to aid you. Opening a number of large images is a breeze, and many Photoshop shortcut keys work. Some bugs appear after extensive work (over an hour), but Pixlr is the only service that let's you meaningfully get till there. You can always save files in a Pixlr format (PXD) that retains the layers. If you want to get some serious photo editing done online, Pixlr is the service that truly delivers and so gets our web award. **d**

## Yammer

Try out this new social network for companies that act like private communication tools for your organisation. It's like twitter for corporates

## Old school printing

The traditional way of photo printing was the process of producing the image on paper using chemically sensitised paper

## Passport Sized Photos at home

The Indian passport size photo is notorious for being in strange dimensions. Find out how to print passport sized photos at home, follow the steps on the tutorial at <http://www.thinkdigit.com/forum/archive/index.php/t-12896.html>. This is a link to the ThinkDigit forum archives.

stands out as our clear winner.

With a web 2.0 feel to it, **Zoomin.com** is very easy to navigate. You are at work in a jiffy, with no hassles whatsoever. In fact, there are no distractions at all. The only button you'll see at each stage just takes you straight to printing. It's straightforward: 1, 2... print. Sign in, upload, and print! One thing you'll miss on this site is flashy ads and banners and pop-ups. Even a novice at photo printing will be able to find his or her way about effortlessly. Although the gifting options are not as exhaustive as on some other sites, the options available are sufficient to cater to most needs.

You can also upload images from your mobile by emailing a customised email address from your WAP-enabled phone. Besides, you can link images you uploaded earlier on your image hosting web site, such as **Picasa.google.com** and **Flickr.com**. Another point worth highlighting here is that **estudios.in** was the only site that passed the W3C compatibility test, ensuring you won't have any problems accessing it from any browser without any errors. This site missed out otherwise only because of the absence of customisable gifting options. If all you need is postcard, photo card or passport size photos then this is the site for you, because that is its area of focus; the prices are also competitive. Again, there is no support for photo hosting platforms, so you will need to upload your images separately.<sup>1</sup>

With advancements in technology, all that we had has gone digital – our books, notes and documents are archived online and even novels and textbooks are accessible as PDF files. We store e-books. Even our albums are online. Photo hosting sites and online albums have done away with those dusty albums we would take out after a sumptuous meal to share with our nearest and dearest. We do *occasionally* hear there is no alternative to paper! You need to feel it to truly *feel* it. Similarly, you can't substitute the feel of a printed copy in your hand with flipping through the pages or photos of a digitised version on a screen.

There are sites that offer all kinds of printing services with a wide range of gifting options. These options go from plain printing on photo paper to mouse

other sites such as **Zoomin.com**. There are also Indianised sites such as **itasveer.com** and even popular photo studios such as GK Vale in Bangalore that send printed copies and customised gifts anywhere in India. Eventually, we have rated the service as a whole – the web site and its function as a one-stop shop for your printing needs.

Also, compatibility with online image hosting platforms is vital. It makes it so much easier if you can just link your online albums to any of these sites and you can receive quality prints from them. After analysing these sites, we came across a couple that stood out for a variety of reasons. One of them was **estudios.in**, then **itasveer.com**, **gkvale.com** and finally **zoomin.com**.

Depending on various factors such

pads, t-shirts and even teddy bears. Pricing is important, and so is the overall quality of service. Customer satisfaction also was ranked very highly. There are several options if you need to print your digital images and photos.

On the one hand, there are sites such as **Snafish.com** backed by HP, and on the

as your needs, you could select any one of them. We rated the interface, ease of upload and monitoring your files and images on their web site highly. Also, the clarity in design and available gifting options were closely watched. Price is vital too. After considering all these factors and comparing with each other, **Zoomin.com**



## trust

– noun

1. reliance on the integrity, strength, ability, surety, etc., of a person or thing; confidence
2. confidence in the certainty of future payment for property or goods received; credit: *to sell merchandise on trust*

We all know what trust means. Now is the time to know *who* to trust. Presenting Digit's nationwide **ICONS OF TRUST** survey, for more details turn to page 56



Give us your feedback at [www.thinkdigit.com/d/wa09](http://www.thinkdigit.com/d/wa09)

# Tech shopping

When we talk about tech shopping, we're not limiting ourselves to just computer hardware, but we're looking for a web site that provides us with an overall solution for all kind of products, such as cell phones, digital cameras, and also computer hardware such as power supplies and graphic cards. The search and categorisation features on the web sites were important criteria, along

## Special mention

Here's an interesting site to visit – [www.naaptol.com](http://www.naaptol.com). When you either search or browse through products here, you will be given a store list and redirected to where the product is actually available. This service is helpful in a way that you don't need to go scouting to all the web sites to look for the particular product. Most of product searches came back with relevant results and this site also has good filtering options.

new products, [Ebay.in](http://Ebay.in) also allows users to create stores. These stores are also used by companies, so [Ebay.in](http://Ebay.in) allows them to have

search results had many options too, and it doesn't get too hard to find the product you are looking for.

As most of you already know, not only can you purchase products from [Ebay](http://Ebay), but you can also sell products, either new or opened. When it comes to selling

new products, [Ebay.in](http://Ebay.in) also allows users to create stores. These stores are also used by companies, so [Ebay.in](http://Ebay.in) allows them to have

with ease of navigation to these pages.

Most of the web sites that we looked at had at least one important search feature not working up to the mark and did not return us relevant results.

After browsing through many of our search criteria, [Ebay.in](http://Ebay.in) impressed us the most and is the winner for the Digit Web Awards for the Tech Shopping category. One of the main factors [Ebay.in](http://Ebay.in) wins is the number of available products on the web site. We got a huge number of hits for our product searches. Also, the categorisation of products was done very well. Filtering

a virtual store to sell their products as well. Images of the product and descriptions are also present, plus the feedback from people who have already purchased products from the same seller or store.

Though the number of products on sale is pretty large, this also creates a problem for users, as the products are repeated, until the search is correctly filtered out.

## For those who want computer peripherals

The IT Depot ([www.theitdepot.com](http://www.theitdepot.com)) has a collection of products that is better suited

for people who want to build computers. The IT Depot is somewhat like a [Newegg.com](http://Newegg.com) for Indian customers. You can pretty much buy anything you need to build a computer from this single store. They claim to ship to pretty much any location in the country.

The range of products available on the site is also pretty vast, which makes it even more ideal for those not in the vicinity of major cities. Products can be sorted by category and price range. There are also electronics that can be bought here. Cameras, DVD players, software and even Apple products can be purchased. The pricing isn't very reliable though. In some cases, the pricing is almost identical to market price but in some others, they can

## Custom Gifting

So we now know where to buy tech products, but what about shopping for other items online? We're talking about custom gifts here, where you can customise products such as T-shirts, mugs, mousepads, and lighters and gift them to your friends and family. Though you could just buy them for yourself too. [www.myntra.com](http://www.myntra.com) is a custom gifts site that has a whole lot of categories of gifts that you can customise other than just t-shirts or mugs. They even have a category for custom mouse pads. [Tshirts.in](http://Tshirts.in), formerly known as [Xtees.com](http://Xtees.com), is a similar site, but has a bigger range of premade t-shirts that you could opt for.

The last web site that deserves a mention here is [www.inkfruit.com](http://www.inkfruit.com). Even though the number of categories is only limited to four – posters, t-shirts, hoodies and mugs, the community that this web site has created is really worth a mention. Not only can you create custom t-shirts, but you can also put forth your design in a regular contest and win prizes. This contest takes place quite often and the winners design becomes a part of the shop as well.

be heavily bloated.

One of the smaller hardware sites is [TheiTwares.com](http://TheiTwares.com). It's a shop based in Mumbai, also willing to ship computer hardware to any place outside Mumbai. It's a crude system but being a computer store, pricing is good. They're also willing to assemble your system for you for a fee.

Another such store in Mumbai is [PrimeABGB.com](http://PrimeABGB.com). The prices on the site are inflated but a quick phone call to their office can get you reasonable prices. One of the biggest advantages is the choice of products. A lot of brands and products that aren't available easily can be found on this site.



Give us your feedback at [www.thinkdigit.com/d/wa09](http://www.thinkdigit.com/d/wa09)

**browserlab.adobe.com**

BrowserLab is a powerful solution for cross-browser compatibility testing, featuring multiple viewing and comparison tools, as well as customisable preferences

**MMOG**

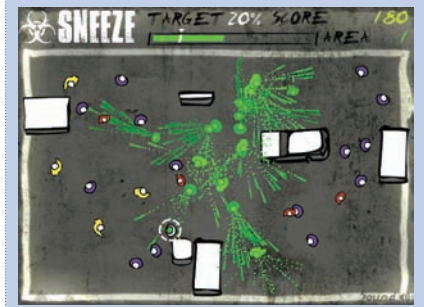
Stands for massively multiplayer online game. It is a game that is played by hundreds or thousands of players simultaneously

# Games



**Swine Flu Flash Game**

And now, a Swine Flu Flash game from Zapak. Sneeze to spread the flu to a number of people in your surroundings, who in turn, spread it to other people. Scoring is based on the percentage of the population that you manage to infect. For more such updates, head over to twitter.com/digitindia.



where users can win loads of prizes, including cash prizes.

Currently, it is hosting its ATM2 contest, where all you have to do is play games to win prizes.

Other than the list of multiplayer games, Zapak.com also offers browser-based MMOGs (massively multiplayer online games); these include *Wanted* and *Power Soccer*. The community features present on Zapak.com were not seen with the other sites. Once you register, you can add friends, send messages and chat with other gamers. One thing missing from Zapak.com is that no game description is given when you view a list from a category; only the name of the game and a thumbnail image are displayed. Another problem, we feel, is that a complete newcomer might get lost and not know what to do at Zapak.com as there are too many options, but we can't say that this is really such a bad thing.

Indiaarcade.com, one of our runners-up, has a huge collections of games, though the whole multi-player element is missing. It deserves a mention because anybody and everybody can just go to the site and start playing a game with ease – we found it the simplest, as the layout is very pleasant and straightforward. Also, the games had small descriptions along with thumbnails so people can get a better idea of what they are about to play. **D**

**Sutragames**

Although it lacks in features present on the other web sites, it did have some interesting games that weren't present on the other sites. There is an entire category dedicated to cartoon and anime, so people could play games based on popular TV shows. Zapak.com also has a category of Cartoon Network, but that is limited to that channel alone. A must game to try out at Sutragames.com is Doom 1, it brought back some really awesome memories for us.

Casual gaming has turned a new page in India, where games are not only restricted to kids. Now people of all ages are going online to play games – maybe not everybody plays games such as *Counter Strike*, but something more relaxed and just for fun. Game portals have also been created to support specific audiences such as women, with games related to clothes and children, and others revolving around educational puzzles. Certainly, there are some evils associated with gaming such as being

too addictive and time-

wasting, but if computer games are played in a more controlled environment, then they can even prove beneficial. There have been studies that show how games have improved the overall concentration levels of individuals, for example.

In this category of the Digit Web Awards, we have taken into consideration only those sites that offer browser-based games. There were a few sites such as *Indiagames.com*, quite popular with gamers, but do not provide instant gaming action, needing a client to be downloaded, so these did not make the cut.

The sites that made our short-list for this category are *Indiaarcade.com*, *Games2Win.com*

and *Zapak.com*.

The features that we first looked for were the sheer game content and how easy it was to just start playing. None of the sites gave us any problem with starting a game quickly. Then we also looked for how the games were categorised on the site and how easy it was to navigate, and find something of interest. Additional features such as loyalty programs, competitions and rewards received a big thumbs up from us. By now, you must be wondering who the winner



For more on QuakeCon 2009, visit <http://www.thinkdigit.com/d/38779/>

is; so let's not keep you guys waiting any longer – Zapak.com wins this round of the Digit Web Awards.

Zapak.com does not have all the features a game web site could have, but it makes up for this with other features that keep drawing people towards it. It has a very good category system and a search option that also works accurately. Zapak.com could be considered the main site, but it has other gaming sites which cater for specific audiences, such as *girls.zapak.com*, *cricket.zapak.com*, *world.zapak.com*. All these are listed clearly on the left side of the page. Another good thing about Zapak.com is that it frequently hold contests and tournaments



### Sayn Design iPhone 3G

Most of us long for luxury, but for some it's a habit. Obviously, a plain iPhone 3G wouldn't do. To address this problem, a company by the name of Sayn Design has made an in-Sayn version of the iPhone. It's made of 18 carat gold garnished with 53 diamonds. The price you might ask? Never mind, it's not like you could afford one.

### Nikon Coolpix S1000pj

Nikon releases many cameras but this particular one is rather special. Other than being an everyday 12 MP camera, it can also act like a projector. The size of the output can be as large as 40-inches. Obviously, don't expect to be using this to watch movies or putting up presentations for a large crowd. A stand and a remote are provided along with the camera. The camera will available on sale by the end of September.





## Wisdom Audio L150i

Each of the cabinets of the Wisdom Audio L150i tower at about 2 metres in height and are some eight inches in width. The first speaker handles the bass and has six of the 6-inch woofers. The second monster handles the mids and the highs of the range. As awesome as they look, they aren't meant to be placed in the open, but within walls. The price of each set is around Rs. 7,20,000 (\$15,000).



## Miro eX1

Miro's a company that specialises in making high speed motion cameras. The latest model eX1 is an entry-level camera in comparison and will only go up to 500 fps at 640 x 480. That's still more than 15 times better than most cameras in the market. The network connection allows you to dump videos directly to a computer. The cost of the camera is Rs. 4,75,000 (\$9,900). With equipment like this, even you can start your own version of Discovery Channel's Time Warp. How cool is that?



## Sony BDP-CX960

Sony are big fans of Blu-ray for obvious reasons and no number of Blu-ray discs is ever enough for them. It shows in their new Blu-ray player – the BDP-CX960 can load 400 Blu-ray discs. It handles pretty much every high definition audio and video standard. It also supports network connectivity so it'll update itself using the internet connection and also trailers and games assuming you have an external USB storage device connected to the player. The player will priced at Rs. 38,000 (\$800) when it is released.



## Second Life

Second Life is a very popular free environment for making machinima. Head over to [www.secondlife.com](http://www.secondlife.com)

## Speedruns

Intrigued by the concept of speedruns? Check out some of the best over at [speedruns.net](http://speedruns.net)

## Aditya Madanapalle

[aditya.madanapalle@thinkdigit.com](mailto:aditya.madanapalle@thinkdigit.com)

Ever since computers became personal, a strange kind of ethic has evolved in those who push the limits of what their machines and applications can do. A number of sub-cultures have evolved around computers, where hardware and software are used for purposes that they were not designed for. The scope of such experimentation is wide, ranging from bending pins on a circuit board for creating music to writing haiku in languages meant for coding. The internet allowed for such efforts to spread, eventually allowing a wide range of technology related art forms to emerge. Most of these communities require extensive knowledge and experience in one, or more fields of computing. Consequently, it is difficult for outsiders to appreciate the brilliance of the community's efforts. It takes a lot of time and effort before newcomers are accepted. The community around Machinima is one notable exception. Machinima is easy to grasp, but tough to master. However, anyone with a computer and a decent graphics solution can jump right in.

Some of the early games that were released had an option to record gameplay. This was a feature in the game engine itself, that tracked the movement of the player through the game, and recorded sequence of movements. Such a recording was called a "demo". A demo file consisted basically of a sequence of keypresses with a time map, that could be played back on the same engine used to create it. Demo files were shared around to display extra ordinary skill, show secret areas or as walkthroughs for particular games and levels. Such demos are still shared around the internet, particularly for *Warcraft 3* and games derived from the *Quake* series. Parallel to this development, was the emergence of speedruns. This was a community that thrived on completing games and particular levels in the lowest time possible, and

sharing their achievements. Now, speedruns were accomplished on a variety of platforms, and even if saving demos was an option on these platforms, sharing them over the internet was not an option as those who wished to play back the speedruns had to have the same platform. This was a problem with some demos as

well, as games with a particular patch could not play back demos of versions that did not have the particular patch. The increase in bandwidth, and developments in video compression technology, considerably reduced the advantage that demos had over video recordings of gameplay.

At this crucial juncture in 1996, the Rangers clan created waves in the *Quake* community with a new kind of demo. Demos usually had players jumping around and rocketing the guts out of other players, the *Diary of a Camper* had the same things – but with a storyline to it. This was the first film to embrace Machinima techniques, but back then there were not too many game engines that allowed people to modify the game environments with the same degree of control as the *Quake* engine, so most early machnima works were on the *Quake* engine only. These were called *Quake* movies, and grew so much that there were even *Quake* movie Oscar awards. Tools were written for recording and non-linear editing of these films, paving the way for Machinima.

By the year 2000, the community had started experimenting with other game engines and [machinima.com](http://machinima.com) was launched. Machinima is a portmanteau of "Machine" and "Cinema", which means machine generated cinema. The word sounds a lot like animation too, and those who practice Machinima are called Machinimators. At the heart of Machinima is a brilliant idea that fundamentally changed the approach for animation production. Computer generated images were in themselves a difficult operation. Lights, environments and characters had to be rendered, which was a time consuming process. Game environments on the other hand, rendered all these in real time, drastically reducing the amount of system resources used in creating animated sequences.

A traditional animation production process involved a lot of steps. First, characters had to be designed, with internal and external touches added.

# Animation using game engines







## Moviestorm.com

Download machinima software, create, share and even sell machinima at [www.moviestorm.co.uk](http://www.moviestorm.co.uk).



## News at Seven

News at Seven is a project that picks up RSS feeds, reads them out using an animated character, and generates videos. Check them out at [newsatseven.com](http://newsatseven.com)

This ranged from creating skeletons for the characters, and cosmetic touches such as costume, hair and skin texture. After this, an environment had to be modelled. Then, the characters would be keyframed, which meant that actions had to be programmed in, keeping in mind realistic movement and the physics of the animated universe. Then the lighting specialists would add in sources of light to illuminate the scene. All of this was handed on a platter to animators who used game engines for animation. Machinimators now only had to control the characters, co-ordinate their movements, and record the entire sequence using any one of the various video capturing options available.

Some game engines allowed Machinimators to program the key events for multiple characters, animate the camera in whatever way they chose, and then record the sequence. Another, more popular approach was simply to connect a Machinimating clan over LAN, then play-act the storyline, while recording it. Of course, such approaches had their limitations. In game engines that did not have a spectator view, the biggest limitation was the flexibility of the movement of the camera. But machinimators had come this far with the punk philosophy of working wonders with what you have, and that gave them the impetus over such puny hurdles. The players simply moved their characters in innovative ways, say one player driving a jeep, acting as a mobile platform for the "camera", and another standing on the top of the jeep looking around and zooming in where necessary, and recording the sequence of events being played out. The community developed camera tools, specific to different engines, which allowed unprecedented control over animations.

Another major limitation was the amount of expression the game engine allowed to the characters. Some of the characters in popular Machinima engines such as the Halo series had faces that were covered by helmets, with no faces showing at all. To compensate for such a lack of expression, Machinimators focused heavily on characterisation, making sure that all the dialogues were carefully crafted, had some consistency across episodes, and grew with the number of episodes. Innovative devices of engaging the audience included adding voices to weapons, vehicles and other objects in the gameplay environment. The movement grew with MTV airing a section called "Video Mods", essentially Machinima music videos for

popular songs, and a memorable South Park episode called *Make Love not Warcraft* which had a huge Machinima section.


Rooster Teeth Production's deadpan humour series *Red Vs Blue* is the most famous Machinima work so far. The series used the *Halo: Combat Evolved* engine, to tell the story of two factions stuck in a desolate canyon that no one really cared about, including the Red and Blue factions fighting over it. *This Spartan Life* is another machinima worth mentioning – for combining machinima techniques with the traditional talk show format. *This Spartan Life* was hosted in the multiplayer environments of *Halo 2*, by a character called

screen, for the viewing pleasure of an attending audience.

Skeptical about how all of this matches up to something that rolls out of major animation studios? Most of the machinima community agrees that there is a lot of ground left to cover. Hardware and gaming engines will have to improve considerably before the current quality standards of animation studios can be matched. However, this does not mean that you haven't seen machinima techniques on the large screen, or broadcast over your television. *The Chronicles of Narnia*, *The Dark Knight*, *Speed Racer* and the upcoming 2012 have all used machinima techniques in their production.

In traditional animation techniques, it was difficult to visualise or create a large number of entities together, behaving in different ways, and reacting to the environment around them. When Peter Jackson was filming the *Lord of the Rings* trilogy, he wanted some kind of software that could visualise incredibly large armies at once, and make it look realistic with individual characters in the hoards behaving like unique specimens. The breakthrough came with a software known as MASSIVE (Multiple Agent Simulation System In Virtual Environment), which combined artificial intelligence and a virtual environment with programmed physics to animate a large number of thinking entities at once. The engine has since then been used for many television commercials, movies and even some architecture and design applications where simulations of large crowds are necessary – such as stadiums and public transport systems.

Since a majority of machinima is made by small, independent clans, torrents are the best way to get and distribute machinima. A great site to download good quality machinima is [www.machinima.com](http://www.machinima.com). The *Red Vs Blue* series is available at [redvsblue.com](http://redvsblue.com) and on this month's \*Skoar! DVD. Rooster Teeth Production's homepage, [roosterteeth.com](http://roosterteeth.com) has a lot of their other works, including

*Strangerhood*, a Sims 2 based situational comedy machinima. *The Spartan Life* is available at [www.thisspartanlife.com](http://www.thisspartanlife.com). The ILL clan's web site [www.illclan.com](http://www.illclan.com) hosts their movies, and hunt around on YouTube for "Video Mods" for the MTV machinima music videos. MASSIVE is available for purchase at [www.massivesoftware.com](http://www.massivesoftware.com), animation studios should have a look at the MASSIVE Jet version. [Archive.org](http://Archive.org) has both a machinima section and speedrun section, that allows you to download the videos. 



A screenshot of *Diary of a Camper*, one of the first machinima films made



MASSIVE was used to animate the many robots in *I, Robot*.

Damian Lacedaemion, who had a guest in every episode. A unique talk show where the attendees could fire at the host for asking a stupid question, but then the host could point his gun at any attendee too. The recordings were then vidcast, and received considerable acclaim. Another unique approach was by the machinimating clan known as ILL. The ILL clan played out humorous skits in front of a live audience, often interacting with them. A video stream from the server that hosted the gameplay was projected in real time on a large

# Face Value

**Madhusudan Mukerjee**

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Lately, India and several other countries in the world have been the targets of terrorist attacks – kamikaze conspiracies that have destroyed innocent lives and public property. People and governments all over the world are gearing up to fight this menace and protect the innocent, and the answer lies in technology – and biometrics in particular, which is universally accepted as the one sure-fire way to ensure the protection and security of vulnerable populations and hopefully, someday, the elimination of terrorism altogether.

## From fingerprints to faceprints

Biometrics, or the measurement and analysis of biological data, is that arm of technology that could ensure a safer world, if scientists are to be believed. Biometrics refers to the technologies of identifying, recording and correlating characteristics of the human body such as fingerprints, eye retinas and irises, voice patterns, palm geometry and DNA. Fingerprints, one of the oldest forms of biometric analysis, were used in 14th century China and subsequently by 20th century police, and are still an unavoidable ingredient in pulp-detective fiction and TV shows.

For more than a decade now, technologists, researchers and startups all over the world seem convinced that the unique features of the face can be constructively used by artificial intelligence – computers could create more foolproof security systems. Facial structures, when translated into mathematical descriptions, could help security agencies to face up to the post-9/11 threats of infiltration into public spaces by suspected criminals. Face detection and face-tagging are already familiar to us as the wow-features of our digital cameras, photo-sharing sites such as iPhoto, Flickr and Picasa and the not-so-foolproof VeriFace facial recognition login function of Lenovo's notebooks.

Imaging: Chaitanya Surpur

Your face is your destiny

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## Open Source for the blind

The HFOSS (Humanitarian Free, Open Source Software) initiative is developing face recognition software for blind people

## Point and Search

GetFugu from Japan is researching Face recognition software on mobile phones that allow people to network by pointing their cameraphone at people

## Tomorrow's tech

The first and most well-known, large-scale application of facial recognition software was in the June 2001 Super Bowl in Tampa, Florida, in which video security cameras recorded the facial features of thousands of fans entering the stadium and compared them with mug shots in the Tampa Police database. The cameras were installed with a face-recognition application called Face-IT, created by Visionics Corporation, New Jersey. Famously, the system made several 'false positives' (matched faces that were not really matching) and led to the arrest of not a single wanted criminal. Civil liberty activists raised the alarm about big brother tactics and infringements on privacy. Since then, there have been several advances in facial recognition technologies and in October 2008, Interpol proposed an automated face-recognition system for international borders. Again, voices were raised against the proposal as it could lead to an infringement of privacy, abuse by officials, and, like most facial recognition systems in the past, fall prey to inaccuracies. Yet, these systems are highly attractive to the powers-that-be as they can be used to prevent voter fraud, thwart the misuse of ATM machines, and, basically, provide an easy means to control large groups of people – the masses. But this is only possible if the error margins decrease. Perhaps the reason for the high error frequency lies in how the system works.

### How facial recognition systems work

Some of us never forget a face. Humans have an intrinsic ability to remember hundreds of faces and, more often than not, connect each one of these faces with a name. The challenge for a face-recognition system is to be able to mimic this ability with at least an equivalent measure of accuracy, if not better, with minimal intervention.

Facial recognition technologies are usually used for verification (confirming whether a person is who he / she claims to be) and identification (matching unknown faces taken from surveillance footage with images in a database, e.g. criminal records). The techniques used for facial recognition can be geometrical (feature-based) or photometric (template-based). Traditionally, there have been four basic methods employed by facial recognition systems:

#### Eigenfaces

The famous mathematician David Hilbert was the first to use the term eigen (meaning 'own' or 'peculiar to') for a non-zero vector on which, when a particular linear transformation is applied, may change in length, but not in direction. The Eigenfaces

technology was patented at MIT and it makes use of 2-D greyscale images that represent distinguishing features of a facial image. Values are assigned to these features and an average set is prepared. Using statistical calculations, a covariance matrix of eigenvectors is arrived at, each eigenvector representing an 'eigenface'. Each new face that the system now encounters is evaluated on the basis of how it differs from the 'mean face'. When a face is 'enrolled', the subject's eigenface is mapped to a series of numbers. Understandably, it's all to do with numbers in the end, and not really visuals. These are then compared to a 'template' in the database. For verification, a subject's live template is compared against the enrolled template for identification, the comparison set increases but the process stays the same. The most significant drawbacks of eigenfaces lie in the preconditions – the images must always be frontal, full-face and the surroundings well lit for optimal results.

#### Feature analysis

Local feature analysis, used by Visionics in Tampa, is based on dividing the features of the faces into building blocks while simultaneously incorporating the relative position of each feature.

The interesting aspect of this software is that it even expects small movements of a feature and the resultant and simultaneous shifting of adjacent features that inevitably occurs. Unlike *Eigenfaces*, it can accept angles of 25 degrees (horizontal) and 15 degrees (vertical). Each human face has about 80 'nodal points' – distinguishing peaks and valleys and the software measures aspects such as the distance between the eyes, the width of the nose, the shape of the cheekbones, the depth of the eye sockets and the length of the jaw line to create a 'faceprint'. However, lighting and the angle to which the face was tilted towards the camera could adversely affect the results.

#### Neural network mapping

Artificial neuron networks are programmes that imitate the interconnected, unified responsive behaviour of biological neurons and are often combined with *Eigenface* systems to bring out better results in facial recognition. An algorithm is used to determine the similarity of a live person's face with an enrolled or a reference face. The system automatically re-adjusts the weight it assigns to individual features in the event of a false match.

#### Automatic face processing

A simplistic, but sometimes quicker technology, automatic face processing (AFP) uses the distance between prominent facial features such as the eyes, the end of the nose and the corner of the mouth to create its template. This is, however, not so efficient as the above systems.

#### 3D Facial Recognition

In the quest for greater accuracy, the trend of the last decade is towards the development of a facial recognition software that uses a 3D model. The image of a person's face is captured in 3D, allowing the system to note the curves of the eye sockets, for example, or the contours of the chin or forehead. Even a face in profile would suffice because the system uses depth, and an axis of measurement, which gives it enough information to construct a full face. The 3-D system usually proceeds thus:

#### Detection

Capturing a face either by scanning a photograph or photographing a person's face in real time.

#### Position

Determining the location, size and angle of the head.

#### Measurement

Assigning measurements to each curve of the face to make a template with specific focus on the outside of the eye, the inside of the eye and the tip of the nose.

#### Representation

Converting the template into a code – a numerical representation of the face, and,

#### Matching

Comparing the received data with faces in the existing database. In case the 3D image is to be compared with an existing 3D image, it needs to undergo no alterations. Typically, however, photos that are stored are in 2D, and in that case, the 3D image needs a few changes. This is tricky,



Minority Report had showcased high tech human identification technologies

### Face recognition login

Brillertek has developed a Face Recognition software for Windows platforms that allows users to login using just biometric recognition

### Trace your family

Automated face recognition technology can potentially be used to research your genealogy by crawling the web for similar faces

and is one of the biggest challenges in the field today.

In the Face Recognition Grand Challenge held in 2006 at Arlington, Virginia, the new algorithms proved to be ten times more precise than those of 2002. The advances even permitted the system to accurately identify and differentiate between identical twins.

### Skin texture

Skin biometrics is another supportive technology being developed by companies such as Identix, which merged with identity solutions provider, Viisage in 2006 – using the uniqueness of skin texture for more precise results. The software takes a picture of a patch of skin – a *skinprint*, which is broken into smaller portions and converted into a mathematical space by an algorithm, picking the lines, pores and patterns that constitute the skin. Systems such as FaceIt have been developed to incorporate Eigenvectors, local feature analysis and surface texture analysis to optimise results. However, long hair, dim lights or sunglasses could hinder the system's performance.

The commitment of resources by governments and venture capitalists and the labour of scientists and research students indicate face recognition is developing in the most unanticipated directions and face biometrics has already become an integral part of our daily life.

### Tomorrow is today

It is the distinctive feature of our times that we shall live to see many science fiction predictions come true in our own lifetimes. A lot of people were impressed by the sci-fi gadgetry in Steven Spielberg's *Minority Report*.

If you were one of them, you'd probably be even more impressed, and pleasantly surprised to know that something quite similar is already happening around you. Here are a few examples to shock and awe you:

### Infrared facials

A new innovative project in the UK has led to a breakthrough in eSecurity services by using infrared light. St. Neots Community College, in Cambridgeshire has given its support to the project and allowed the system to be installed in order to record

attendance. The students only just need to walk over to a scanner, and enter a PIN for their identity to be verified. The scanner is basically a system that takes an image using infrared light, invisible to the human eye, reinforcing the belief that face recognition is the most non-intrusive and time-saving biometric technology today. Poor ambient lighting does not hamper the system because the infrared flash lights up the face sufficiently, without the subject perceiving it. The system measures features such as distance between the pupils of the eyes, and, in less than 2 seconds, makes a match with the templates in the existing database.

### Korean forays

San Francisco-based 3VR Security Inc. recently released the results of its facial recognition technology tests, conducted in collaboration with Korea's SK Networks. The report claims 85 to 92 per cent accuracy with very few false positives, in the most uncontrolled and highly populated environments viz. the subway stations in Seoul. 3VR's special software is geared towards overcoming the challenges of video-based biometrics, specifically, the task of recognising and tracking faces in crowds of hundreds in real time, in spite

of poor lighting and imperfect camera angles. If 3VR's re-modelled still-image face recognition algorithms find their way into CCTV cameras all over the world, who knows, in a few years, you might just be picked off the street for that age-old parking ticket you didn't bother to pay.

### Faucet facets

iHome, a company based in China has come out with the ultimate luxury device – a super-intelligent tap! The *Smartfaucet* activates itself once it detects motion and uses face recognition technology to identify who exactly has stepped into the tub. The device then sets the temperature of the bath according to your prior preferences. It even has an LCD touch screen that can connect you to the world wide web.

### Face-savvy facades

Yahoo! Japan plans to install billboards that scan passers-by, identify their gender and age group, using facial recognition technology, and in true *Minority Report* style flash advertisements based on this assessment. Yahoo! has teamed up with Comel – a Tokyo based company – for the hardware, and NEC Soft (Japan) for the facial analysis technology. The boards will also display weather updates and news content apart from advertisements. Yahoo plans to set up about 500 such billboards in malls and railway stations of Fukoka, to begin with and later expand to Tokyo



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and Osaka. And you don't need to wake up when September ends for this one – it's already happening.

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### Lip Reads

Ever since the London bombings and the hours and hours of CCTV footage that had to be examined, law enforcers in the U.K. have decided to take the bull of terrorism by the horns. Earlier this year, groundbreaking research has begun, in an attempt to rectify the aberrations of suspect identification on CCTV records, by adding lip movement and speech pattern recognition to existing face recognition software. Face recognition experts, Omniperception and BAE Systems, a defence and security company, have tied up to try and hone the system to such a degree that a subject's face could be accurately recognised from distances as large as a hundred metres.

It looks like the entire world seems to be working to create that perfect face recognition solution. But what lies in store for face-based software in the near future? In order to remedy the inaccuracies of the systems we've developed so far, scientists all over the world have realised that the solution lies not just in 'face-recognition' but in other branches of science entirely, namely, neurophysiology, ornithology, entomology and the human visual system.

### Smarter licences

The transport authorities in Queensland, Australia have decided to replace almost three million drivers' licenses with 'smartcards' using facial recognition technology provided by Unisys Australia. The project is huge, involving several other partner companies such as Leigh Mardon Australia that will design the customer interface devices, and Daon, which will provide the biometric enrolment technology and middleware software. Starting in April 2009, and over the period of the next five years, Unisys will help prevent identity theft by embedding a biometric facial image into the smartcard chip. Typically, if someone's photo does not match the one on the card or matches the picture on another card – an alarm



Minority Report had showcased high tech human identification technologies

## Shorter Checkouts

The US Department for homeland security is working on a system where fingerprinting and face recognition can be used to process frequent overseas travellers faster

## How Humans See

The whole point of artificial intelligence is to try and create computing systems that operate more and more like humans and don't appear artificial at all. New research into the perception patterns of human beings has revealed certain strange and useful facts that are sure to have a significant impact on face recognition technologies.

Cues from the Face-blind: recent research into face blindness in humans has shown that the presence of emotional information in the face increases neural activity in the area of the brain called the FFA (Fusiform Face Area).

This proves that body and face-sensitive perceptions are dependent on emotional content and that neutral faces are more difficult to differentiate between. The FFA displays lower activation for neutral faces. Perhaps, then, our systems need to identify emotions in faces to make accurate assessments, just as humans do.

Remote control faces: a computer scientist in San Diego seems to have done just that. Jacob Whitehill, a computer science Ph.D. student from UC San Diego's Jacobs School of engineering has developed a technology for detecting facial expressions (part of an ongoing project at the school). Early last year, Whitehill successfully showed how his facial expressions could be turned into a remote control that speeds or slows video playback.

## Robotic Eyes

Facial Expressions fall under the broad head of 'non-verbal communication'. At the Tokyo Institute of Technology, a team led by Yoichi Yamazaki have built and eye-robot which is nothing but a pair of 'eyeballs' which can convey a whole range of emotions. While the attempt is to make a robot more expressive, using eyes as



Digital billboards from Yahoo!

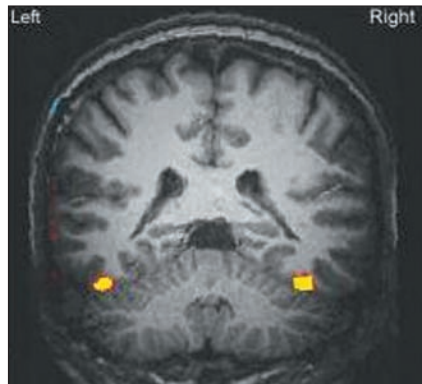
## iWant porn

There is a flip side to face recognition as well, the iWant Porn application substitutes a user's face on porn clips and distributes them

we humans do, it stands to reason that if a machine can successfully emote, it can surely be made to identify human emotions as displayed on a human face before it.

## Expressions in binary code

Jessica Dennis and Michael Ulrich, engineering students at the Rowan University College of Engineering, have spent 2008 working on developing a software program that has the capacity to read facial expressions. Using the JAFFE (Japanese Female Facial Expression) database, they arrived at four key measurements: the height and the width of the mouth and the height and width of the eyebrows. How wide the eyes were open and the jaw line were also considered as secondary measurements. The computer was then made to understand the expressions by translating them into binary code. After testing hundreds of photos, the duo determined that their software program had a 94.2 per cent accuracy for the emotions of surprise, fear and anger and an average of 76.5 per cent for all expressions.

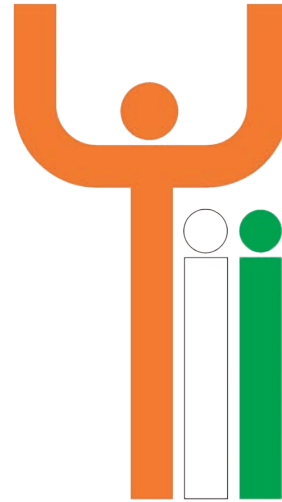


The Fusiform face area of the brain

## Liar, Liar

Paul Ekman, a veteran in the field of study of human facial expressions, in studying people with mental disorders has successfully identified what he calls "microexpressions" – split second facial expressions – that betray the subject's emotional state. According to him, no one can fake a microexpression because they are inadvertent and slip out in spite of the subject's conscious attempt to repression. The web site [www.mettonline.com](http://www.mettonline.com) was then set up by Ekman and his colleagues – a facility that anyone can log onto and train oneself in the art of picking out microexpressions that can show that someone is lying.

## Tomorrow's tech



Digit has decided to compile a list of Young Indian Innovators who are changing our world through tech. Send your nominations to [yii@thinkdigit.com](mailto:yii@thinkdigit.com). Visit [www.thinkdigit.com/yii](http://www.thinkdigit.com/yii) for more information

**YOUNG  
INDIAN  
INNOVATORS**

This has now been taken forward by Mary Frank, a former student of Ekman's, presently teaching at the University of Buffalo, New York, with the help of computer scientists from the University of California. They have succeeded in automating Ekman's Facial Action Coding System (FACS), turning it into a technology called the Computer Expression Recognition Toolbox (CERT). This has tremendous potential for use in forensics, and if proved to be faultless, can be used not just on video footage of court trials but also in interviews, weddings and business contracts. The only point that ought to be perhaps considered here is the that now the machines are going to be better at reading faces than most of us humans are. What that portends for the human race, we leave you to contemplate.

## Facing facts

To cut a long story short, research into facial recognition technologies is digging channels into territories that were deemed unconnected until a few years ago. The fact remains, however, that just as retina and fingerprint scanners can be fooled, faces can be altered (vide Michael Jackson) to outwit the most accurate algorithms. Even if Picasa's face-tagging software can distinguish between identical twins, there's a hacker born every minute and, in the long run, relying only on facial biometrics would be, well, myopic. It seems inevitable then, that a combination of several biometric technologies holds the key to a more secure identification system in the future. The latest in a list of biometric topics of interest are palm geometry and tracing the pattern of veins under the palm; the way a person walks (gait), the way a person bangs out text from his keyboard (keystroke dynamics), DNA and voice prints could be some possible combinations that could make face recognition more infallible. The right combination might just wipe that smile of the terrorist's face for good. **D**

**KHTML to WebKit**

This is still what drives Konqueror, KDE's multi-purpose web and file browser

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**Nimish Chandiramani**

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The browser wars aren't just about the feature-rich against the featureless, nor about open source software butting heads with Big Evil Corporation #22935. It's really the underlying technology – the browser engines – at war here: the way these browsers take the mess that is HTML code, and turn it into something pretty for us to see.

Why, though, does the browser engine suddenly matter? We're happy to compare programs on their features, because it's really the features we're using. Right?

But there's more to the browser than the features. With a great browser engine comes the ability to take that engine everywhere: from Windows to Linux to the Mac to the mobile phone to the game console to the Magic Intertube-surfing Shoe. A classic example is WebKit, which started out as the wind beneath Safari's wings, but now powers Google Chrome, the Android web browser, the web browser for Symbian, Safari Mobile, and such obscure but well-loved

browsers as OmniWeb and iCab.

**The simplest engine**

Let us consider a hypothetical browser engine whose only purpose is to take HTML and convert it into a displayed web page – none of these fancy JavaScript or CSS designs for this one. As it receives HTML code, it finds an opening tag – `<b>`, for example – and recognises that it needs to start spewing out bold text until it reaches the closing `</b>` tag.

That, then, is what browser engines are supposed to do – whatever the HTML tag tells them to. If you're old enough to remember WordStar, it's the same concept – tell the program to start bolding text here, and stop there.

But if you do want that fancy JavaScript and CSS stuff, this approach doesn't work, because you want your document all ready and rendered first, so that you can use JavaScript programming to add some interactivity. And so came the Document Object Model.

**Treat them like objects**

Once JavaScript was born, the simple

read-and-spew approach wouldn't do at all. JavaScript needs to take web pages and manipulate them, and the only way to do that is to turn an HTML document into a collection of objects. The document itself, in fact, is an object.

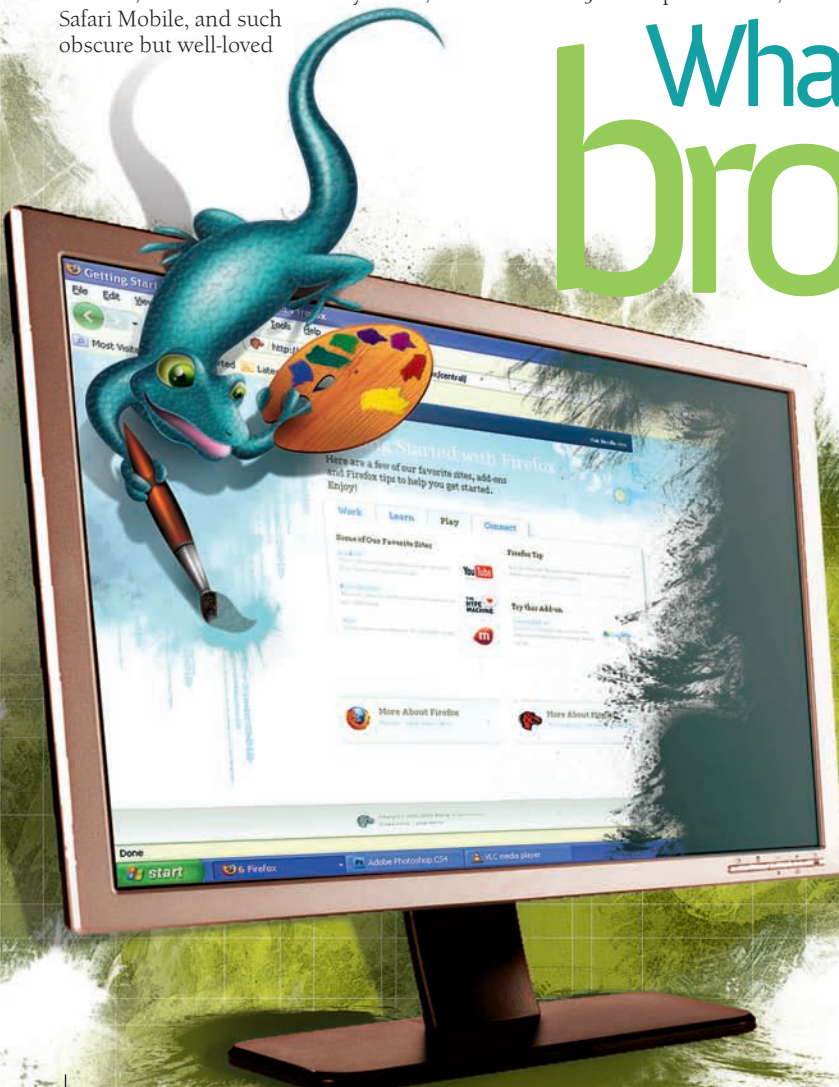
Now, instead of HTML turning into a stream of text, the browser turns an HTML page into a Document object, with all HTML elements within becoming child objects – paragraphs, forms, links and so on – creating a hierarchical tree of objects. This object-like representation is called the *document object model* (DOM), and it opens up a host of possibilities.

In object-oriented programming (OOP), objects are wonderful things. They are balls of programmatic clay, which can be moulded and manipulated as the programmer sees fit. If, for example, browser developers decide that all forms should have a green halo around them, they can do that – the HTML code itself doesn't need to change. And now, pages can become less boring, too.

By implementing a DOM, browser developers gave web designers their greatest

# What drives the browser?

What is this browser engine thingy, really, and why must we care?



Imaging Chaitanya Surpur

gift yet: the ability to separate design from content. Browsers could support CSS, which could manipulate all the non-interactive properties of the HTML elements – colour, size, font, borders – all the stuff it would be pointless to have JavaScript do.

And so, the foundation for the browser engine is complete. Simple, really.

### The muddy pool

In an ideal world, Netscape and Microsoft would have implemented the DOM and JavaScript in the same way in both their browsers. The browser wars would have then centred around only features, and we wouldn't suffer the agony of sites that don't use web standards. Ah, well.

It all probably started with JScript, IE's JavaScript me-too. While it could understand some of Netscape's JavaScript, no other browser could understand JScript. Both companies came up with their own custom additions to the DOM standard – Netscape came up with "layers", much like Photoshop's layers, which could be turned on and off using JavaScript; Microsoft, on the other hand, added the `document.all` object, which let JavaScript (or JScript) select any object in the document with a simple `document.all["id"]`, rather than navigating through the object tree, which was what the W3C would have wanted it to do. Other, more frivolous things came, too. Netscape, likely playing a nasty practical joke on the world, introduced the `<blink>` tag, which made text, well, blink annoyingly. Microsoft threw the `<marquee>` tag at us, resulting in the less annoying side-scrolling text.

Perhaps the only good thing to come out of this rush to implement new features was IE's `XMLHttpRequest` object, which lay

the foundation for the AJAX we all know and love. Besides that, though, the web essentially went to pot.

But you've lived through this first browser war, and you've seen browsers approach more standard DOM implementations.

### The importance of objects

In Object-oriented Programming (OOP), objects have two key characteristics: properties, which describe the object, and behaviours, which describe what the object does. These objects are built on blueprints, called classes. An object from the "button" class, for example, has a property called "value", which tells the browser engine what text to use on the button; and the `click()` behaviour, which simulates the effect of being clicked.

Browser developers get to make their own blueprints for these objects (though it's a better idea to stick to the DOM standard specified by the W3C), giving them the ability to assign whatever properties and behaviours to HTML elements that they choose.

### So why bother?

With all the recent emphasis on web standards, we've (somewhat) come beyond the days when different DOM implementations caused sites to run fine in one browser, and completely crash in another. As a user, there's little likelihood that you'll run into major problems.

Today's browser wars still centre around which features the engines can offer, but rather than coming up with their own non-standard features, the developers

now race to implement features from the latest W3C standards.

This, however, doesn't mean that browser engines are becoming homogenous.

### Behind the best

Perhaps the most important rivalry between browser engines is that of WebKit – which powers Safari, Chrome, and others – and Gecko, which powers Firefox.

WebKit is a fork of KHTML, which was designed to be a simple, light HTML engine that was standards compliant, and easy to maintain. It's been praised for its clean code and small memory footprint, both of which played key roles in what WebKit has become today – the browsing engine that can hop platforms really, really easily. WebKit is now the engine behind Safari on the iPhone, the S60 web browser on Nokia mobile phones, Android's web browser, and Google's Chrome. Developers are also using WebKit with the GTK (GIMP Toolkit) to develop rich internet applications in Linux.

Gecko, on the other hand, is so much more than just a simple HTML engine. It gives us the XML User Interface Language (XUL), which gives developers a way to write full-featured applications using simple XML, CSS and JavaScript. It makes Firefox extensions possible, and we all know how appealing those extensions are to Firefox

users. XUL also became the base for applications such as Thunderbird, Songbird, and the Komodo IDE. To Gecko's disadvantage,

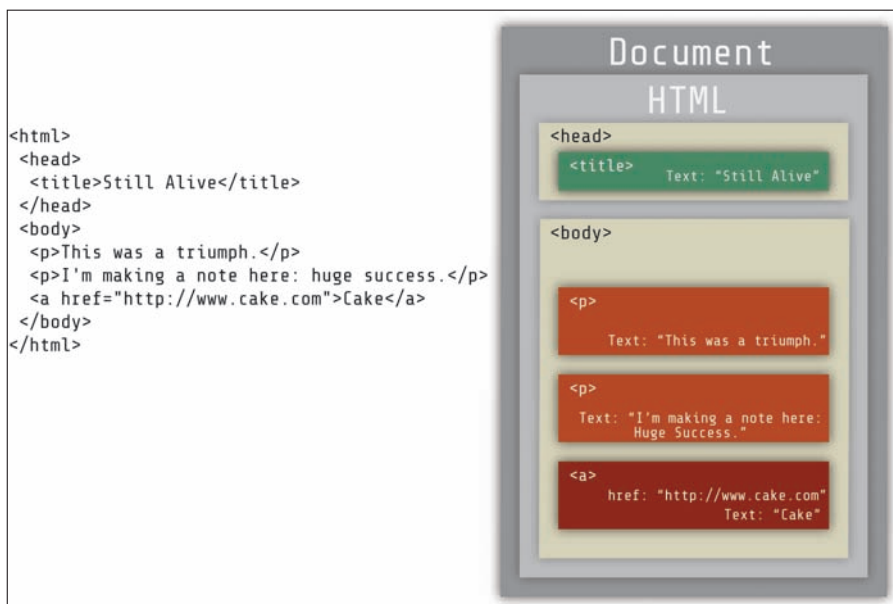
these features made the code bulky and complex, making it difficult for it to make the transition into the mobile world. After much toil, Mozilla's Gecko-based mobile browser – Fennec – is in beta (as of this writing), and has been well-received.

### JScript gave Web developers many more features to play with, including the ability to store data

### Keeping the engine running

It's simple economics, really: as customers, the ideal number of competitors we need is two, so that we can pit one against the other, and force them to offer us something better. WebKit may include better support for extensions, for example. We've already seen Gecko get speedier and lighter in response to competition from WebKit. If one browser engine were to dominate all our platforms, we'd just go back to the days of IE6 – innovation would stop, and every flaw in the engine would become painfully apparent on every platform, with no alternative in sight until the developers fixed it.

WebKit gives us rich internet applications as an added bonus, and Gecko gives us the ability to build desktop applications. Soon, we'll see more from both camps. This is good. This will do. **d**



Converting simple HTML code into a DOM

Image courtesy: Sony



# Sony Bravia KDL ZX1

## Better backlighting techniques next time please

**K**udos to Sony, since they managed not only to get their LED LCDs to India but they also gave us a sneak peak by sending one to our test labs. Naturally we were excited when we unboxed this beauty. Starting off we have one grouse – she’s got ugly feet! The ZX1 has got a round, fat and ugly looking stand that is a far cry from the sleek, slim stands used by LG and Samsung. The bezel is a little wide but finished in brushed metal tones that gives a classy look. The entire body is black. Looking at her sideways we were surprised to see how slim she was. Sony claims 9.9mm at the slimmest point – pure swimsuit stuff, if only she had prettier feet.

The KDL ZX1 is a 40-inch panel and when you heft it one of the benefits of an LED backlighting system become apparent – it weighs no more than a 22-inch LCD monitor. Sony also thought it prudent to provide just one HDMI port on the display and the remaining connects on a “media receiver” box. In case you are wall mounting this makes sense. In terms of connectivity it’s got Composite, Component with discrete RCA audio connects, a D-Sub connect and 3 HDMI ports. One Optical audio out is also provided as is a cable TV connect. On the front

of the receiver a USB input and an express card slot is also given. This receiver box connects to the display wirelessly - a unique feature because it eliminates any sort of cable clutter. Not only this it supports up to 1080i signals wirelessly. Wireless HD anyone? The frequency of the wireless signal is 5 GHz. We tested the integrity of the wireless data signal and are pleased to report that there is no lag and walking in between the receiver and display doesn’t affect the transmission – super. Unfortunately 1080p isn’t supported, if you wish to use this resolution you will need to hook the receiver up to the single HDMI port on the display.

When using DisplayMate one of the issues we noticed was of a delay (lag) when dimming or brightening the screen. This is probably due to the backlight LEDs mounting on the ends of the display along the sides. The light from these LEDs is channelled using some sort of reflective sheet, meaning the centre of the display is actually a few feet away from the actual light source. Although not noticeable when gaming or watching movies when a static screen is used the display will take a couple of seconds to adjust its backlight. Of course this is also the key to its slimmest – there is no way Sony could shoehorn in backlight LEDs

directly behind the LCD screen (as is done traditionally) and enclose everything in so slim a package. This prevents any sort of local dimming of LEDs around a particular area and this hurts the displays contrast ratio figure – our Spyder 3 Elite lists it at 664:1 – not bad, but we expected a figure closer to 1500:1. Luminance is also low – 162.5 cd/m<sup>2</sup>. Owing to this and the decentralised LEDs the colours look a little dim and not as bright as we’re used to seeing on the best panels. The reds and greens should be more vivid and lifelike but the KDL ZX1 cannot manage this.

Overall everything looks a little soft, thankfully even static images have no noise whatsoever and motion pictures lack any sort of banding. Movies have great contrast with good detailing and minimal noise in darker areas. Photos are clear and crisp – you may want tune the display properly to get slightly more vivid images. Blacks are deep and true and this monitor has a good black level. Even while gaming we had no issues except with F.E.A.R where the screen on the whole looks a little too dark at times. It’s hard to imagine why Sony went with this weird design with the LEDs around the corners and sides.

For us, this display was a mixed bundle. The backlight delay issue is annoying as is the rather soft, sterile output. We can’t comment historically because this is the first LED-based LCD display we’ve tested, but something tells us there are better models out there. Personally we wouldn’t mind the display being a little thicker and heavier, but having a full LED-array behind the LCD panel, after all what’s half an inch of thickness in comparison to pristine quality?

However, it has very good image quality with great contrast but we expected more for its price. It has got innovation in spades – with the unique backlighting technique and the wireless receiver unit, but priced at Rs. 2,00,000 we recommend skipping buying this and waiting for better panels – they’re sure to be on the way.

### Contact

**Sony India**

**Phone:** 1800-11-11-88 (Toll Free)

**Email:**

sonyindia.care@ap.sony.com

**Web site:** www.sony.co.in

**Price:** Rs. 1,99,900

### Specifications

**Size:** 40-inches,

**Resolution:** 1080p,

**Connects:**

4 x HDMI, Component,

Composite, D-Sub,

Optical audio,

USB and Express Card slot

### RATINGS

Features .....	8
Performance .....	7
Build quality .....	7.5
Value for money .....	3.5
Overall .....	6.5



## Follow me

Twitter is working on a feature that lets users share locations

## Dell Inspiron Z series

Dell axes the Inspiron 12 netbook, launches the Inspiron Z series sporting 11.6-inch displays and CULV processors

## Zune HD

Zune HD to start selling on September 15th in the US, starting at \$220 (approximately Rs. 10,560)

# Razer Moray

### Gimme Mo...

The Moray represents Razer's first effort at earplugs. Although it's meant for gamers there is no microphone unit though an airplane adapter is present as well as three sizes of earbuds. The soft carry case is large enough for your earphones as well as a generous sized PMP. Build quality of everything is good.

When it comes to music the Moray does reasonably well with blues and jazz – female vocals have a pleasant richness to them although male vocals seem slightly hollow. Instruments like the guitar and piano are done well although cymbals do not sound as crisp as they should. Bass can get boomy and uncontrolled

and is not impactful. Sound-staging is totally absent – all sounds seem to emanate from the left and right. Instrument congestion is noticeable and intrudes on the experience with complex tracks. That being said the mid-range is a little more pleasing than the Creative EP630.

The Moray does better when gaming. Thanks to its closed nature it allows hearing even minute sounds as we discovered in Warcraft 3, although to be honest accurate positioning isn't possible. Quake 3 is much better and the boomy bass makes rocket whooshes and railgun pings



sound scary and will have you whipping around. The shorter cord may spell trouble for a lot of gamers - pity and extension wasn't provided as this was expected.

For the price of Rs. 2,235 we must say these are overpriced, but then that's all Razer gear for you – overpriced though the legions of chanting fanboys will disagree. If you are looking for a set of gaming earphones you could just as easily go with the Creative EP630 or EP830 both of which offer comparable sound at less than half the price.

## Contact

**Netplace Technologies Pvt. Ltd**  
**Phone:** +91-22-42253901  
**Email:** enquiry@netplacetechologies.com  
**Web site:** www.razerzone.com  
**Price:** Rs. 2,235

## Specifications

**Frequency response:** 20 Hz to 11,000 KHz;  
**Impedance:** 17 ohms;  
**Cord length:** 1.3 metres;  
**Connector:** 3.5mm plug

### RATINGS

Features .....6.5  
Performance .....6  
Build quality .....7  
Value for money .....5  
Overall .....6

# Mercury iXa 240

### Sound in style? Not really...

The usual 2.1 speakers are common enough and there is nothing that stands out of these. A neat looking set of stereo speakers with a dedicated woofer. The satellites are very light and constructed of plastic. The driver units are exposed, we're normally used to seeing some sort of mesh shroud. The woofer unit is small and light and doesn't feel that sturdy. The woofer is down firing therefore Mercury provided this unit with one and a half inch long rubber feet to allow for some distance between the units' driver and the floor. Incidentally the woofer driver is a mere four inches – not impressive, we figured even for an entry level setup at least a 5.25-inch woofer should have been provided. The satellites have a single 2.75-inch driver each – no horns or tweeters here. Connectivity is provided

via RCA ports on the woofer.

We hooked these up to our test system and turned the volume up to around 75 percent. It's safe to say these speakers weren't meant for high volumes and the distortion that occurred was enough to deter us from venturing higher. Once the volume has been set to 40 percent the sound doesn't distort. Mind you, they're still reasonably loud for a desktop set of speakers, but those who like their music loud or people who want to watch movies from a bit of a distance will be disappointed. The bass is seriously lacking, especially noticeable in movies and games but also with music. The mid-range is decent and vocals are clear, unfortunately the music isn't involving – vocals don't have weight to them and neither do the guitar notes. The highs are seriously rolled off

and there is a lot of muddiness to the sound when playing any music that is even distantly complex, metal and rock tracks sound congested.

So who would buy these given our list of complaints that could span a page if we tried? Well for one they're cheap (Rs. 1,100) - something nearly everyone looks for. They're also decent at lower volumes where you get a little more detail.

Photographs: Manas Parekh & Jiten Gandhi



## Contact

**Kobian Pte Ltd**  
**Phone:** +91-98100 85042  
**Email:** ravi\_dhyani@kobian.com  
**Web site:** www.kobian.com  
**Price:** Rs. 1,100

## Specifications

**Total RMS:** 28 watts (Woofer - 4-inches, Satellites - 2.75-inches); **Frequency range:** - 35 Hz ~ 18 KHz;  
**Controls:** volume, bass

### RATINGS

Features .....6  
Performance .....3.5  
Build quality .....5  
Value for money .....7.5  
Overall .....5.5

# Nokia N86

Nokia catches up in the mega-pixel race with its 8 MP shooter

The N86 is a premium-segment phone from Nokia's N series. This slider borrows many aspects of its predecessor, the N85. Dimensionally, its not exactly pocket-friendly – and weighing 149 grams, it feels a bit on the heavier side. The phone's build is quite decent. The sliding mechanism's smooth as well. Looks-wise, its probably not eye-candy, but it does look like its worth high moolah. The metallic frame around the front-face and the anti-scratch front surface bring in sturdiness to the phone. The 3.5mm headphone jack's placement at the top is convenient. The buttons on the phone overall are fairly tactile. People with large fingers may find the numpad and the media buttons to be somewhat small. We found the keypad-lock switch on the side to be quite nifty.

The 2.6-inch AMOLED screen displays content quite nicely; colors appear richer and the size is big enough to act as a viewfinder for the 8 mega-pixel camera on-board. The sunlight legibility of the display isn't great when sun rays are directly incident on it. An easy fix - slightly tilting the screen makes the content readable.

The UI auto-rotate feature changes the screen orientation quickly; but it is not accurate all the time. It runs the Symbian OS 9.3 quite smoothly. There's almost no lag except for the photo viewer app or when you're using more than three apps at a time. The UI is quite easy-to-use, the help menus give out useful info about every function. The N86 8GB internal memory is adequately-large; plus

there's a microSD card slot for further expansion. But for a phone with a nifty kick-stand, we wished the media player support popular video formats like DivX or XviD. The FM transmitter feature worked pretty well, as long as the phone was kept quite close to the receiver. There are a plethora of connectivity options: Wi-Fi, HSDPA (3.5G), A-GPS, Bluetooth and microUSB. We were disappointed with the data-transfer rates over USB – the speeds averaged at around 1.5 MB/s. The web-browser is supports full HTML pages and gives you an overview of the page and you can zoom into individual sections easily.

Let's talk about the star feature of the phone; the camera. The day-shots turned out to be quite good. The noise was quite low. Photos looked very clear on a PC. The color reproduction was natural. Instead of a Xenon flash, Nokia decided to stick to the traditional dual-LED flash. But it does the job fairly well as it illuminated

loaded with the N-gage application. It has a couple of games like Fifa 09, Prince of Persia etc. for trial. The media buttons can also be used as the A-B control buttons. Thus, you can play games like you would on your PSP. Although thanks to the average tactility of the buttons, it isn't an entirely convenient experience.

The N86's got good network reception and call quality. With regards to music, the provided in-earphones deliver a decent audio quality. The music player app arranges your songs according to artists, albums, genres, etc. The phone comes pre-loaded with a trial version of their turn-by-turn navigation software. It currently has preinstalled maps of 8 major cities in India. Alternatively, one can use the freely-available Google Maps. It doesn't take long for the phone to get a fix thanks to A-GPS. But the unit on the N86 had difficulty in maintaining a GPS fix. We'd rate the GPS performance above average. The app navigates pretty well and one could have used this phone as a dedicated GPS device; had the GPS fix been more consistent.

TV-out is supported Wirelessly to compatible uPnP/dlna devices and via cable. But unfortunately the cable isn't provided in the package. Battery life is quite average. On heavy usage of the phone (GPS, FM Transmitter, Music etc.) the phone barely lasted a day.

At over Rs. 27,000, the phone is priced a little above 8MP camera-phones from competitors. The phone does deliver when it comes to its main feature – the camera. But you're paying quite a few thousand rupees for that jump from 5 MP to 8 MP. If the price does not scare you, and you're looking for a good multimedia phone from Nokia, then the N86 just might deliver.

pitch-black environments to a decently viewable level. It records video quite smoothly at VGA resolution. Features like face detection and image stabilization were not available on this phone. The wide-angle lens makes its use only in the panorama mode. It automatically takes sequential photos and stitches them into a wide-screened image.

The phone comes pre-



Image courtesy: Nokia

## Contact

**Nokia India**  
Phone: +91-11-30303838  
Web site: www.nokia.com  
Price: Rs. 27,359

## Specifications

**Display Type:** 2.6 inch AMOLED;  
**Memory:** 8 GB internal, microSD upto 16 GB; **Camera:** 8 MP, 28mm Carl Zeiss lens; **Dimensions:** 103.4 x 51.4 x 16.5 mm;  
**Weight:** 149 g

## RATINGS

Features .....	7.5
Performance .....	7.5
Build Quality .....	7
Value for Money .....	6
Overall .....	7

## Firefox 3.6

Early alpha builds of Firefox 3.6 are already available

## 479 million

According to the TRAI, India had 479 million telecom subscribers by the end of July

# Gigabyte 3D Aurora 570

## The aluminium wonder

The 3D Aurora 570 is a gaming cabinet from Gigabyte that's completely made of aluminium with black exteriors and a faint brushed aluminium finish.

The front of the cabinet has a door within which the power and reset buttons are located. There is a locking mechanism present, so if you don't want anybody using your PC while you're out, just lock the front and leave. The same lock is also present on the side panel, which means an added security measure. The side-panel can be removed by a simple clip-mechanism.

The optical drive bays (5.25 inch), in the 3D Aurora 570, have a screwless mounting mechanism, where you just need to slide the drive in and lock it with the plastic locking system. A different type of screwless mounting mechanism is used

for the 3.5 inch drives; you first need to clip on plastic rails and then slide the drives in. The rear expansion slots can be taken out with ease, once the holding clip is unlocked.

The three 120 mm fans in the cabinet have blue LED lights. They are connected together, and are powered by a single 3-pin connector from the motherboard. The drawbacks about this cabinet include no provision for extra fans to increase airflow, no removable motherboard tray and no support to attach a CPU cooler's backplate without removing the motherboard.

The Gigabyte 3D Aurora 570 costs Rs. 12,945, which is just too much for a cabinet with such features. It does have

some advantages, being light and stylish, but if you are willing to spend so much we would suggest you get the CM Storm Sniper instead.



### Contact

**Priya Ltd.**  
**Phone:** +91-22-42203100  
**Email:** sales@priyagroup.com  
**Web site:** www.gigabyte.in  
**Price:** Rs. 12,945

### Specifications

**Type:** Full Tower;  
**Dimensions:** 571.5 x 542.9 x 206.3 mm;  
**Weight:** 6.8 kg

### RATINGS

Features .....7.5  
Performance .....7  
Build Quality .....6.5  
Value for Money .....5  
Overall .....6.5

# Seagate Momentus 7200.4

## 9.5 mm with 7200 rpm

### Contact

**Fortune Marketing**  
**Phone:** +91-11-26414468,  
26472491;

**Email:** sales@fortune-it.com  
**Web site:** www.fortune-it.com  
**Price:** Rs. 6,850

### Specifications

**Capacity:** 500 GB  
**Cache:** 16 MB  
**Areal Density:** 394 Gbits/inch2  
**Dimensions (HxWxL):**  
9.5 x 69.85 x 100.35 mm  
**Weight:** 110 grams

### RATINGS

Features .....8  
Performance .....7  
Build quality .....8  
Value for money .....6  
Overall .....7

Previously we've reviewed the Seagate Momentus 5400.6 notebook hard drive, this month around, we got the Seagate Momentus 7200.4 which is also a notebook hard drive, but the difference here is that, the first has a spindle speed of 5400 rpm and an 8 MB cache, whereas the second has a spindle speed of 7200 rpm and 16 MB cache.

The capacity of this particular Momentus 7200.4 is 500 GB and has a two platter design.

The thing that really grabbed our attention here was the fact that Momentus 5400.6 outperformed the 7200.4 in most of our tests. As you can see,

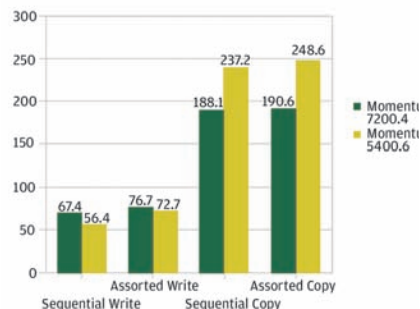
the file transfer test results show the Momentus 5400.6 being faster, even though the synthetic benchmarks HD Tach and SiSoft Sandra show the results that the 7200.4 has better read speeds than the 5400.6. The only benchmarks where the



Momentus 7200.4 did better than the 5400.6 with the internal file copy test. graph

The thing about the Seagate Momentus 7200.4 is that with its spindle speed, you will tend to feel the vibration than what you would with a 5400 rpm hard drive if fitted into a laptop with a compact chassis. But if you were to use this on something like an Dell Studio XPS, then these vibrations wouldn't be that noticeable.

If you do need to upgrade your storage solution on your laptop then we would suggest you buy the Seagate Momentus 5400.6 at Rs. 5,250, rather than the Seagate Momentus 7200.4 at Rs. 6,850.



**iLike MySpace**

MySpace has agreed to buy iLike, a music recommendation service

**Bing gets popular**

Microsoft's Bing search engine has captured 8.9 per cent market share in July



# ASUS RS700-EP6/RS4

## Excessive power!

It's not very often that we review servers but Intel gladly arranged an ASUS RS700 1U rack server to showcase their latest Xeon processor range based on the Nehalem architecture or the Core i7 as it's better known as.

The ASUS RS700 is 1U a rack server. It's the kind typically found in large web hosting and server installations under controlled environments.

There are no fans on

the processor but two giant heatsinks densely packed with fins. Tiny high CFM fans line the entire width of the server and blow air through the heatsinks and out the back.

The specifications on this thing are mind boggling. Two Xeon X5570 processors each running at 2.93 GHz each. It has six 4 GB sticks of DDR3 memory – that's 24 GB and there's space for another 24 GB! Being a server which

is meant to be controlled remotely almost all of the time, the graphics solution is very basic. This server has 8 cores and with HT, that's 16 threads. The performance is nothing short of astonishing in every benchmark.

We ran 3ds max, Maya and Cinebench on the server with the default settings left on. Each one of them used all of the cores. The Maya global illumination test scene used in

our processor tests rendered in 28 seconds. To give you a better idea of what this means, a really fast Intel Core 2 Duo E8600 takes 76 seconds for the same render. In more realistic situations, a render that would take 20 to 25 minutes took just 4:43 minutes.

The server is intended for multi-threaded applications which include rendering or database hosting or web hosting. The processors used on this server the Xeon X5570 is priced at Rs. 67,500 (\$1386). The server cost itself depends on how you customize it.

**Contact**

**Web site:** www.intel.com (Intel Xeon) / www.asus.com (ASUS RS700);

**Price:** Rs. 67,500 (\$1386) for Xeon X5570

**Specifications**

Intel Xeon X5570 2.93 GHz, 4-cores, 8 MB cache, 6.4 GT/s QPI, TDP 95W

**RATINGS**

Features .....	8
Performance .....	9
Build quality .....	8
Value for money .....	4
Overall .....	7

**Contact**

**Cooler Master Co.Ltd.**

**Phone:** +91-98338 70302 / 94225 01592

**Email:**

Tanmay.L@Coolermaster.com

**Web site:** coolermaster.com

**Price:** Rs. 6,500

**Specifications**

**Dimensions:** (D)22.3 x (W)10 x (H)21.7 inch

**Net Weight:** 10.6 kg

**RATINGS**

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

# Cooler Master Storm Scout

## Search and destroy

A few months back we had reviewed the CM Storm Sniper which was more on the high-end series, but this time around the Scout is aimed towards the budget gamers.

The Scout has a slightly tinted acrylic sheet on one side. The top portion is made of plastic and is shaped somewhat like a handle. It has a button which you to switch off all the LED lights present on the fans when they are not needed.

Space for the power supply has been given at the bottom

of the cabinet, but with that there is also a filter and mesh provided, but facing the bottom.

Though the outer body of the CM Storm Scout is sturdy, that is not the case with the internals. The space given for the optical drives (5.25 inch drives) is not sufficient and makes for a very tight squeeze within the cabinet.

The cost of the CM Storm Scout is Rs. 6,500. Perhaps, the cheaper CM 690 would be a better option.



## PS3 Slim announced

Sony finally announced the PS3 Slim, going on sale on September 1st

## First Lynnfield CPU out

Although not officially launched, the 2.66 GHz Core i5 750 has already made it's way into a few hands

# Cowon D2+

### She shook me all night long

**A**t first look it doesn't impress with a credit card sized body that's 0.65-inches thick and minimalistic frills but everything about the build bespeaks quality from the finish to the slightly recessed, 2.5-inch touchscreen that is crisp with good colour although the on-screen icons could do with a makeover. Support for multiple audio formats including .FLAC and .APE and a load of video formats, SD expansion along with a proprietary AV out and a bundled notepad and flash player tells of a serious feature set. The touchscreen works well although at times a mishit occurred; the menu is well laid out but appears dull, could be better.

In terms of sound quality the D2+ scores big and is easily a cut above most run-of-the-mill PMPs. Music is involving – bass is crisp with a nice hit,

but not as deep as some may like. The min-range is a lot of fun and very involving; there is a lot of emotion and weight to female voices in particular and guitar tracks are very involving. Our only complaint though one hardly noticeable by non-discerning users is the lack of control in the top-end and at times the D2+ drove our reference cans to sibilance and extra sparkle in the treble that loses detail. In really complex passages the instruments do get a little congested.

Video playback is good, with crisp output, but really for a video PMP a bigger screen is mandatory and anything with a resolution of above 320 x 240 pixels will not play. The bundled earphones are pretty decent. Battery life is excellent with well over a day of MP3 playback. At Rs. 9,500 for the 8 GB version the D2+ is a high-end PMP but one that does a



bit of everything and quite well. Purist audiophiles will find something to nitpick, but it's good value. Don't buy it for it's video component.

### Contact

**Lipap Systems Private Ltd**  
**Email:** [iaudio@lipap.com](mailto:iaudio@lipap.com)  
**Web site:** [www.cowonindia.in](http://www.cowonindia.in)  
**Phone:** +91-98199 17440  
**Price:** Rs. 9,500

### Specifications

**Screen:** 2.5-inch touch, 16M colours; **Audio:** built-in voice recorder, FM radio, 74 mW output power, multiple audio and video formats supported;  
**Weight:** 91 grams

### RATINGS

Features.....	8
Build Quality .....	8
Performance.....	8
Value .....	7.5
Overall .....	8

# Gigabyte GM-M6880

### Large 'n light

**G**igabyte is normally known for their computer hardware such as motherboards and graphic cards. But this time around we are checking out the GM-M6880 which is a gaming mouse from Gigabyte.

The GM-M6880 has a glossy black exterior with a total of six buttons on it; the regular three buttons, a single dpi button and two customizable buttons on the left side which can be reached by the thumb. The overall ergonomic design of this mouse is well suited for those with larger hands. You can adjust the dpi settings on this mouse with a click of a button, but only between 800 and 1600.

Moving the GM-M6880

was really not a problem and the pads provided were very smooth. But the drawback we see here is the weight of this mouse (145 grams including the wire), as it just felt that the mouse was moving faster than normal. Also when you click hard, which will be a scenario with intense moments while gaming, the mouse seems to move off balance and slightly tilt forward, which is something gamers do not want.

The glossy plastic material used is not the best either, as when and if you start to sweat, the precision of clicking will reduce and you will tend to slip.

Overall, this mouse does have the gaming appeal to it with its design, and is priced



very competitively at Rs. 945, as far as gaming peripherals are concerned. The Gigabyte GM-M6880 will attract those of you who are just starting gaming and don't want to spend a lot of money on their peripherals, yet. If you are a veteran or pro gamer, then this is not something that you would enjoy.

### Contact

**Priya Ltd.**  
**Phone:** +91-22-42203100  
**Email:** [sales@priyagroup.com](mailto:sales@priyagroup.com)  
**Web site:** [www.gigabyte.in](http://www.gigabyte.in)  
**Price:** Rs. 945

### Specifications

**Resolution:** 800 / 1600 dpi switchable  
**Cable length:** 1.5m  
**Dimensions:** (L)127 x (W)75 x (H)42 mm  
**Weight:** 145 g

### RATINGS

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



**Kingston DDR3**  
Kingston launches dual channel HyperX DDR3 memory



**ASUS and F1!**  
ASUS debuts their Formula series of graphics cards with dust proof fans and an aerodynamic design

# Belkin N150

## The right route

The Belkin N150 is a wireless router that is 802.11b and 802.11g certified and is based on the draft 802.11n technology. The router is black in colour and is mounted vertically on a stand. Even though there was no wall mounting option, the Belkin N150 is small, and stylish enough, with its rounded edges, to suit any area in the house or even a small office.

The reset button on this device is well hid within the side design of the router. The router lights present on the front are well distinguished, having separate LED icons each for Power, Wired, Wireless, Modem, Security and Internet.

This router has some good security features such as WPA / WPA2, 128-bit and 64-bit WEP. Other features include

Mac address filtering, IP filter, connection to a VPN, DDNS, DMZ which allows users to connect to the internet outside of a firewall.

In Zone 1, which is just next to the router, it hardly took 13 seconds to transfer 100 MB of a single file, but it took about 43 seconds to transfer the assorted 100 MB file. In Zone 2, located one room away, with a closed door as an obstacle, the transfer times were decent as it took 26.6 seconds and 35.4 seconds respectively. Zone 3, located a floor below the router, took



101.3 and 107.8 seconds to transfer the files.

This router is priced competitively at Rs. 2,899, and if you are looking to buy an N150 router, that is under Rs. 4,000, then we would recommend you get this as for its price, it's giving you bang for the buck.

### Contact Belkin

**Phone:** +91-124-6688800  
**Email:** rengithn@belkin.com  
**Web site:** www.belkin.com  
**Price:** Rs. 2,899

### Specifications

**ISP Protocols Supported:** Dynamic, Static, PPPoE, PPTP, Telstra Bigpond, L2TP  
**Compliant Standard:** IEEE 802.11b, 802.11g  
**OS Support:** Windows 2000, XP, Vista, Mac OS X 10.5

### RATINGS

Features .....8  
Performance .....7  
Build Quality .....6  
Value for money.....5  
Overall .....6.5

# Corsair CX400W

## A little less power but still plentiful!

Everybody wants huge power supplies but the fact remains that most 450 to 500W power supplies can handle most of today's hardware. Good power supplies from reputed brands are usually over 450W. Corsair's new CX400W power supply comes in to fill the void.

The power supply looks similar to their hot selling VX450 model. It has the similar sized fan and the same finish. This isn't a modular power supply. The cables on the CX400W are long and will cover entire length of cabinets. The sheathing on the cables isn't as tough as the VX450 but definitely better than what most of the 450W power supplies in the market offer.

There is a difference in the weight of this PSU and other cheaper PSUs in the market. It

also has a larger fan and thus runs a lot quieter. The cooling is sufficient and there are no stability issues whatsoever. A power supply like this can easily handle a GeForce 8800GT class graphic card with a couple of hard drives on an Intel Core 2 Duo system.

For this kind of capacity, you can't expect a PSU for

your SLI/CrossFire needs. For someone who's buying an mid-entry level graphics card, the CX400 is excellent. It's priced at Rs. 3,491 which is also more expensive than the cheaper PSUs we keep talking about. However, it's a much better one but we wish it were priced a little cheaper.



### Contact

**Corsair**  
**Phone:** 1-800-425-5464  
**Email:** indiaservice@corsair.com  
**Price:** Rs. 3,491  
**Web site:** www.corsair.com

### Specifications

**Total power:** 400W,  
**Power connectors:** 24/20 pin power connector, 4/8-pin ATX, 6 SATA, 6 molex and 2 floppy connectors

### RATINGS

Features .....7  
Performance .....8  
Build quality .....7  
Value for money.....6.5  
Overall .....7

## Belkin brings you Skype

Belkin announces their new Wi-Fi Skype phones



## BlackBerry Storm 2

BlackBerry Storm 2 is expected to support Wi-Fi

# BlackBerry Curve 8520

### Finally affordable

**R**IM, the company behind BlackBerry phones plan to do away with the whole phone for the businessman image. Their new BlackBerry Curve 8520 is a much cheaper phone at just Rs. 15,990 but what do you not get as compared to the costlier models?

Firstly, there isn't the sandy-feel scroll ball. It's replaced by a slightly tacky but effective trackpad which doubles as a button. It makes usage a little more easier and effortless. There are a few glitches while using in bright daylight though. The QWERTY keypad still has the slightly banked and chopped design to it. Even though the keys seem tiny, using your fingers isn't a problem with this kind of design. The back

of the phone is a little squishy and you can feel the quality when you punch in keys which isn't so nice.

The sides of the body have a layer of rubber and this covers the controls available on the sides for the volume level, the camera and voice command buttons. This phone was meant to be for the every day Joe, so for ease, dedicated multimedia buttons are present on the body. The voice quality was average.

The interface is still fast and all the usual software bundle is still present. The battery is a 1150mAh one and we didn't face any instances of the phone running out of juice.

Some of the other options in this price range are the cheaper Nokia E63 and the sturdier E71. All in all, it's a good phone

for Rs. 15,990. It's currently available through Airtel.



### Contact

**Airtel / RIM**  
**Phone:** SMS 543210 (Airtel) for information  
**Price:** Rs. 15,990  
**Web-site:** www.blackberry.com

### Specifications

**Screen:** 2.46-inch, 320x240;  
**Camera:** 2.0 MP;  
**Connectivity:** WiFi b/g and Bluetooth;  
**Battery:** 1150mAh;  
**Dimensions:** 109 x 60 x 13.9 mm;  
**Weight:** 106 g

### RATINGS

Features .....7.5  
Performance .....7  
Build quality .....6.5  
Value for money .....7  
Overall .....7

# Western Digital My Book World II

### A cool looking external storage solution with features to boot

### Contact

**Western Digital Corporation**  
**Phone:** +91-93210 29204  
**Email:** amarjeet.singh@wdc.com  
**Web site:** wdc.com  
**Price:** Rs. 24,000

### Specifications

**Capacity:** 2 TB RAID 0/1,  
**Connectivity:** 10/100/1000 Mbps Ethernet, USB (expansion)  
**Dimensions:** 166 x 160 x 99 mm  
**Weight:** 2.5 kg

### RATINGS

Features .....8  
Performance .....7  
Build Quality .....6  
Value for Money .....6  
Overall .....7

**W**estern Digital's My Book World Edition II series is a networked external storage device that tries to make all your data centrally accessible and safe too. It sports a cool vanilla-colored casing that bears two 1TB WD hard disks packed side-by-side. The casing is probably not the toughest when it comes to external desktop drives. On the positive side, the hard disks are easily swappable. It connects to a router via the Ethernet port. Along with the Ethernet port, a USB port is provided for expansion, as well as making any USB-based memory device accessible to the network. While the network connectivity is a great thing to have, it is

somewhat disappointing that the drive can't be directly connected to a PC via USB.

The Dual hard-disks support RAID 0 (Mirroring) and RAID 1 (Stripe) that makes the two hard-drives behave like one large 2TB drive. It includes automatic backup software and a service that lets you access the drive from the internet. It can also be used as a media and iTunes server. All the settings can be tweaked using an easy-to-use web interface; although we wish it was not as laggy. With respect to performance, we can say that it is on par with other network drives. The performance is almost a third of an USB external drive.

For roughly Rs. 25,000,

the drive is somewhat expensive. It would make sense to buy this only if you are looking for a NAS solution that has some of the unique features mentioned above. .



# Thinner, lighter, better

## A look at the current generation of Netbooks

The era of netbooks dawned upon us two years ago when Asus gave the world the first Eee PC. Its physical attributes suggested that such devices would mostly be intended for kids; as their first cheap-but-real portable computers. But they appealed to an older audience as well; serving the purpose of a secondary machine that could be back-packed anywhere. The "flaws" of the first generation were

fixed in the second; screens became bigger, keyboards more comfortable to use, large-sized spinning hard-disks replaced measly-sized SSDs, Windows XP replaced Linux. The result is that the netbook has become acceptable to a wider variety of people. Those looking for a cheap portable PC to use their internet and productivity apps prefer to buy these over clunky cheap laptops.

There are three selling factors that tempt the audience;

the size, the price and battery life. Also, netbooks can now pretty much do the same basic tasks as your desktop computer or laptop (although somewhat slower). We are now looking at the third generation of netbooks; they are growing out of their 10-inch screen size, becoming slicker and slimmer than before, and performing even better; especially in the graphics department. NVIDIA's upcoming Ion platform is the testament to that. The Ion

From the somewhat-painful-to-use first generation models that many people disapproved of, netbooks have come a long way. Here, we take a look at the latest breed of netbooks available in the market today

**Rohan Naravane**

rohan.naravane@thinkdigit.com





## Lenovo IdeaPad S12

Lenovo's IdeaPad S12 with NVIDIA ION on hold pending Windows 7 debut

## Apple to release tablet

Apple is rumoured to have been working on a tablet PC concept which they plan to release in 2010

## Netbook test

platform is basically an Intel Atom processor paired with an NVIDIA chipset that has a powerful GeForce 9400 GPU onboard.

Every major manufacturer has jumped on the netbook bandwagon. Thus, in this article we bring you an extensive comparison of netbooks currently in the market, to help you pick the best one for your needs.

For the ones that did not make it - before starting with the test, we had contacted most of the manufacturers currently selling netbooks in India to send us a unit for review. A few manufacturers, namely Acer, HP, Dell and Lenovo apparently did not want their machines compared to those from other vendors and did not send us samples. These brands are therefore not a part of this test.

### Samsung NC-310 A curvy netbook for Generation Y.

- Hip-design, easy to carry around, bright screen, good keyboard.
- Build quality not up to the mark, status LEDs not visible when lid closed, web cam didn't function in our test model, expensive.

This is Samsung's attempt at catching the hip-crowd's attention. The NC-310 has a curvy build throughout which make it easy to hold and carry around. It also makes the netbook look different. The uni-coloured exterior and black interior also add to the coolness. Some people might find the colours a bit tacky, but

it's a personal choice; either you like it or you don't. The materials used to build it don't give it a feeling of solidity. Not to say that it's poorly built, but we wouldn't dare to manhandle this one too much. We also wished the neck hinge was a bit stronger.

At 1.23 kg, it can be easily carried around. The glossy screen is adequately bright. Below it is the pebble-style keyboard. This offers an isolated key design; that is slight spacing between each square-shaped key. For typists used to standard keyboards, these could take some time to get used to. But it is worth persevering, and once familiarised, they are quite easy to type on. The only sore point is that the Page Up, Page Down and arrow keys are a bit too closely packed. This makes it too easy to hit the wrong key. The touch-pad also offers good accuracy.

Unfortunately, all the status LEDs are on the inside of the body, next to the touch-pad. Thus you can't see them when the lid is closed. For example, with a closed lid you wouldn't know if your netbook is running or not. The web cam on our unit simply refused to work despite repeated attempts. We therefore weren't able to gauge its quality. Also, it wasn't able to compute a graphics score in the PCMark05 test, thus not giving us a final PCMark score.

The speaker strip is placed above the keyboard on the lower body. It puts out pleasingly clear and unamplified audio. Although the maximum volume isn't very high.

Its 4-cell battery survived for two-and-a-half hours in our battery drain test. Thus it should give 3 to 3.5 hours of up-time under normal usage. The battery life can be termed as quite decent. It also fared reasonably well in our Wi-Fi test. For almost Rs. 28,000,

the NC-310 is fairly expensive. It would be a pretty decent netbook to recommend, had the price been a few thousand rupees lower.

### Samsung NP-N120 A netbook that means business

- Bright screen, good Wi-fi performance, decent battery life.
- Pointy edges, the chrome sidings may not appeal to a few, slightly overpriced.

If the NC-310 was the netbook for the "young and the free", the N120 offers a rather cut-throat "meant for business" philosophy in terms of looks. It has a smooth black finish which is fortunately fingerprint proof. The edges are quite pointy and the chrome sidings may be a turn-off for some people. This netbook is quite thin. Even with a slightly bulging 6-cell battery, it weighs an acceptable 1.28 kilos. The build quality is a little better than the NC-310, and the same goes for the screen hinge.

On the inside we have a bright screen. The keyboard is of typical design (not like the NC-310's isolated keys). The keys are quite large and convenient to type on. However, like the NC-310 the direction keys and the Page up and down keys are small and squished together. This can be inconvenient from time to time. Unlike most netbooks that have speakers under their belly, here they are placed on either side of the screen. Thus they produce an unmuffled sound compared to most netbooks, which is adequately audible. Like the NC-310, it failed on the graphics part of the PCMark05 test, thus failing to give

us a final score.

In the battery test, it survived a good 4 hours and 30 minutes. It also shined in our Wi-Fi tests, where it logged in faster data transfer rates even over longer distances from the router. The web cam delivered an average quality with a decent frame rate. The Samsung N120 is priced at Rs. 25,000. That's slightly overpriced; as competitive models with very similar specifications are usually around Rs. 3,500 bucks cheaper. We wouldn't mind recommending this netbook if it were competitively priced

### Asus Eee PC 1008HA Slim wonder

- Ultra-thin and light, fabulous appeal, good keyboard, good battery life for a slim device, Wi-Fi 802.11n support.
- Screen brightness a bit low, non-removable battery, overpriced.

The 1008HA is part of Asus's "Seashell" line of cosmetically-enhanced netbooks, that have the same guts as the older versions. This Eee PC has an ultra-sleek design. It is just 18

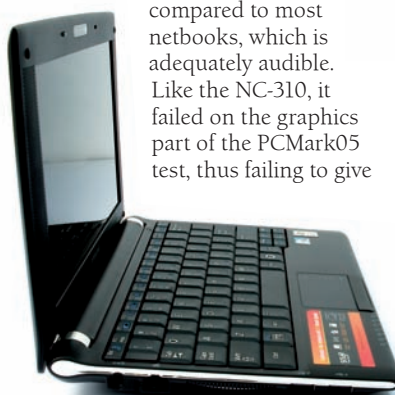


Asus Eee PC 1008HA

mm slim at its thinnest point. The beautifully-contoured body has a shell-like appearance and is covered in a piano black shade. The glossy body, as expected, is victim to fingerprints. At an ultra-light 1.1 kg, this is one of the lightest netbooks in this test. It can easily be slid away into the side-pocket of an overnighter bag. This is probably the first



Samsung NC-310



Samsung NP-N120

## Netbook or notebook?

According to the NPD Group, 60 per cent of consumers who purchased a netbook instead of a notebook did not know the difference between the two

## Nokia netbooks

Intel and Nokia have announced a partnership and are supposedly working on a netbook

netbook that comes with a non-removable lithium-polymer battery; just like the Macbook Air or the newer Macbook Pros. This could prove to be a limitation for those who like to carry spare batteries along with their portables. To achieve the streamlined design, Asus has neatly covered all the ports, thus protecting them from dust.

Opening this baby reveals the typical 10-inch screen with a web cam atop. We felt that the screen lacked the brightness that most of the other brands gave. We wouldn't really call this a deal-breaker though. The keyboard has large QWERTY keys that are good to type on. While trying to fit such large keys, the Up-Down, arrow and top-row function keys are shrunk considerably. We would have appreciated if at least the Up-Down keys were a little bigger. The touch-pad also receives the much-needed improvement over earlier models in terms of accuracy. Its dotted-texture also provides a better feel and grip while navigating. The real kill-joy for us was that the multi-touch scrolling option, available on many previous Eee PC models, has been replaced with the traditional side-scrolling mechanism.

On the inside, we find Intel's new Atom N280 processor that has a 60 MHz speed bump over the N270s fitted in most of the models. We concluded from our tests that the N280 boosts performance by a slight margin. The speed-up is not really noticeable when using typical apps. Also, all the Eee PCs, including this one, support the latest Wi-Fi 802.11n standard, which is much appreciated.

The built-in battery raked out a nearly three-and-a-half hour battery life - this is good for such a slim device. Thus, under normal usage, it should give you more than four hours of juice. The web cam belted out decent quality but not exactly with a smooth frame-

rate. The Rs. 27,000 price tag is the premium you'll have to pay for this sleek beauty. We think its somewhat overpriced, but if the price were to drop to Rs. 25k or less, that would make it a worthwhile buy.

### Asus Eee PC 1005HA Well-priced workhorse

- Good keyboard, Very good battery life, Wi-Fi 802.11n support, Well priced.
- Screen brightness a bit low.

On the heels of the slim 'n' sexy 1008HA is its slightly chubby sibling, the 1005HA. Its top shares the same shell-like look of its thinner cousin. It may not be very thin, but it is certainly sleeker and attractive compared to earlier iterations of the Eee PC. The 1005HA has a non-glossy base, unlike the fully-glossy body of the 1008HA. Other than that, both the models are the same internally.

Citing one of the few differences between the two, the



Asus Eee PC 1005HA

1005HA has a removable 6-cell battery that delivers a really good battery life; close to six hours in our stress-test. Thus, this model can survive close to an eight-hour working-day without a charge - if you're not going to do resource-intensive work. Amongst the bundle of apps that Asus packed with this model, we liked the Parental Control and the Font Resizer.

Other than the non-removable battery, the 1005HA also shares the cons

that we've mentioned in the 1008HA write-up above. The web cam performs similarly to the 1008HA model. The Wi-Fi performance in general on all Eee PC models was average using 802.11g mode. When testing with the 802.11n mode using a compatible router, we saw that the performance jump was about 15-20 per cent over 802.11g. The Eee PC 1005HA is priced quite reasonably at Rs. 21,500. This model will give you pretty much everything from the 1008HA model for Rs. 6500 less. So, if you want a decent netbook and can sacrifice the ultra-thin measurement of the 1008HA, this is the model you should consider.

### Zenith Premium Z-book

Cheap, in every sense of the term

- Good quality bright screen, sturdy build, cheap price.
- Average keyboard and touchpad usability, measly battery life.

The Zenith Z-book has a slightly small footprint and isn't really eye-candy compared to the others in our test. The device feels quite compact to hold and has quite a solid feel to it. The screen hinge offered more-than-adequate resistance

Opening this netbook reveals a very bright screen. We tried watching a few 720p hi-def videos on it and realised that the screen delivered quite admirably. The contrast-ratio, as seen by our tests, was also very high. But this is where praise for the Z-book ends. The keyboard is cramped compared to the well spaced ones on other models. The only good thing about it is that

it has media playback shortcuts on its function

keys. Even the touch-pad left-and-right click buttons are flimsy. The Z-book doesn't impress as such in the performance figures.

The battery died out after 1.5 hours.

It should give

approximately 2-2.5 hours of time under normal usage; this is quite a measly performance for a netbook. The web camera's output was quite grainy and dark and the frame-rate was also pretty average.

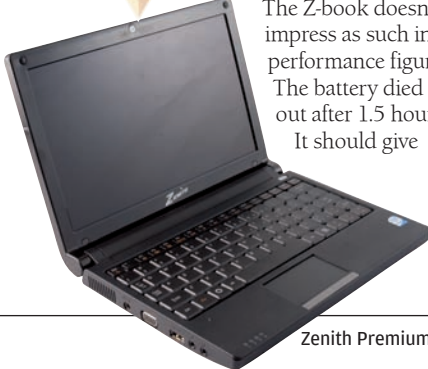
Other than the surprisingly-good screen and a decent build, there is nothing about the Z-book that we would write home about. It is by far the cheapest netbook we've seen at just Rs. 16,500. That's almost 20 per cent cheaper than the next cheapest netbook. For the price, you compromise a bit on the usability and performance but it's still a very usable piece of hardware.

### Asus Eee PC 1101HA Breaking the 10-inch barrier

- 11.1-inch screen size, excellent battery life, comparatively sleek, comfortable keyboard.
- Screen brightness a bit low, under-powered processor.

The first Eee PC to break the 10-inch screen barrier, the 1101HA has a slightly larger footprint in order to accommodate the 11.6-inch, 1366x768 pixel screen. It has kept its thickness under check, and the overall machine is quite portable. Sharing the Seashell-branded appearance of the family, the cool-looking white model that we received reminded us of the older Macbooks.

The "HD" resolution display has a 16:9 aspect ratio; great for watching movies without those black borders. A short-length 720p test video looked pretty good and ran quite smoothly. Although we felt that the screen brightness was not up to the mark. The display wasn't vibrant enough compared to some others in our test. But for typical work such as internet surfing and document editing, it's quite sufficient. The keyboard is well spaced and easy to type on. The touch-pad is similar to the 1005HA and 1008HA model. This model comes with a low-power Atom Z520 processor running at 1.33 GHz. From the synthetic tests, it is clear that the 1101HA's performance is even lower than the low-scoring



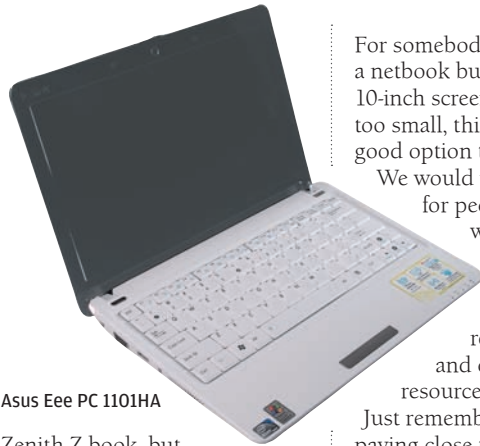
Zenith Premium Z-book

## Eee keyboard

The Eee keyboard is a PC-in-a-keyboard with an Atom processor, an SSD, 5-inch, 800 x 480 pixel touchscreen display, and wireless HDMI

## Jolicloud

Cloud-based OS in the making for netbooks



Asus Eee PC 1101HA

Zenith Z-book, but in real-life, we didn't notice a lag when running basic applications. But a two-hour long 720p Hi-def movie file lagged a lot during playback. Even though Asus advertises its "HD" display so profusely, we consider that this machine is not suitable for watching HD videos.

A low-powered processor is bound to have a positive impact on the battery life, and we measured an astounding figure of close to seven hours in our battery drain test. Thus, if used under light-load, it could very well last you more than eight hours. The web cam quality is again similar to previous Asus Eee PC models; i.e. decent. Quake 3 refused to run on this machine. Thus we couldn't measure its fps score.

At Rs. 26,000, the pricing for this model is quite appropriate.

For somebody who wants a netbook but feels that 10-inch screens are a bit too small, this model is a good option to consider.

We would recommend it for people who just want to use the internet, office suites, standard-res videos and other non-resource-heavy apps.

Just remember that you're paying close to Rs. 5,000 extra for 1.5 inches of extra screen size and one hour more battery life (compared to the 1005HA).

### Sony Vaio W Overpriced, but a good netbook

- Sleek and attractive design, high-resolution screen, comfortable keyboard, fast Wi-Fi 802.11n performance.
- Expensive, only 2 USB ports.

After its daring attempt with the Vaio P "Lifestyle PC", Sony is using the tried-and-tested netbook formula with this model. The Vaio W is a typical 10-inch netbook. It does maintain Sony's signature style-statement all over; with the Vaio logo atop its glossy covering and the wireless and power switch on the edges. The top fortunately does not attract fingerprints. Overall, look-and-



Sony Vaio W

feel wise, Sony does make a mark. This baby will be noticed wherever you carry it. The build quality is also quite decent. It's fairly light at 1.2 kg and thin enough to be carried around easily.

Opening the lid reveals a 10.1-inch screen bearing a higher-than-usual 1366x768 "HD" resolution. In our opinion, this resolution makes any text content appear a bit too small for convenience. We found it necessary to use a quick fix (a higher font dpi setting) to take care of that. However, we liked watching hi-res 720p videos on this machine. A pebble or segregated-style keyboard, typical of most Sony laptops we see nowadays, is fitted in this one. All keys are sized

well and are really soft to type on, once you get the hang of them. The touch-pad is also adequately large. The machine comes with the new

Atom N280 processor that offers a minor speed-up compared to the N270. In our battery drain test it touched almost two hours. Thus, one should get roughly three hours of normal usage; this is quite fair for a three-cell battery.

We were also impressed by its transfer speeds using the Wi-Fi 802.11n mode. The Vaio W's only two USB ports might be too few for people who attach a lot of peripherals to their PCs at a time.

Its web cam is accompanied by a nifty app which allows for face detection. This zooms into your face and tracks it even if you change your position. It can also do other cool effects such as face-blurring, eye-mask, warp, etc. Overall, the Sony Vaio W is a good netbook to consider, but it's going to cost you Rs. 30,000. This high-margin price difference between the Vaio W and the others is what we could perhaps call the "Sony tax". We would have gladly recommended this model, had the price been even a rupee below Rs. 25,000.

## HOW WE TESTED

- Most netbooks came with Windows XP Home Edition SP3 pre-installed. On those that came with Linux or no OS, XP was installed along with drivers for running the Windows-based benchmark tools.
- All pre-installed software (except for drivers) were un-installed. Automatic updates, remote desktop and system restore were turned off.
- The system was set to "Best appearance" mode. Screensavers were turned off, all power-saving settings were disabled and the screen was bumped to maximum brightness.
- The tests and assessments that we used:
  - Synthetic benchmarks including PCMark05,

3DMark05 and SiSoft Sandra 2008. Other than that, we included a battery of real-world tests to determine the performance of the various components and features of the netbooks.

- Build quality was assessed, included the type of materials used and the sturdiness of the screen hinge.
- Ergonomics, included the usability of the keyboard and touch-pad, also the accessibility of ports.
- The battery life test, using the looped-playback of our test video file with the volume turned to maximum
- The wireless test was performed by directly connecting a Wi-Fi Router to

our test PC. We then paired the netbooks to our router, thus enabling them to access the contents of our Test PC. A 100 MB test file was copied back-and-forth between the netbook and the test PC at two different distances. For the "Short Distance" the netbook was kept next to the router. With "Long Distance", the netbook was at a point outside the test PC's closed room, around 20 metres away.





- The display was tested for brightness and contrast ratio using a Spyder3Elite calibration tool.
- We used DivX Pro v.7.0 to encode our 100 MB test VOB format video file into the DivX format.

## MSI Wind

### Ultra-light netbook with few shortcomings

- Light-weight, bright screen with great contrast.
- No bluetooth, no OS pre-installed, only 80 GB hard disk, low battery life.

The MSI Wind U100 is the first netbook from the MSI stable. The white colour with a minimally-designed top makes it look neat. The build quality is quite decent. It may not be as ultra-thin as the Eee PC 1008HA, but at 1 kg, this is certainly the lightest netbook we have in this test. The keyboard is also quite easy to type on, except for one anomaly. The Fn and Control key on the left corner have interchanged places.

Brand	Zenith	Intex	MSI	Asus
Model	Z-book	N101W-C1100	Wind U100	Eee PC 1005HA
				
Price (Rupees)	Rs. 16,500	Rs. 19,400	Rs. 19,800	Rs. 21,490
Features (Out of 75)	53.09	42.94	46.88	54.85
Performance (Out of 25)	14.95	13.99	14.62	20.22
Grand Total (Out of 100)	68.04	56.92	61.50	75.07
<b>Features</b>				
<b>Component Specifications</b>				
Processor Model	Intel Atom N270	Intel Atom N270	Intel Atom N270	Intel Atom N280
Processor Speed (Ghz)	1.6	1.6	1.6	1.66
Memory (GB) / RAM Type / Memory Speed	1 / DDR2	1 / DDR2	1 / DDR2	1 / DDR2
Chipset	Intel 945GSE + ICH7M	Intel 945GSE + ICH7M	Intel 945GSE + ICH7M	Intel 945GSE + ICH7M
Graphics Solution	Intel GMA 950	Intel GMA 950	Intel GMA 950	Intel GMA 950
HDD Size (GB)	160GB	160GB	80GB	160GB
Bundled OS	Windows XP Home	No OS	Linux	Windows XP Home
Battery Capacity (mAh)	2200	3550	2200	5600
<b>Characteristics</b>				
Dimensions (WxDxH) (mm)	263 x 184 x 35	272 x 186 x 26	260 x 180 x 19 (~31.5)	262 x 178 x 25.9 (~36.5)
Screen Size (Inches)	10.2	10.1	10.1	10.1
Screen Resolution (Pixels)	1024 x 600	1024 x 576	1024 x 600	1024 x 600
Weight (kg)	~1.35	1.2	1	1.27
No of Ports (USB)	3	2	3	3
Wireless Connectivity				
Bluetooth	Y	N	N	Y
WiFi	b/g	b/g	b/g	b/g/n
Type of Memory Cards Supported	MMC/SD/MS/MS-Pro	MMC/SD/MS	MMC/SD(HC)/MS/MS-Pro	MMC/SD(HC)
<b>Performance</b>				
<b>Synthetic Scores</b>				
PC Mark 2005				
CPU Score	1457	1495	1503	1561
Memory Score	2240	2401	2415	2540
Graphics Score	N/A	N/A	515	616
HDD	4645	4647	4252	4661
Overall	N/A	N/A	1509	1688
SiSoft Sandra 2008 Lite				
CPU Arithmetic (Dhrystone/Whetstone)	4034 / 3338	4035 / 3338	4045 / 3237	4204 / 3474
CPU Multimedia (Integer/Floating)	29471 / 19910	29318 / 19928	29566 / 19950	30752 / 20858
HDD (Index/Random Access Time)	51 / 9	51 / 8	52 / 9	56 / 12
Memory bandwidth (Integer/Floating)	2926 / 2555	2884 / 2479	2991 / 2594	3069 / 2635
3D Mark 2005				
CPU Score	1552	1596	N/A	1691
Overall Score	229	240	N/A	261
<b>Real World Tests</b>				
Build Quality (Out of 10)	7.5	6	6.5	7
Ergonomics (Out of 10)	5	6	6.5	6.5
Audio Test Speakers (Out of 10)				
Volume	5.5	5.5	6.5	7
Clarity	5.5	5.5	5.5	6
WinRAR 3.8 (Compression / Decompression)	368	370	244	380
Quake 3	47.9	N/A	47.6	49.4
Webcam Quality	4	6.5	5.5	6
Screen Quality (Spyder3 Elite)				
Luminance	248.6	N/A	217	147.3
Contrast Ratio	358.5:1	N/A	558.1:1	70.4:1
Partition-to-partition Copy (1GB file) (secs)	57.7	63	55	37.9
100 MB File Conversion (VOB-to-DivX) (secs)	1025	1021	1024	1000
Battery Life (hrs:mins:sec)	1:26:05	2:19:50	1:27:26	5:47:28
Wi-Fi Test (100MB file over 802.11g) (secs)				
Short Distance				
Netbook-to-Test PC	65	38	45	37
Test PC-to-Netbook	44	37	39	32
Long Distance				
Netbook-to-Test PC	106	132	103	104
Test PC-to-Netbook	60	175	90	64

Samsung N120	Connoi Classmate tablet PC	Asus Eee PC 1101HA	Asus Eee PC 1008HA	Samsung NC-310	Sony Vaio W
					
Rs. 24,177	Rs. 24,500	Rs. 25,990	Rs. 26,990	Rs. 27,939	29,990
52.91	43.13	57.21	54.58	53.23	56.13
18.48	14.79	17.97	18.05	15.84	17.36
71.39	57.92	75.18	72.63	69.07	73.49
Intel Atom N270	Intel Atom N270	Intel Atom Z520	Intel Atom N280	Intel Atom N270	Intel Atom N280
1.6	1.6	1.33	1.66	1.6	1.66
1 / DDR2	1 / DDR2	1 / DDR2	1 / DDR2	1 / DDR2	1 / DDR2
Intel 945GSE + ICH7M	Intel 945GSE + ICH7M	Intel 945GSE + ICH7M	Intel 945GSE + ICH7M	Intel 945GSE + ICH7M	Intel 945GSE Express
Intel GMA 950	Intel GMA 950	Intel GMA 500	Intel GMA 950	Intel GMA 950	Intel GMA 950
160GB	60GB	160GB	160GB	160GB	160GB
Windows XP Home	Windows XP Home	Windows XP Home	Windows XP Home	Windows XP Home	Windows XP Home
5200	4800	5600	N/A	4000	2100
272.0 x 188.5 x 29.8	241 x 191 x 38.1	286 x 196 x 21.8 (~36.2)	262 x 178 x 18 (~25.7)	262 x 184.5 x 28	267 x 179 x 27 (~32.4)
10.1	8.9	11.6	10.1	10.1	10.1
1024 x 600	1024 x 600	1366 x 768	1024 x 600	1024 x 600	1366 x 768
1.28	1.35	1.38	1.1	1.23	1.19
3	2	3	2	3	2
Y	N	Y	Y	Y	Y
b/g	b/g/n	b/g/n	b/g/n	b/g	b/g/n
MMC/SD(HC)	MMC/SD	MMC/SD(HC)	MMC/SD(HC)	MMC/SD(HC)	MMC/SD(HC)/MS-Pro
1498	1460	1249	1560	1488	1552
2411	2317	1993	2528	2397	2462
N/A	N/A	276	586	N/A	536
4289	2704	4186	4780	4257	4179
N/A	N/A	1155	1683	N/A	1555
4028 / 3335	3923 / 3300	3345 / 2766	4195 / 3484	4016 / 3329	4204 / 3486
29348 / 19891	29107 / 19630	24475 / 16480	30674 / 20796	29468 / 19943	30622 / 20676
53 / 10	28 / 12	53 / 10	53 / 12	54 / 10	51 / 9
2905 / 2528	2803 / 2441	2434 / 2112	3073 / 2641	2969 / 2582	2738 / 2332
1645	1545	1129	1696	1627	1632
249	242	147	248	247	240
7	6.5	7	7	6	7
6.5	6.5	7	6.5	7	7.5
6	5.5	7	6	6	6.5
6.5	5.5	6.5	6.5	7	6
390	357	289	380	385	372
49.7	N/A	N/A	50.7	49.2	47.9
5	6	6	6	N/A	7
213.4	160.8	127.2	131.2	223.9	207
70.4:1	61.5:1	82.2:1	70.8:1	68.5:1	87.1:1
51.9	84	50	41.3	51.6	64
1014	1071	1229	976	1026	1004
4:31:51	2:37:52	6:51:00	3:21:30	2:30:54	1:58:36
38	28	40	42	38	38
33	28	34	33	34	33
55	157	162	156	81	125
48	256	82	87	86	74

## MSI Wind U210

MSI plans to launch the Wind U210 with a 1.6 GHz AMD Athlon Neo processor, a 12.1 inch HD display and ATI Mobility Radeon X1250 graphics

## Samsung N510

Samsung's N510 featuring NVIDIA's Ion chipset expected to be launched next month

In the days when 160 GB has become quite common for netbooks, the MSI Wind's 80 GB hard drive space feels rather cramped. Also, the model that we received came with SuSe Linux Enterprise Desktop 10 pre-installed instead of Windows XP. Lastly, the battery life did not fare so well, clocking in at 1.5 hours. At Rs. 20,000, the MSI Wind's pricing is fair. But other than the great screen, it does not have anything special that would inspire us to recommend it. At just Rs. 1,500 more, you can get the Eee PC 1005HA that trumps this model on many counts.

### Intex N101W-C1100 Tacky-designed, nothing extraordinary

- Decent web cam and battery life.
- Tacky design, no OS preinstalled.

Intex has taken a different approach in terms of design with its N101W netbook. It is designed to resemble a book; suggesting that it is targeted at the youth. Also, due to its design, the screen cannot be tilted beyond roughly 120 degrees. The build quality is quite acceptable, but this



Intex N101W-C1100

is not very thin. On the inside, we have a 1024x576 pixel display, just four vertical pixels shy of the typical 1024x600 resolution. The keyboard is good in terms of typing comfort and the direction keys are a wee bit smaller than usual. The touch-pad sensitivity is about average, although the odd button placement might not be convenient for some.

Many of us are aware that installing Windows XP (especially using a USB flash drive) is a lengthy and difficult procedure. The least Intex could do is sell the N101W with a Linux OS. After installing XP ourselves, we ran it through our battery of tests. Of them, we couldn't get *Quake3* to run on this one. The same was the case with our test to judge screen brightness and contrast ratio. The battery lasted an acceptable two hours and twenty minutes. Thus we should expect around three hours of normal play-time with this model. The web cam delivered a clear image with a decent frame-rate.

At Rs. 19,000, the price seems to be quite fair. But its design philosophy and average usability does not help us recommend this model.

### Conclusion

After our exhaustive testing, we come to the conclusion that the Eee PC 1005HA bags the prize as the best performer. It has the right mix of components coupled with an elegant design and a perfect price; given its functionality. Coming in close at second place is the other ASUS Eee PC 1101HA. The Sony Vaio W follows. Other than the ultra-high price tag, we found nothing to complain about this

## CONNOI TABLET PC

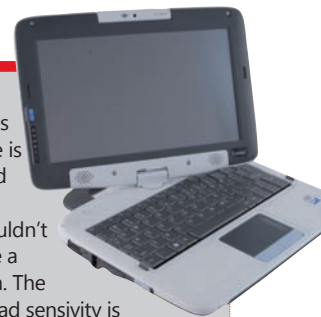
### A good companion for kids

The Connoi Tablet PC is based on the Intel Classmate PC concept. As we will see further in this review, this model is specifically targeted at school-going kids. For one, this netbook looks a bit kiddish, but its plastic body is built decently. The manufacturers claim that it is sturdy enough to survive drops and water spills. It has a (removable) handle for carrying it around like a mini-briefcase. At 1.35 kg, it's not overly heavy and shouldn't add substantial weight to a kid's already-heavy school-enabled model amongst all those in this test. The screen has a 180-degree tilting mechanism that converts this typical netbook into a stylus-operated tablet. You can even use it in vertical mode like an e-book reader.

The screen is slightly small at 8.9 inches, but bears a standard 1024x600 pixel resolution. Although the screen accepts stylus input fairly well, the underlying software (and Windows XP) is not finger-optimised. Thus, kids will need to whip out the stylus or try to use their fingernails to operate this device. The keyboard under the screen is somewhat cramped for adults with large fingers. But,

since this machine is intended for kids, this shouldn't really be a problem. The touch-pad sensitivity is also good. Spec-wise there are a few differences from the rest of the herd. For one, this netbook has a 1.8-inch 60 GB hard disk; which might prove to be insufficient in today's world.

Performance-wise, it worked at a decent pace. The performance bottle-neck in this machine proved to be its slower 1.8-inch hard drive. We also hoped for a little more than 2.5 hours from its 6-cell battery. In terms of software, it comes with a number of usable apps. The best had to be ArtRage2, a touch-friendly version of a Paint app. Even the handwriting recognition tool is quite accurate, after a brief training session. At Rs. 24,500, it is priced appropriately considering that it is a netbook-cum-tablet PC. This makes it quite a sweet deal and would be a good choice as a first PC for kids. It will help them jump onto the electronic revolution at an early age.



model. If Sony slashes the price by at least Rs. 5,000 rupees, we'll be glad to recommend it.

Going by sheer numbers, the Zenith Premium Z-book takes the Best Buy Award thanks to its ultra-low Rs. 16,500 price tag. Although it has the same internals as most of the models out there, it somewhat lacks in terms of usability. We feel you should spend a few thousand rupees more to get the Eee PC 1005HA.

Another model we'd like to

highlight is the Connoi Classmate PC. This netbook is designed with the idea that computers are going to be a big part of children's education, and not just another subject in the curriculum. Its touch-screen abilities bring out many unique features that children can use. Also, this is a real PC, with a familiar operating system that provides a plethora of usability options. If you are willing to invest Rs. 25,000, this could very well be a great gift for your child. **[d]**

### Contact Sheet

Brand	Contact	Phone	Email address	Web site
Connoi	Connoisseur Electronics Private limited	+91-80-4115 2203	harish@connoisseur.com	www.connoisseur.com
MSI	MSI India	+91-11-4175 8808	marketing@msi-in.com	http://in.msi.com
Intex	Intex Technologies (India) Ltd	1-800-116 789	info@intextechnologies.com	www.intextechnologies.com
Zenith	Zenith Computers Limited	1-800-222 004	info@zenith-india.com	www.zenithpc.com
ASUS	ASUS Technology Pvt. Ltd.	1-800-209 0365	media_india@asus.com	www.asus.in
Sony	Sony India	1-800-111 188	sonyindia.care@ap.sony.com	www.sony.co.in
Samsung	Samsung India	+91-11-4151 1234	ravi.gulati@samsung.com	samsung.co.in



With Core i5 release pending EVGA, an NVIDIA only vendor surprises by announcing their P55 platform

## Intel Clarkdale

Intel's 32-nm plans become a little clearer as it announces three sets of parts: Core i9, Core i5 and Core i3

## CPU test

### Michael Browne

michael.browne@thinkdigit.com

A couple of years ago, choosing a CPU was a simple as buying a loaf of bread. Those that wanted performance bought a Core 2 Duo, while the value segment bought an Athlon 64. The only decision that needed to be made was the extent of expenditure. In fact, up to a year ago, there was very little competition between Intel and AMD, and before you scoff at our dementia for conjuring such a statement hear us out. Intel ruled the high-end and upper-mid-range of the market. If anyone wanted to spend upward of Rs. 8,000 on a processor they would almost certainly

(fanboys aside) buy an Intel. Those with a lower budget would get an AMD. Intel has been on an undoubted roll since the Core architecture and its fabrication plants have been shipping out newer, faster revisions quicker than we can buy them. AMD's Phenom CPUs bombed badly, and the strong-on-paper architecture scored no benchmark love.

Fast-forward to around nine months back and the introduction of the Phenom II. We've seen AMD's CPUs get faster; in fact their quickest CPUs are as quick as the fastest Core 2 Quads around – a fact easily verified by our tests. So the mid-range segment has become competitive again. And you, our readers and adopters of such technology, have finally

got the painful pleasure of a choice.

Our CPU test coincides with an important launch. Intel's Core i5 CPUs – the mid-range derivative of the Core i7 (Nehalem) architecture are soon to be out. Unfortunately, Intel slated this launch for the first week of September meaning these CPUs would be under embargo till after this issue of Digit hits stands. Despite some motherboard vendors such as ASUS, Gigabyte and MSI happily shipping us Intel P55 chipset-based motherboards, we couldn't test these CPUs thanks to these awkward dates. Till October then... meanwhile we have a very wide range of processors on show – from single cores to hyper-threading quad cores. From a humble

Rs. 2,160 to a stupendous Rs. 56,000, our test candidates strut their stuff.

### Processors up to Rs. 5,000 - Basic(ally) Sensible

Let's face it – you pay for what you get. Another fact – Rs. 5,000 will buy you a lot of processing power, much more than you could have bought a year ago. Our CPU test comes at a time when both Intel and AMD have recently announced price cuts – in fact, the price cuts were announced just as we finished testing. As things stand today processor prices are pretty much rock bottom, at least in this category. When spending not more than Rs. 5,000 you should expect something that can get you through all everyday

# New Horizons

We've seen AMD's CPUs get faster; in fact their quickest CPUs are as quick as the fastest Core 2 Quads around

Imaging: Shrikishna Patkar  
Photography: Iiten Gandhi



Corsair unveiled a 128 GB version of their ultra fast Voyager GT flash drives

## Intel Pinetrail

The next generation Atom successor will have both memory controller and graphics core on-die

## HOW WE TESTED

The CPUs were divided into three categories:

1. Up to Rs. 5,000
2. Rs. 5,001 to Rs. 12,500
3. Rs. 12,501 and above

The first category represents entry-level processors. The second category also represents value, especially the lower rungs. The top end of this middle category has good value for money as most of these CPUs are pretty powerful and should suffice for even power users. The top category consists of the fastest processors and

represents both buyers who want sterling performance for a solid price and those who demand the best, regardless of cost.

Since CPU features or specifications are of very little consequence and performance and price are the only two things that matter, we have ignored features and gave a full weighting (i.e. 100) to performance. Therefore the performance score is the same as the grand total score in our tables.

We used Windows Vista Ultimate 32-bit with SP1. We carefully chose the best, most stable and high-end motherboards to ensure no CPU was bottlenecked. ASUS' GeForce GTX 285 was the graphics card of choice. We used Corsair Dominator memory all round and the timings were carefully kept constant throughout the test.

When testing CPUs we ensure they run at their default stated clock speeds at all times. For this we disable any sort of

thermal throttling down, halt states, temperature monitoring and variable multipliers. We thereby eliminate any chances of performance being affected due to the time lag between speeding up and down, irrespective of either company's claim to the effectiveness of their variable clocking mechanisms. For the Core i7 CPUs we kept hyper-threading enabled, although we did disable it on a subsequent run of the Intel Core i7 975 EE just to see how this affected the scores.

### Test Configurations used:

	Intel Core 2 Duo	Intel Core i7	AMD AM3	AMD AM2
Motherboard	ASUS P5Q3 Deluxe	ASUS P6T Deluxe v2	Gigabyte 790FX-UD5	ASUS 780G
RAM	2 x 2 GB DDR3 @ 1333 MHz (8-8-8-20)	3 x 1 GB DDR3 @ 1333 MHz (8-8-8-20)	2 x 2 GB DDR3 @ 1333 MHz (8-8-8-20)	2 x 2 GB DDR2 @ 1066 MHz (5-5-5-15)
Graphics Card	ASUS GeForce GTX 285	ASUS GeForce GTX 285	ASUS GeForce GTX 285	ASUS GeForce GTX 285
Hard Drive	Seagate 7200.11 500 GB	Seagate 7200.11 500 GB	Seagate 7200.11 500 GB	Seagate 7200.11 500 GB

### A brief description of the benchmarks used:

Synthetic	Description	Real World	Description
3D Mark Vantage	We only ran the CPU tests. The CPUs FP unit is stressed with a number of physics intensive scenes. Since Vantage scales with multi-core CPUs as well as clock speed it is sensitive to minute changes - a good benchmark	Maya 2008	Multi-core 3D rendering benchmark. Can be set to utilise a single or more cores. Doesn't scale beyond 8 logical cores. We set it to render a scene at 1024 x 1024 pixels, at production quality. Multi-core and single core performance were tested
Wprime 2.0	We recorded the time taken to calculate the square roots of the first 32-million integers. Pure FP stress benchmark and one used commonly in number crunching comparative tests. Scales excellently with multiple cores	WinRAR 3.9 Beta	Test compression/decompression capability
CineBench R10	Developed by Maxon, a 3D scene is used to render a photo-realistic image. Stresses CPU capabilities for features including reflection, ambient occlusion, area lighting and procedural shaders. Uses up to 16 cores. Tests SSE capabilities and has support for SSE 4.2	DivX 7 encoding	Encoding .VOB to DivX. Supports SSE 4.1
Valve Multicore CPU benchmark	Uses the half life 2 engine and simulates particle physics. A good benchmark for judging physics and rendering capabilities of a CPU	Handbrake	Encoding a .VOB file to x264. Supports SSE 4 and supports up to 8 processor cores. Has better multicore support than DivX 7 but is slower
POV Ray 3.62	Raytracing benchmark supports most features like multiple and different light sources, radiosity, surface patterns. Doesn't support SMP and multiple cores at the moment, therefore is a good test of per core performance and therefore CPU architectural performance	Company Of Heroes Tales Of Valor	An RTS game that utilises multiple threads, therefore suitable for multi-core CPUs
ScienceMark 2.0	Membench tests overall processor to memory bandwidth and also the L1 and L2 cache speed and latency. Cryptography uses the AES encryption algorithm to assess the performance of FP math co-processor	Crysis	CPU benchmark was run. This benchmark has heavy emphasis on physics and a lot of destructive environments. A good measure of a processors ability at running modern games. We ran it at 1024 x 768 pixels and low quality to prevent our graphics solution from bottlenecking scores
		Doom 3	The in-game timedemo was run three times and an average of the 2nd and 3rd score were taken. The Doom 3 engine is old but because of its ultra sensitivity to any change in physical hardware is a good indicator of performance. It scales with clock speed primarily, but also scales with the number of cores





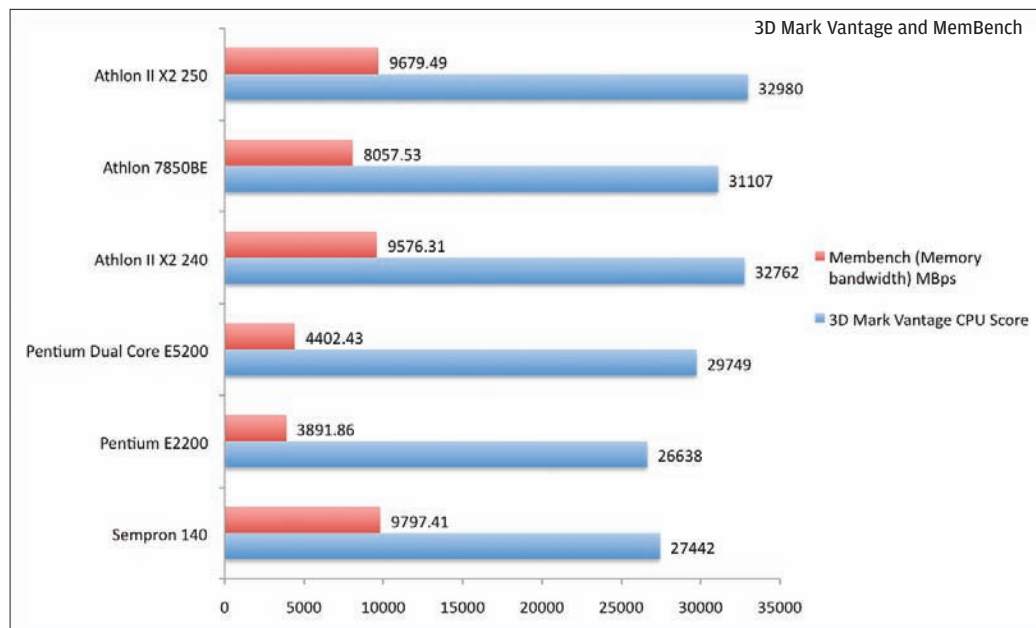
OCZ has launched their new "Z" series of power supplies which are 80 plus Gold certified - most efficient rating possible

## New chip foundry

GlobalFoundries, the chip fabrication spin-off from AMD, gears up as it gets its first customer for 22nm; and it's not AMD, but ST Micro

tasks with ease – surfing, watching movies (including HD playback), basic gaming, office work. Single core processors are largely Jurassic and you shouldn't be buying one – more applications are slowly getting multithreaded and in order to run them optimally you need a multi-core CPU. CPUs in this price bracket are not meant for high-end gamers or rendering workstations. There are very few specifications we can recommend and we also suggest you stay away from the typical vendor jargon such as "you need at least a 2.0 GHz dual core" – processor clock speeds and the number of cores alone are not always a yardstick of their generic performance. Some CPUs are naturally better suited to some applications just as surely as most application developers design their software with optimisations for a particular CPU vendor.

AMD's Sempron 140 was the sole single core in the entire comparison and it's also the cheapest processor, at

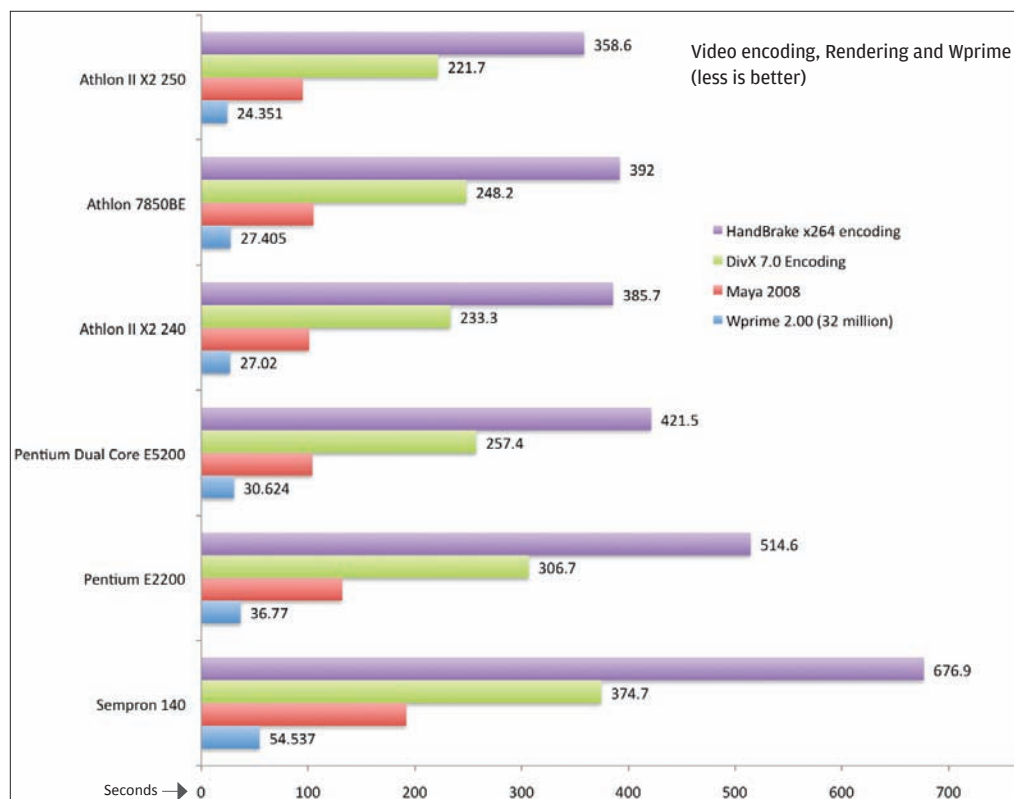


Rs. 2,160. Shockingly, it bares its teeth quite successfully against Intel's two costlier dual core offerings – no doubt on account of its higher core clock and the higher FSB speed. Remember that Intel's basic dual cores run off an 800 MHz bus and these CPUs also miss

out on an integrated memory controller (IMC hereon). This is a double whammy for AMD, since we know that for any dual core *sans* IMC to perform, the FSB speed should be suitably high to prevent data bottlenecking in the FSB. Evidently, this is what

happens. Shame on Intel for not offering a faster FSB speed such as is present on its Core 2 Duo processors, but AMD isn't going to cry about this.

Just take a look at the ScienceMark 2.0 memory bandwidth scores – AMD gets an advantage owing to the minimal latency between the CPU and IMC which are on the same die. For Intel the memory controller resides on the Northbridge chip connected via its super slow 800 MHz FSB, which is why its scores dip, despite using fast DDR3 RAM. In fact, all four AMD processors are faster on the whole than their Intel counterparts. Three of the costlier AMD CPUs are faster at games – one application considered during the last four years to be Intel's forte. AMD's newer Athlon II processors are codenamed *Regor*, and are based on a 45-nm fabrication process and have relatively large caches of 256 kB (L1) and 2 MB (L2). These processors are the fastest in terms of clock speed in this group, the Athlon II X2 240 and X2 250 being 2.8 GHz and 3.0 GHz. The fact that the single core Sempron 140 can get a performance edge over Intel's dual-core offerings just demonstrates how important





The new 34nm MLC flash based SSD drives from Intel get a firmware upgrade to resolve data corruption issues face by some customers

**Electronics gets Bio shot!**

Lawrence Livermore National Laboratory scientists are claiming that Bionanoelectronic devices can speed up electronics and even processing

the memory and bus subsystem is to a processor's performance. It also underlines the importance of avoiding a bottleneck. AMD's Athlon 7850BE was the only "black edition" chip in this group, meaning its multiplier is 'upward unlocked'. Most processors have multipliers that can scale down, but never scale above their



AMD Athlon X2 250

maximum value. These black edition CPUs are intended for overclockers. Our Best Buy award goes to the Athlon II X2 250 from AMD, a solid performer that makes an excellent buy at a price point of Rs. 4,150.

**Processors between Rs. 5,001 and Rs. 12,500 - Shooting from the hip**

For many people, this wide range represents the sweet spot - this is where processors start getting interesting and the term *future proofing* starts to emerge. Entry-level quad and tri-cores make their presence felt and while some still feel anything more than two cores is overkill, not to mention underutilised, these processors are most certainly the future. In fact, both companies have announced their intentions to make six-core processors available by next year. Parallelism is the shape of things to come, graphics cards have already gone massively parallel and processors aren't lagging far behind. The CPUs

in this category are certainly a diverse bunch and a simple price to price comparison won't bring out every aspect of their abilities. Some are better suited to a particular set of tasks while others excel at others.

Faster clock speeds used to be the order of the day for gamers, but tread with caution here, because the newer crop of games are slowly becoming multi-threaded. However, that's not to say clock speed is not important. In fact, from the many games we tried and discarded we found that *S.T.A.L.K.E.R. Clear Sky*, *Crysis Warhead* and *Far Cry 2* all respond with greater fervour to clock speeds than number of cores. In general, RTS and RPG games, because of their complex AI and AI pathfinding routines, tend to offer improved performance

for each extra core added. Most racing simulations and fps games tend to favour clock speeds - although this is not a hard and fast rule and exceptions exist.

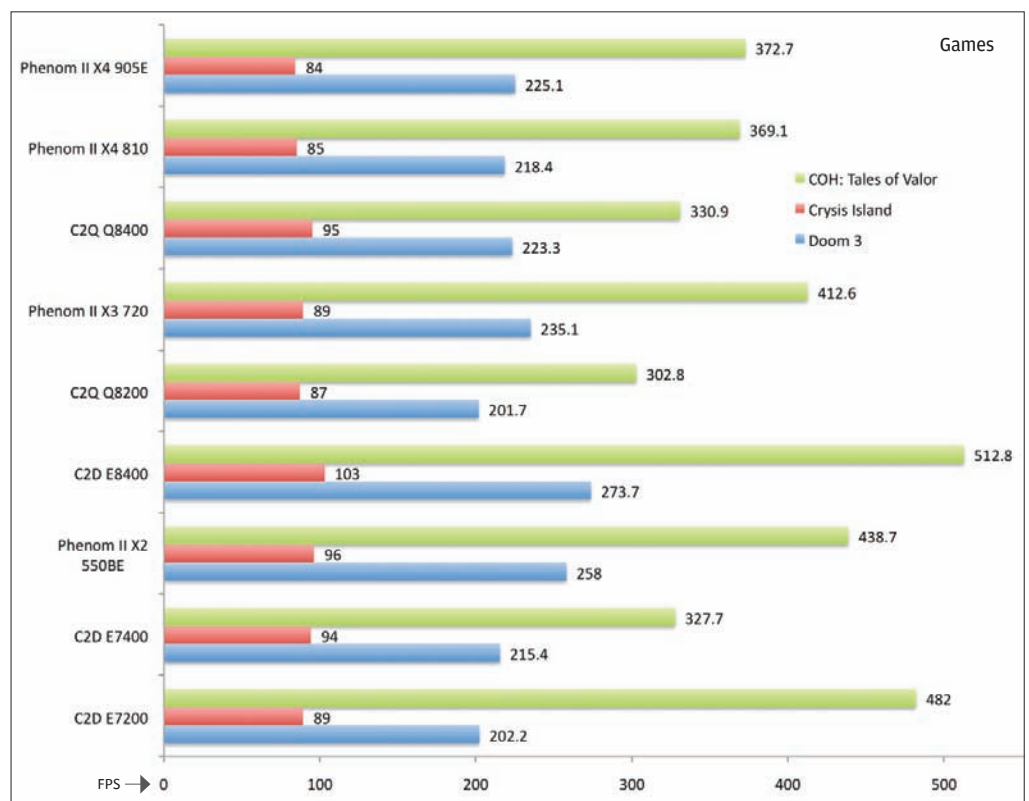
After AMD's dominance in the previous category, this category was a little more even between processors from both brands. The cheapest CPUs are Intel's Core 2 Duo E7200 and E7400. It's also interesting to find the Core 2 Duo E8400 and the quad-core duo (Intel Q8200 and Q8400) very close to each other in terms of price. Although the former is a high clocked dual core at 3 GHz, the latter offers two extra cores at lower clock speeds, i.e. 2.33 GHz and 2.66 GHz, respectively. These processors are all priced within Rs. 200 of each other. AMD squeezes in one dual core, one tri-core and two quad cores. Of special interest is the Phenom II X4

905E, the suffix *E* denotes an energy efficient design and this CPU's TDP (Thermal Design Power) is only 65 watts, compared to the higher clocked Phenom II 810 with a TDP of 95 watts. Note that all these AMD CPUs bear the Phenom 2 moniker, meaning they have L3 caches, whereas any CPU with the Athlon nomenclature doesn't have an L3 cache.

*Doom 3* shows its age in terms of multi-core support - the highest AMD



Intel Core 2 Quad Q8400





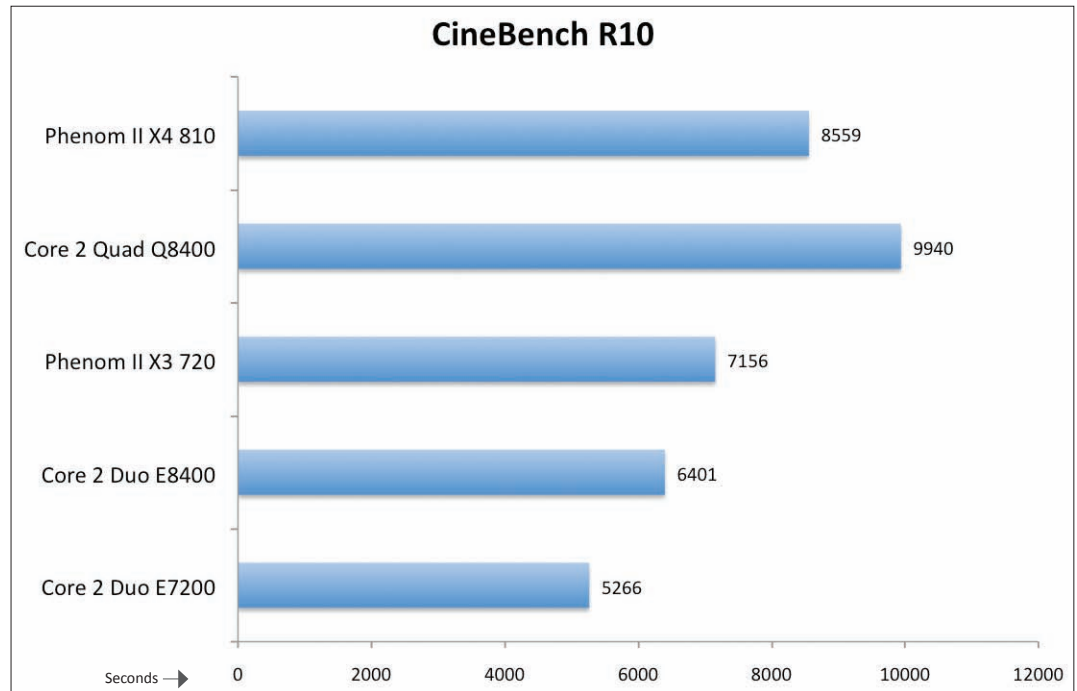
## Cheaper Graphene?

Three professors from Northwestern's McCormick School of Engineering and Applied Science have created a cheaper technique of manufacturing graphene, which is touted as a possible silicon replacement

## IE8 a tortoise?

FutureMark Corp. said IE8 was the slowest browser around and even Safari from Apple was much faster

Phenom II X2 550BE and the Intel E8400 best this test. If anything, the E8400 is the faster of the two despite having a 100 MHz clock disadvantage. *Tales of Valor* also favours the fast E8400. However, the video encoding benchmarks, WinRAR 3.9 and Maya 2008, all of which are heavily multithreaded, favour the quad-core processors. In fact, in the HandBrake x264 encoding test the Q8400 was nearly twice as fast as the E8400. Encoding applications are SSE-based and generally make better use of multiple cores. Intel's quad cores are cheaper than AMD's, a fact that we immediately pounced on. The Q8400 was our Best Buy winner as a result of this and it's superb all round performance. If you



AMD Athlon X2 550

range of Rs. 6,500, you can't go wrong with the Phenom II X2 550BE – at Rs. 6,150, it's great value. As excellent as the Phenom II X4 810 and X4 905E CPUs are, we cannot recommend them on account of the Core 2 Quad Q8400 – if you are considering spending anything like Rs. 9,000 for a CPU, you'd have to be daft to look elsewhere.

### Processors above Rs. 12,500 – Taking no prisoners

Shopping for a processor in excess of Rs. 12,500 is a fun experience. Well, shopping with deep pockets anywhere is fun isn't it? When spending this much, be prepared to pair your CPU with a feature rich, high-end chipset-based motherboard. Also be prepared to invest in at least 4 GB of RAM, otherwise you'll end up with a hungry, sporadically fed beast. Some of the processors in this category are extremely expensive, and to be fair the reason warrants mention. We're talking about Intel's

Extreme series of processors. Traditionally, Intel has always charged a pretty premium for anything it deems as *Extreme Edition*. These processors are little more than the highest clocked parts with upward unlocked multipliers. Intel also claims that these CPUs are made of the best binned components and the highest yield silicon – which is why they are better suited to stand the rigours of over-clocking. To some benchmark gurus, these CPUs are a godsend allowing them to break all sorts of world records. To the more mundane person spending upward of Rs. 50,000 on a CPU, then over-clocking it, and thereby risking its functionality, may seem plumb crazy – however, that is the way it stands.

It's interesting to note that AMD has been hard at work ramping up clock speeds for its CPUs. The AMD Phenom II 965BE clocks at a mighty 3.4 GHz, and

AMD has already announced the Phenom II 975BE rated at 3.6 GHz – whoever said the gigahertz wars have ended must have been on weed – the fact is that the battleground just changed. Another worthwhile point is the temperature of these processors. Throughout this test we monitored CPU temperatures but found little concern – all of today's CPUs behave themselves and do not overheat if installed properly. However, AMD's new Phenom II 965BE does get a little



Intel Core i7 920

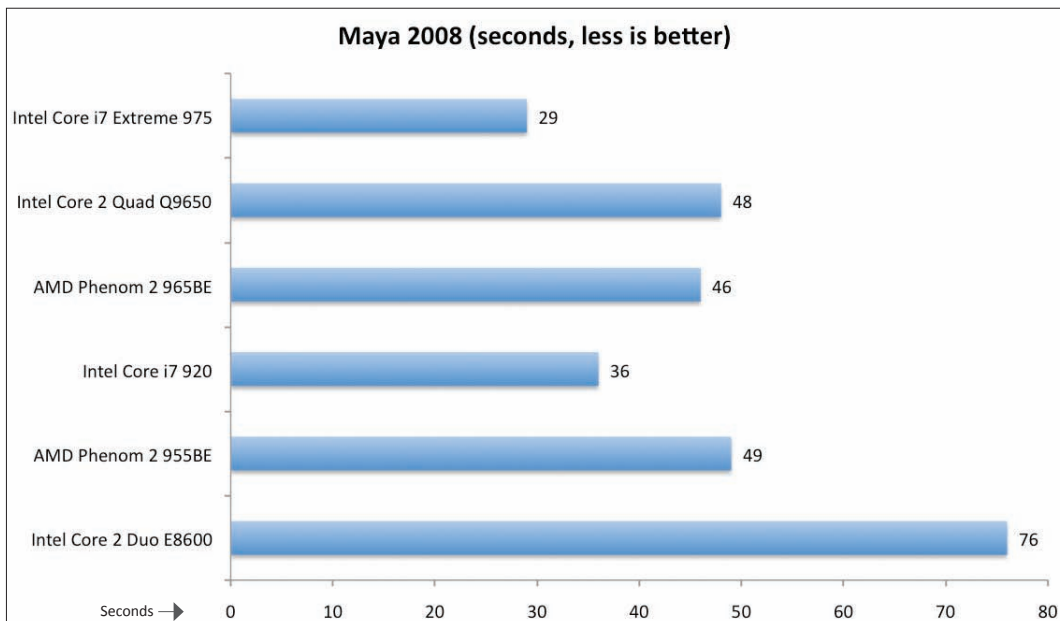
are interested in building a powerful PC, this processor is very suitable. If all you are interested in doing is gaming then we recommend the E8400. However, at just a couple of hundred rupees less, it doesn't offer much more. We think all the CPUs in this comparison are more than suitable for reasonably powerful all-purpose computers. For a rendering workstation, give preference to quad core processors. If you have a lower budget in the

**CPU Test**

Up To Rs. 5,000

Brand	AMD	Intel	Intel	AMD	AMD	AMD
Model	Sempron 140	Pentium E2200	Pentium Dual Core E5200	Athlon II X2 240	Athlon 7850BE	Athlon II X2 250
Price (Rs) *	2160	3500	3550	3570	4110	4150
Performance (Out of 100)	37.71	28.55	34.77	40.86	38.50	42.92
<b>Features</b>						
Socket Interface	AM3/AM2+	LGA 775	LGA 775	AM3/AM2+	AM2	AM3/AM2+
CPU Codename	Sargas	Allendale	Wolfdale	Regor	Kuma	Regor
Core Frequency	2700 MHz	2200 MHz	2500 MHz	2800 MHz	2800 MHz	3000 MHz
Number Of Cores / Hyperthreaded (Y/N)	1 / N	2 / N	2 / N	2 / N	2 / N	2 / N
External Bus Frequency	2000	800	800 MHz	2000	2000	2000
Fabrication Process (in Nanometers)	45nm	65 nm	45nm	45nm	65nm	45nm
L1 Cache / L2 Cache	128 KB / 1 MB	128 KB / 1 MB	128 KB / 2 MB	256 KB / 2 MB	256 KB / 2 MB	256 KB / 2 MB
L3 Cache (if any)	-	-	-	-	-	-
<b>Performance</b>						
<b>Synthetic benchmarks</b>						
3D Mark Vantage (CPU Score)	27442	26638	29749	32762	31107	32980
Wprime 2.00 (32 million, in sec) #	54.537	36.77	30.624	27.02	27.405	24.351
ScienceMark 2.0 Cryptography (AES, Rijndael) in sec #	9.707	14.079	12.279	9.147	9.845	8.561
ScienceMark 2.0 Membench (Memory bandwidth) MBps	9797.41	3891.86	4402.43	9576.31	8057.53	9679.49
Maxxon CineBench R10 rendering (all cores / one core)	NA / 2426	3971 / 2093	5118 / 2665	4909 / 2513	4878 / 2442	5237 / 2687
PovRay 3.62 (Chess2 scene) (in sec) #	182	256	218	178	181	165
Valve Multicore CPU Particle benchmark	23	37	49	43	42	47
<b>Real World Applications</b>						
Maya 2008 Rendering all cores / one core (in sec) #	NA / 192	132 / 239	104 / 191	101 / 183	105 / 190	95 / 171
WinRAR 3.9 (all cores / single core)	673 / 666	843 / 466	978 / 530	1223 / 675	1094 / 597	1257 / 694
DivX 7.0 Encoding (sec) #	374.7	306.7	257.4	233.3	248.2	221.7
HandBrake x264 encoding (sec) #	676.9	514.6	421.5	385.7	392	358.6
Doom 3 (FPS)	125.9	122.3	165.3	207.8	190.4	222.6
Crysis (CPU benchmark, FPS)	74	67	79	87	82	88
COH: Tales of Valor (FPS)	194.8	186.4	240.3	295.4	288.2	311.6

\* Exclusive of all taxes # for these scores lower is better



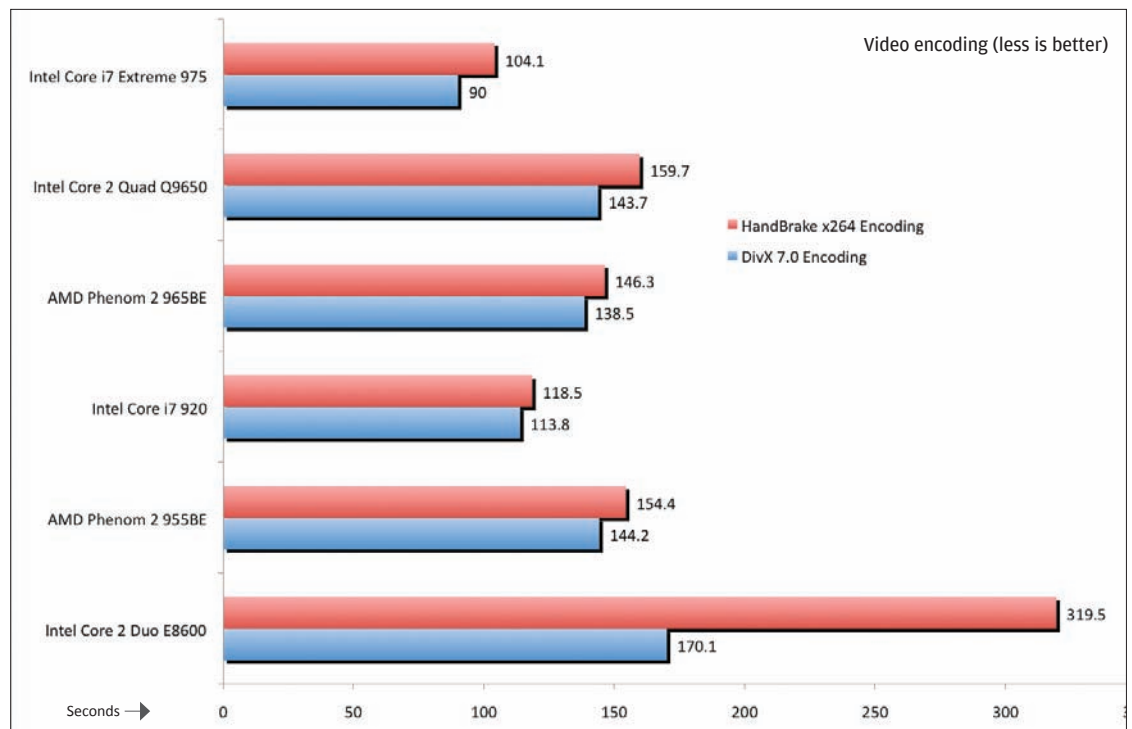
hotter than the rest – we reckon AMD could squeeze another 200 MHz out of the Deneb (codename for Phenom II) architecture but that’s about it.

Our first surprise came in the Wprime 2.00 test where both the Phenom II 955BE and 965BE are faster than the mighty Q9650 and QX9650 chips – both potent 3.0 GHz, quad core parts; evidently AMD’s higher clock speed coupled with the increase in its L3 cache from 2 MB on the first Phenom processors to 6 MB on these CPUs is enough to zoom ahead. Thanks to their slower, latency plagued, FSB, the Core 2 CPUs also have lower memory bandwidth scores in ScienceMark 2.0. The Phenom II 965BE is also faster than all Core 2 CPUs

Rs. 5,001 to Rs. 12,500

Intel	Intel	AMD	Intel	Intel	AMD	Intel	AMD	AMD
Core 2 Duo E7200	Core 2 Duo E7400	Phenom II X2 550BE	Core 2 Duo E8400	Core 2 Quad Q8200	Phenom II X3 720	Core 2 Quad Q8400	Phenom II X4 810	Phenom II X4 905E
5500	5750	6150	8600	8650	8700	8750	9300	10900
40.14	41.31	46.78	48.06	47.34	49.26	52.41	51.45	50.94
LGA 775	LGA 775	AM3/AM2+	LGA 775	LGA 775	AM3/AM2+	LGA 775	AM3/AM2+	AM3/AM2+
Wolfdale	Wolfdale	Callisto	Wolfdale	Yorkfield	Deneb	Yorkfield	Deneb	Deneb
2533 MHz	2800 MHz	3100 MHz	3000 MHz	2333 MHz	2800 MHz	2667 MHz	2600 MHz	2500 MHz
2 / N	2 / N	2 / N	2 / N	4 / N	3 / N	4 / N	4 / N	4 / N
1066 MHz	1066 MHz	2000	1333 MHz	1333 MHz	2000	1333 MHz	2000 MHz	2000 MHz
45 nm	45 nm	45nm	45 nm	45 nm	45nm	45 nm	45nm	45nm
128 KB / 3 MB	128 KB / 3 MB	256 KB / 1 MB	128 KB / 6 MB	256 KB / 4 MB	384 KB / 1536 KB	256 KB / 4 MB	512 KB / 2 MB	256 KB / 2 MB
-	-	6 MB	-	-	6 MB	-	4 MB	6 MB
32529	32971	34163	35662	35725	35528	37210	36895	36751
30.232	27.413	23.231	25.491	16.474	17.472	14.292	14.291	14.882
12.092	11.231	8.304	10.202	13.05	9.495	11.457	9.818	10.053
5385.75	5701.46	9560.51	6706.08	6989.26	9342.17	7122.27	9197.77	9114.53
5266 / 2772	5840 / 3066	5550 / 2845	6401 / 3323	8796 / 2536	7156 / 2569	9940 / 2890	8559 / 2386	8170 / 2296
221	194	160	182	233	176	202	180	185
51	55	48	61	81	62	94	76	75
101 / 187	91 / 170	91 / 165	85 / 158	62 / 204	70 / 182	55 / 178	59 / 196	61 / 203
1251 / 673	1281 / 692	1439 / 801	1751 / 944	1949 / 730	1848 / 766	2019 / 760	2044 / 706	2083 / 729
235.6	214.6	198.4	188.5	186.5	178.7	167.5	172.2	173.1
404.3	368.7	345.3	346.9	208.2	234.9	181.8	187.7	184.5
202.2	215.4	258	273.7	201.7	235.1	223.3	218.4	225.1
89	94	96	103	87	89	95	85	84
482	327.7	438.7	512.8	302.8	412.6	330.9	369.1	372.7

when it comes to Maya, although by the smallest of margins. However, none of AMD's CPUs can withstand the stellar performance put up by Intel's Core i7 CPUs - even the nearly 1 GHz slower Core i7 920 manages to crack the sub-10 second barrier for Wprime 2.00 and it's nearly one and a half seconds faster than the fastest AMD CPU. Thanks to their IMC, the Nehalem CPUs can fight on even terms with the Phenom II CPUs and rather favourably - the Core i7 975 EE crosses 14,000 MBps and this using DDR3 RAM at 1,333 MHz. Once faster DDR3 memory becomes widespread we



## CPU Test

	Rs 12,501 and above							
Brand	Intel	AMD	AMD	Intel	AMD	Intel	Intel	Intel
Model	Core 2 Duo E8600	Phenom 2 945	Phenom 2 955BE	Core i7 920	Phenom 2 965BE	Core 2 Quad Q9650	Core 2 Extreme QX9650	Core i7 Extreme 975
Price (Rs) *	13800	13920	14499	14600	14999	16500	52000	56000
Performance (Out of 100)	52.34	58.00	60.72	71.90	63.57	61.67	61.00	90.01
<b>Features</b>								
Socket Interface	LGA 775	AM3/AM2+	AM3/AM2+	LGA 1366	AM3/AM2+	LGA 775	LGA 775	LGA 1366
CPU Codename	Wolfdale	Deneb	Deneb	Nehalem	Deneb	Yorkfield	Yorkfield	Nehalem
Core Frequency	3333 MHz	3000 MHz	3200 MHz	2667 MHz	3400 MHz	3000 MHz	3000 MHz	3333 MHz
Number Of Cores / Hyperthreaded (Y/N)	2 / N	4 / N	4 / N	4 / Y	4 / N	4 / N	4 / N	4 / Y
External Bus Frequency	1333 MHz	2000 MHz	2000 MHz	4800	2000 MHz	1333 MHz	1333 MHz	6400
Fabrication Process (in Nanometers)	45 nm	45nm	45nm	45 nm	45nm	45 nm	45 nm	45 nm
L1 Cache / L2 Cache	128 KB / 6 MB	512 KB / 2 MB	512 KB / 2 MB	256 KB / 2 MB	512 KB / 2 MB	256 KB / 12 MB	256 KB / 12 MB	256 KB / 2 MB
L3 Cache (if any)	-	6 MB	6 MB	8 MB	6 MB	-	-	8 MB
<b>Performance</b>								
<b>Synthetic benchmarks</b>								
3D Mark Vantage (CPU Score)	36497	39520	40515	42445	41150	41319	41564	49816
Wprime 2.00 (32 million, in sec) #	22.907	12.167	11.544	9.435	10.81	12.747	12.794	7.273
ScienceMark 2.0 Cryptography (AES, Rijndael) in sec #	9.119	8.56	8.045	10.815	7.601	10.145	10.224	8.513
ScienceMark 2.0 Membench (Memory bandwidth) MBps	6779.02	9507.85	9622.24	11403.95	9717.15	6635.05	6656.65	14054.98
Maxxon CineBench R10 rendering (all cores / one core)	7107 / 3672	9847 / 2748	10492 / 2924	12527 / 3081	11138 / 3106	11848 / 3321	11797 / 3322	16027 / 3871
PovRay 3.62 (Chess2 scene) (in sec) #	161	166	155	171	145	183	183	133
Valve Multicore CPU Particle benchmark	67	87	92	135	97	108	107	170
<b>Real World Applications</b>								
Maya 2008 Rendering all cores / one core (in sec) #	76 / 142	52 / 170	49 / 160	36 / 162	46 / 150	48 / 158	49 / 158	29 / 128
WinRAR 3.9 (all cores / single core)	1802 / 974	2280 / 790	2357 / 812	3980 / 1006	2420 / 833	2548 / 938	2505 / 916	4805 / 1201
DivX 7.0 Encoding (sec) #	170.1	151.7	144.2	113.8	138.5	143.7	144	90
HandBrake x264 encoding (sec) #	319.5	164.6	154.4	118.5	146.3	159.7	161	104.1
Doom 3 (FPS)	296	251.5	265.7	289.8	271.4	290	287.4	361.6
Crysis (CPU benchmark, FPS)	113	93	97	110	98	106	101	130
COH: Tales of Valor (FPS)	568.7	439.3	435.9	502.8	481.2	525.9	518.4	760.2

\* Exclusive of all taxes # for these scores lower is better

reckon this figure will scale upwards. Do note, however, that the Core i7 is the only CPU with support for tri-channel memory giving it a strong advantage when it comes to bandwidth-intensive computation. As for rendering, Nehalem's four cores are hyper-threaded and Maya 2008 makes use of all eight (four physical, eight logical) cores rather efficiently and the i7 975 renders our test scene in a mere 29 seconds – the fastest we've ever seen. In fact, any application that supports four cores runs much faster on the Core i7s than on any other CPU. In the DivX encoding test,

the Core i7 975 once again registers the quickest score and is the only CPU to encode a 378-MB VOB file in under 100 seconds.

The high-end tests were an eye opener. Gone is AMD's image of a picker of scraps, it is still the underdog, but has come out fighting with some really competitive options. Gone is the Core 2's dominance as AMD's Phenom IIs finally surpass Intel's Core 2-based dual and quad cores. However, AMD has an uphill fight when it comes to matching toes with the new 1,366 pin-based heavyweight. So the Core i7 975 Extreme is the fastest desktop CPU in the world.

Impressive, but it costs Rs. 56,000 – a small fortune to blow on a processor alone. Surprisingly, it's the cheaper sibling, the i7 920 that steals the limelight – it's cheaper than AMD's fastest CPU and outperforms it by a big margin, and on account of this is our Digit Best Buy. The icing on the cake is that the Core i7 920 with the new D0 stepping is a highly overclockable chip; if the rumours are to be believed it can handle 3.8 GHz on air cooling – impressive indeed. Of course if you want to set records, the i7 975 Extreme with its unlocked multiplier and higher QPI rating – 6.4 giga-transfers versus 4.8

giga-transfers for all other Core i7 chips. Of course you could wait a bit until early next year for the Core i9 processors – these will be based on a 32-nm process and may scale very close to 4 GHz. But then this is all totally pointless to the common man. You have plenty of processing grunt with the current batch of CPUs.

Earlier, AMD had a slight price advantage when it came to its platforms which were DDR2 based. Now with the 790FX and 785G chipsets supporting DDR3 it has lost that. If you desire a powerful system today that can handle the best and



A Texas judge has banned the sale of MS Word in the US because of a patent infringement owing to the embedding of XML into Word and Microsoft's DOCX format

most taxing applications thrown at it, opt for a Core i7 920 CPU. There's little sense in investing in anything else, as by late next year most other processors will start to run out of steam.

### What's next?

This is no spoiler but it's plain that Intel plans to phase out the Core 2 range of CPUs. They have had a decorated tenure and it's time to make way for something better. A week or so after you read this we'll be testing Intel's latest toy – the Core i5 CPU. These are a lower-end option


from the Core i7s. The architecture is the same, although a few of the goodies have been stripped off. Needless to say, the platform (called P55) will be cheaper than the X58. Intel has also announced a Core i3 range of CPUs, but we won't see these until next year. These will bring Nehalem to the masses, with entry-level pricings. As mentioned earlier, Intel plans

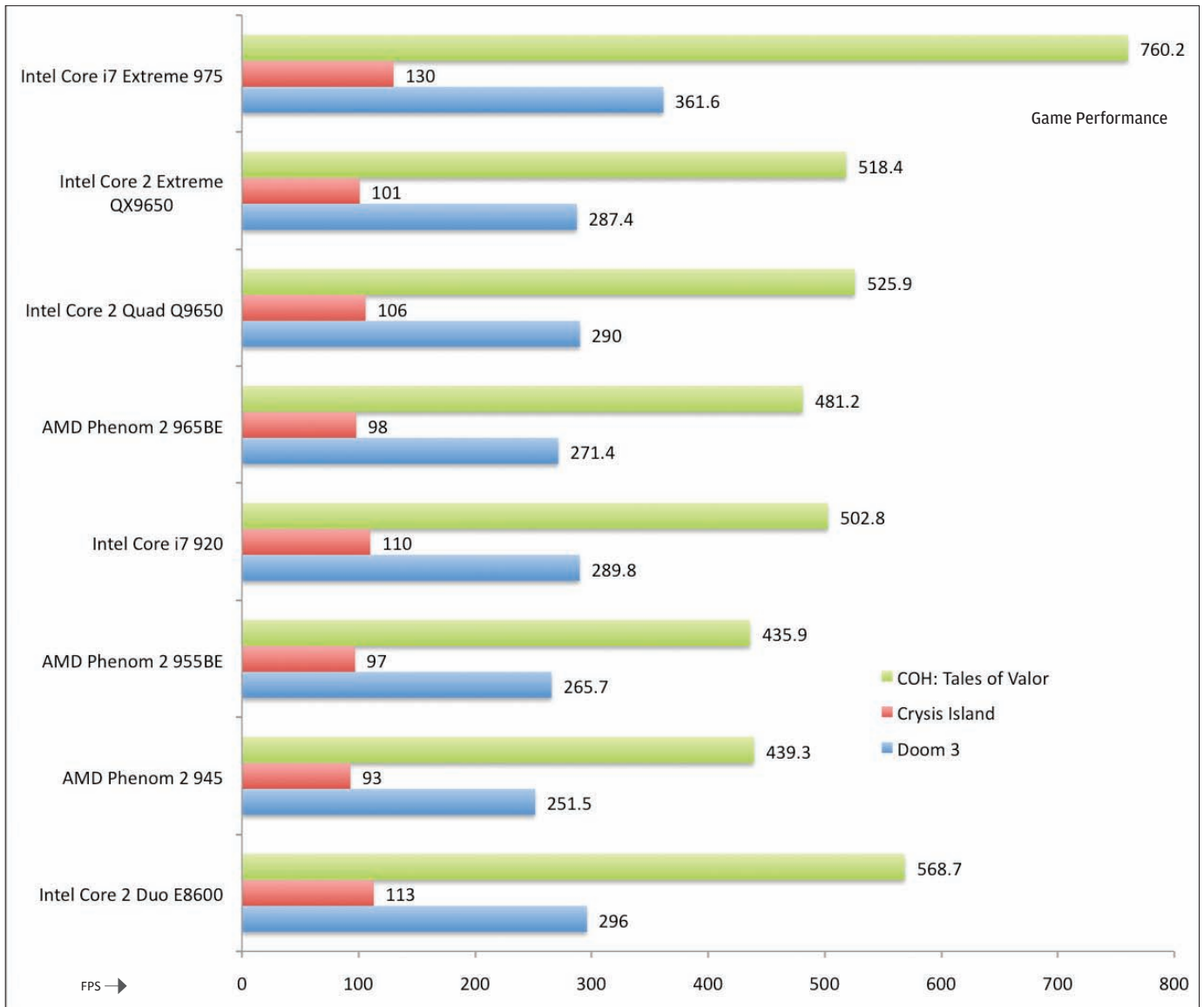
### Intel new 34 nm SSD

The new 34 nm MLC flash-based SSD drives from Intel get a firmware upgrade to resolve data corruption issues face by some customers



Intel Core i7 975 Extreme

to announce a new 32-nm flagship that we know as the Core i9, although details are sketchy. AMD has no further announcements other than the Phenom II 975BE. It does have a six core Opteron processor in the server space. Obviously one would expect something on the desktop front next year, but for the moment it is keeping mum. Sometimes this is the better approach – certainly it'll be interesting to see if it has anything that can match the Core i7. It'll be an epic battle when it happens and one you, courtesy of us, will not miss. 



# Open Source ERPs

Got an enterprise to spare?

**Kshitij Sobti**

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## Enterprise

Straight off the bat, the term enterprise resource planning (ERP) seems like a complicated domain, only to be meddled with by people actually running companies. Knowing how different aspects of an ERP program work can be of considerable value to your future employers. If you know how to work some of the open-source ERPs and can customise them, even better.

Also, it is important to understand what such suites have to offer, and how they can be used by *you*, rather than be distracted by the connotations of the label ERP. The millions of people who use Adobe Photoshop for occasionally cropping images are a testament how little the connotations of a program matter.

## Function

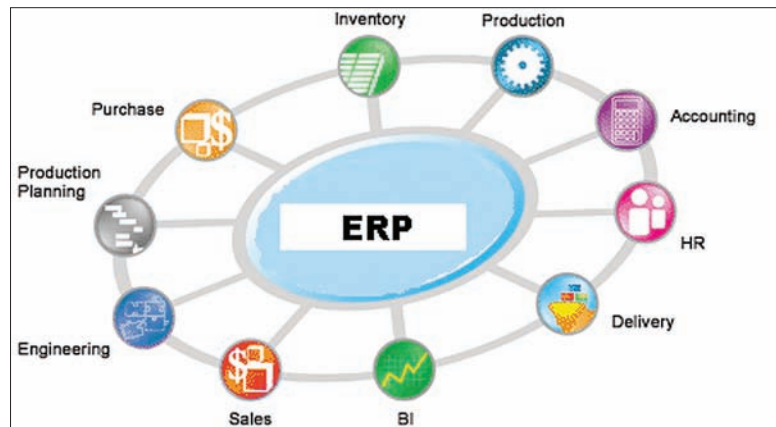
An Enterprise Resource Planning system is a software (and maybe even hardware) solution that facilitates the sharing and processing of an organisation's data. It can significantly help mesh the different resources at the company's disposal, and make managing the different functions of the company better.

Some of the processes that ERPs can handle are:

- Human Resources
- Accounting
- Inventory
- Material Requirements Planning
- Sales Order Entry
- Purchase Order Processing
- Supply Chain Management
- Cash Management
- Warehouse Management
- Bills of Material
- Capacity Requirements Planning

While there are software solutions available which deal with the individual aspects, ERM software is an integration of information and function. Besides integrating the different organisational resources, ERPs can also offer a degree of automation, increasing the efficiency of an organisation.

ERP software stands to change the business process for the better, making it more efficient. Furthermore, by providing



ERP software offer an integration of an enterprises common concerns

better insights into an enterprise's functioning, it can expose further areas for optimisation, in both cost and time. By opting for open source software, there can be further savings in cost.

## Resource

For a program to be considered as ERP software, it needs to cater to as many of the enterprise's needs as possible. Bills, costs, inventory, sales, attendance... the list is endless, and data streams in constantly. It is hard to imagine now, just how these tasks were accomplished before computers came on the scene!

**ERP software stands to change the business process for the better, making it more efficient, providing insights and exposing areas for optimisation**

These different streams of data have typical associations to particular resources of an organisation. Depending on the software solution used, an ERP can help an organisation in managing sales, marketing, billing and inventory management. The best thing though is that the environment is integrated, and an overview of all the enterprises resources can easily be obtained.

## Integration

Integration is what ERPs are all about.

Software for accomplishing the individual functions are always there, but the reason ERPs are preferred is mainly because they offer an integrated solution. Besides the fact that ERPs offer an integrated solution for an organisation's many domains of functionality, they have little identity of their own.

The main aim of an ERP is to consolidate all the data, and services into one integrated workflow.

## Accessibility

Anyone with even a cursory experience with the internet will realise that hyperlinks are perhaps the coolest things around. The way they allow for cross-linking of information is something for which is hard to find a parallel. ERP software in a similar manner allows for the cross connection of data which belongs in completely different streams, and allows them to be compared, compounded and manipulated. It then becomes quite easy to see the relationships between the different organisational resources.

While the more data collected, the better, with increasing amounts of data there is increasing need for better ways to utilise and manipulate this data, and that is something that ERP programs provide. By making it easier to record and utilise this data, they also enable and encourage the collection of more data, and from more diverse aspects of an enterprise's functioning.

An important thing to note is that in today's connected internet-driven world, this data is essentially available in real-time, the benefits of which are obvious. Real-time data means real-time control, where negative



trends can be immediately recognised, quashed, and positive trends can similarly be analysed, attributed and improved upon.

## Open Source ERP

Before open source ERPs began to appear, companies could either purchase / rent ERP solutions for high prices, or they could implement their own solution, which took time and money, and itself needed to be maintained. Open source ERPs provide a perfect middle ground.

Open source software is touted with its many benefits in almost every field of computing, but where it can really shine is when people can actually utilise the code. For most people who are not developers, software being open source does not help much. The code is out there but there is little chance you will ever be able to use it, all you can comfort yourself with is the fact that it being open source means development on the software should always continue in some form.

Enterprises can surely benefit from the community support and a wide developer base, however companies can gain even further benefit as they have the capacity to hire developers to customise and optimise the software to their exact needs. They can develop additional modules in case some functionality is missing, or remove functionality to improve performance and ease of use.

That is not all, since the software is open-source they don't have to wait for the software company (or in this case community) to fix bugs.

Another possible advantage with open-source software solutions is that you could possibly integrate the best functions of different open source solutions into a single package (although with the different architectures of such software it is difficult to imagine this case). For companies that plan to shift from a proprietary solution to an open source one, the company can choose to mimic the old interface, to make it easier to transition.

**With OSS enterprises can develop additional modules in case some functionality is missing, or remove features to improve performance and ease of use**

In the end, for companies that have the capacity, going open source can not only save money, but also give the company a more powerful and integrated organisational framework catered directly to its needs. No longer will they have to pay huge sums of money for software that might not end up meeting their needs, or purchasing software that the company might abandon later on. With the source code in their hands, they can lead the development even if no one else is there.

## The open source disadvantage

While many people appreciate the power of open source, when it comes right down to it, many companies prefer to use

proprietary software that comes with a support contract (although some open source ERPs are also offered with support or even commercial licences). The open source aspect is endearing, but if the organisation lacks in-house IT skills, the flexibility, and customisability of the software is lost to them.

When you have your own customised and home-developed solution for ERP, you are bound to find that you are dependent on the original developers for continued upgrades. With changes in the development team due to any reason, there could be significant problems – to alleviate these, make sure throughout development that the code is well documented and commented.

## Conclusion

Open source is creeping into the most unusual places, and it is best that you take advantage of this. The open source community is teeming with brilliant products that can help optimise your organisation to the best and fullest, and open source ERPs represent a brilliant consolidation of some of the best open source technologies out there.

You need not look at open source ERPs as an endpoint for your needs, but more as starting points upon which you can build your organisation's infrastructure. This might seem like a lot of unnecessary work, when so many commercial implementations exist, however once you are done with the effort, you will have a much more streamlined and optimised solution that is best suited for your needs. **d**

## OPEN SOURCE ERP SOLUTIONS

There is no shortage of open source ERPs today, which just goes on to show how diverse the open source community really is. While commercial ERPs can cost the company millions to implement, open source solutions are essentially free!

### Opentaps

Open taps is a flexible ERP software package built on open source technologies such as Apache Geronimo, Tomcat, and OFBiz, and can run on a variety of open source and commercial databases. The software itself is available in a modified version of the GPL.

It is built on a Service Oriented Architecture, which means that the functionality of the software is provided by loosely coupled services. In such architecture, each service provides functionality for one task, and by combining these services in the required pattern, you can accomplish complicated tasks. This also makes the system very flexible.

### Compiere

Compiere is a professional ERM solution that has a commercial backing. Unlike opentaps, it espouses a Model driven architecture, in which the model of the data is used to generate the procedures that define a process. This means that as the company's requirements change, and the more, and different kinds of information need to be collected, the structure of the database can be changed with ease. Compiere's use of the MVC paradigm, allows this information to be presented using multiple views, which can be modified to accommodate each company's special needs.

The company behind Compiere also provides professional versions which come at a subscription price, and support more features. While long criticized for only running on proprietary Oracle database servers, it is well on its way to develop support for open source database servers such as MySQL, PostgreSQL etc.

### ERP5

Based on the Zope server this ERP5 is another

open source ERP under the GPL. Similar to Compiere it too is available in a paid version as ERP5 Express which comes a SaaS.

The 5 in ERP5 is not based on a version no, but the five principles of Resource, Node, Path, Movement, Item which are employed in ERP5. Where resources are as their name suggests, the resources available to the company such as products in an inventory, machines in factories etc. Nodes represent points which deal in resources, such as bank accounts which deal in the resource of money, or a manufacturing plant which deals in raw resources and finished resources. Paths define the procedure of exchanging resources between nodes. Movements represent the actual utilization of paths to move resources between nodes. Finally, Items are instances of resources, such as a printing press is an item that represents a resource.

ERP5 utilises these concepts in creating "business templates" which define the core functionality. It has been awarded the Best ERP Implementation by "Decision Informatique Professional Magazine".

**Bling bling**

Linux soon to get 64-bit version of Google Chrome Browser. Version for Mac OS X soon to follow

**Miracle for Oracle**

Oracle finally gets the US antitrust approval to buy Sun Microsystems. The deal has been on hold since June

**Kumar Jhuremalani**

kumar.j@thinkdigit.com

So you have a fancy new compact netbook and want to run Linux on it. Well there are many distros for netbooks available such as the popular Ubuntu Netbook Remix, Crunchee, SLAX, etc. But even though these distros are custom made for netbooks, they lack the element to further customise them, and well, some might even say, Linux is all about doing it yourself. When you are considering netbooks, you have to realise that the most common resolution on the displays is 1024 x 600, which will make the desktop of a Linux distro, such as Ubuntu, pretty cluttered, as at that resolution, the horizontal space is more than the vertical space.

So is there something that can solve this problem in a regular Linux distribution. GTK is the word you are looking for here, GTK is a library that's part and parcel of GNOME or any Linux distribution for that matter. So what does GTK actually do? Well GTK is what programmers use to create graphical user interfaces (GUI) and is what is responsible for most of the features such as the dimensions of buttons, various colours of menu dropdowns, etc. The reason why we are talking so much about

GTK is because it is highly flexible and this is what is going to be playing a major part in customising your GNOME theme for your netbook. We are going to show you the basics of creating and modifying a GNOME theme by editing the .gtkrc-2.0 file.

We've simplified the procedure for you guys so you don't have to spend too much time figuring out what to adjust.

First off, we need to create a text file, that will contain the codes to modify the theme, in the Home folder and name it .gtkrc-2.0. If the file already exists, then you need to modify the values in the lines we are going to discuss.

Another way to create this file is through the terminal, just type \$ touch ~/.gtkrc-2.0

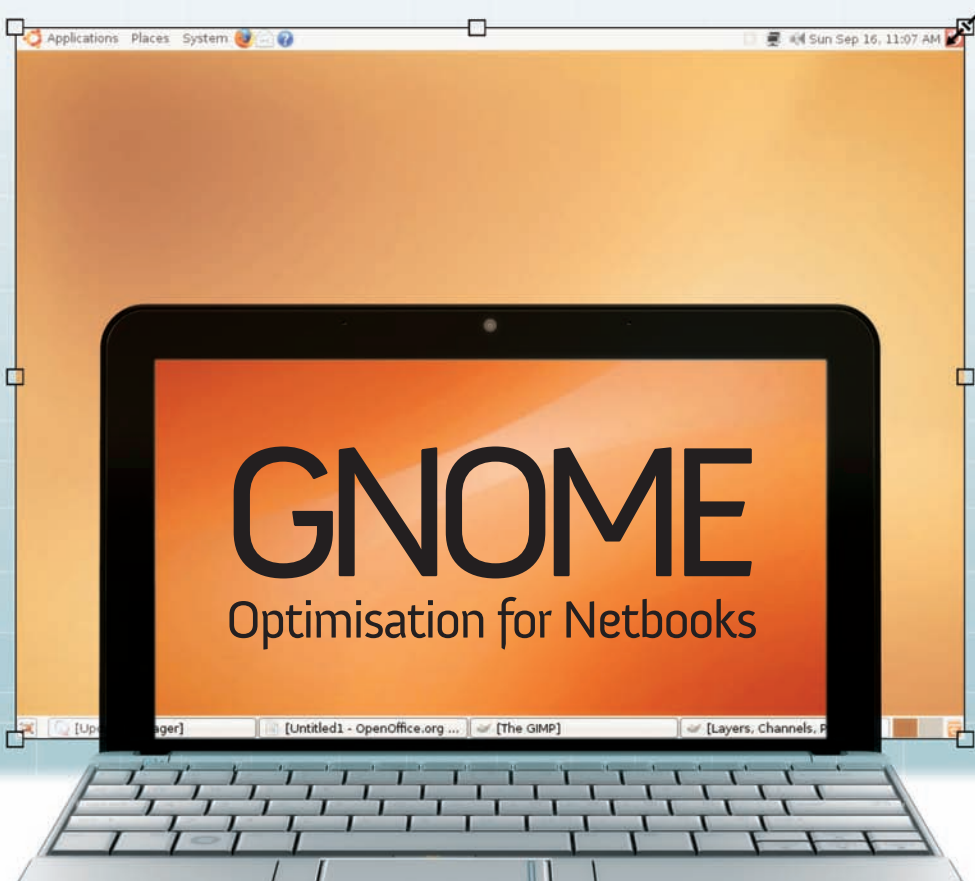
Next you can just type out what's given below into that file and save it. After that you can either restart your PC or just hit

[Ctrl]+[Alt]+[Backspace].

But if you are going to use the second method then you better save what you are currently working on as it will close all programs and bring you to the login screen.

```
style "gtkcompact" {
  font_name="Sans 8"
  GtkButton::default_
  border={0,0,0,0}
```

```
  GtkButton::default_outside_
  border={0,0,0,0}
  GtkButtonBox::child_min_
  width=0
  GtkButtonBox::child_min_
  height=0
  GtkButtonBox::child_
  internal_pad_x=0
  GtkButtonBox::child_
  internal_pad_y=0
  GtkMenuItem::vertical-padding=1
  GtkMenuBar::internal_
  padding=0
  GtkMenuItem::horizontal_
  padding=2
  GtkToolBar::internal-
  padding=0
  GtkToolBar::space-size=0
  GtkOptionMenu::indicator_
  size=0
  GtkOptionMenu::indicator_
  spacing=0
  GtkPaned::handle_size=4
  GtkRange::trough_border=0
  GtkRange::stepper_spacing=0
  GtkScale::value_spacing=0
  GtkScrolledWindow::scrollbar_
  spacing=0
  GtkExpander::expander_
  size=10
  GtkExpander::expander_
  spacing=0
  GtkTreeView::vertical-
```



## Nokia netbooks soon

Nokia, the leader in mobile phones, is considering to bridge the gap between mobiles and PCs, by joining the netbook market

## Goal

Electronic Arts and U.S. Soccer have together formed a new plan to give free online virtual training to budding soccer enthusiasts

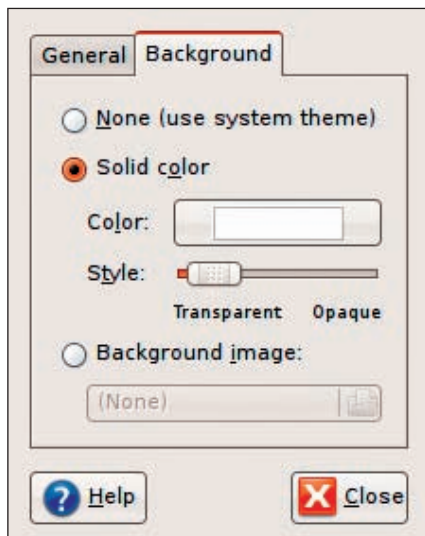
## Workshop

```
separator=0
  GtkTreeView::horizontal-
separator=0
  GtkTreeView::expander-size=4
  GtkTreeView::fixed-height-
mode=TRUE
  GtkWidget::focus_padding=0
}
class "GtkWidget" style
"gtkcompact"

  style "gtkcompactextra" {
  xthickness=0
  ythickness=0
}
class "GtkButton" style
"gtkcompactextra"
class "GtkToolbar" style
"gtkcompactextra"
class "GtkPaned" style
"gtkcompactextra"
```

The first thing we changed here is the font, well the font is the same, but we have reduced the font size to 8 instead of the default 10. You could also try Bitstream Vera Sans Roman 8 to see if you prefer that font.

We have reduced the sizes of the boxes and borders to it's bare minimal with the settings provided. The button borders, internal and external have been pulled down. To change these values you can



Adjust the panel setting with the Panel Properties

mess with the values which correspond to the four sides of the button.

```
GtkButton::default_
border={0,0,0,0}
GtkButton::default_outside_
border={0,0,0,0}
```

To change the spaces between alphabets and numbers you can adjust the value in the following line, 0 being the minimum we have selected:

```
GtkScale::value_spacing=0
```

With GNOME, the buttons don't contain labels, they have what is called a child menu, which mostly is a label or could even be an image or a pixmap. We have kept the dimensions of the child widget to a minimum for netbooks, but you can change them by adjust the values in the lines:

```
GtkButtonBox::child_min_
width=0
GtkButtonBox::child_min_
height=0
GtkButtonBox::child_
internal_pad_x=0
GtkButtonBox::child_
internal_pad_y=0
```

Similarly, the height and width of all the menus, menubars, scrollbars and toolbars have been kept to a minimum value. The GtkExpander option is connected to the GtkTreeView which is the list navigation style in GNOME.

We'd advise you to use the TreeView with your netbook, which is basically list view, so it's easier to navigate between files. You can optimise the size of the format by adjusting the TreeView values.

```
GtkTreeView::vertical-
separator=0
GtkTreeView::horizontal-
separator=0
```

After these changes there are a few more things you can change to optimize GNOME further for your netbook.

## A single panel is all that's needed

By default Ubuntu comes with two panels located at the top and bottom of the screen. You don't really want this as it takes up too much desktop space. So start off by right-clicking the lower panel and click on **Delete This Panel**. Don't get too afraid as you won't really lose anything by deleting the panel. The folders or items that were present on that panel can be easily added to the other panel by just right-clicking on that panel and selecting the option **Add To Panel**.

Now you are left with a single top panel. Let's tweak this a bit more, right-click the top panel and go to **Properties**. Here you should reduce the size of the Panel to the least possible number so as to increase the vertical space on the desktop.

Next thing to do is change the orientation of this panel to the right or left, which ever you prefer. And to add a bit of style factor we have changed the opacity of the panel as well. To do that, go to **Panel Properties** by right-clicking on the panel and selecting properties. To change the orientation, select the



No need to cluster the panel with windows

location from the drop-down menu. This is optional as some of you might prefer a top or bottom orientation.

To change the opacity, navigate to the **Background** tab and select **Solid color**. Change the opacity by using the slider.

You can also uncheck the **Expand** option in the **Properties** window, which will give the panel a smaller size that may not take up the entire height of the screen.

## Looks aren't everything

If you don't mind simplistic looks, then you can also directly just disable the icons that are displayed in the menu bar. For this you need to go to **System > Preferences > Appearance**, navigate to the **Interface** tab and uncheck the option **Show icons in menus**. You will instantly see a reduction in the size of icons on the panel and if you open any menus from the menu bar you will also notice that you don't have any icons left.

Another little thing you could change is the text below the icons. By default, all the programs in Ubuntu have text below icons. If you disable the text and keep only the icons it would free a bit more of vertical space. To do this, revisit the **Interface** tab of **Appearance** settings. Here, select **Icons only** from the drop down options under the **Toolbar buttons label** option. Again nothing to get too worried about, most of the icons are self explanatory and if you do come across something that you don't understand then you can always just mouse over for the tooltip.

## Stack up those windows

The last thing that we will be discussing here is to reduce the clutter created by open programs on the Panel. We will be using the tool **Windows Selector** for this task and it's very easy to implement. All you have to do is right-click on the Panel and select **'Add To Panel'**. Next type in **'Windows Selector'** in the search field and click on **Add**. Once it's done all your windows will be stacked into a single button on the Panel. **[d]**



## Aston 2 Shell

If you have the required system resources to support a shell with great eye-candy, check out Aston 2 Shell in this month's DVD

## Extend Explorer

Using extensions for the default Windows shell adds control and functions to Explorer.exe, in a similar way to plug-ins. Head over to <http://shellcity.net> for a long list of Explorer extensions

BBLean:

# A lightweight Explorer

Aditya Madanapalle

[aditya.madanapalle@thinkdigit.com](mailto:aditya.madanapalle@thinkdigit.com)

An operating system has two main components, the kernel, which contains all the basic mechanisms of the operating system, such as the input-output routines, disk access, etc., and the shell, which is the interface between the user and the kernel. In Windows, the default shell is explorer.exe, which is located in the Windows system folder. Explorer.exe starts automatically every time Windows starts, and other applications are launched through explorer.exe. Over prolonged use, a change in the shell is a refreshing option, but most users are not aware that this is possible. There are many commercial shell replacements available, which may be more secure or offer more eye candy. However, most of these are heavy on system resources, and not everyone would be willing to invest their system resources in just looks, especially if the machines struggle under Aero functionality.

For some time now, Linux users have had much more freedom to tweak around with the look and feel of their desktops, with many desktop environments and window managers available, along with an active skinning community. Some of these desktop environments have been designed keeping in mind the need for individuals to modify the shell they use. Blackbox was one such desktop environment for Linux, which was forked to Windows as BB4Win. BBLean is a modification of BB4Win, that stripped BB4Win to its essentials, reduced the system signature, and added functionality for easy modification. BBLean is a simple, lightweight shell replacement, with a minimalist approach to design. BBLean works well on older machines with Windows XP. There are a few bugs when

it comes to using plugins on Windows 7 and Vista.

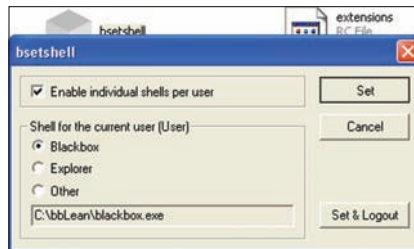
## Installing BBLean

BBLean is a 404 kB download from [bb4win.sourceforge.net/bblean](http://bb4win.sourceforge.net/bblean). The software is also on this month's DVD. Double click on the .exe file, and choose an install location.

Using the default allows you to edit and configure the shell. In the default installation, there will be a few INI, RC and EXE files. The RC files are used for configuring BBLean. First, test drive the shell by clicking on blackbox.exe. This will replace the default Windows shell temporarily, and run it as an application. By default, the taskbar is on top, and another option of minimising windows appears. You will notice the lack of a start button, and all the icons will have disappeared. Right-click anywhere on the screen, and a menu should pop up. The Start menu will have the programs, and the Desktop menu will have the shortcuts on your desktop. Select the styles menu, and have a look at the three default skins available. These might not be very impressive, but there are a lot of community-made BBLean skins available on the internet.

## Setting BBLean as default shell

In the BBLean directory, double click on bsetshell.exe. The "Set shell for this user individually" sets BBLean as the default shell for the current user only. Check this box if you are using multiple accounts on a computer. You can use this setting to create an account with the default Windows shell, and one account for the BBLean shell. Uncheck this box if you want to use BBLean as the default shell across all the accounts on the computer. There are three shell options available, Blackbox Explorer and Other. Select BBLean and click on OK. BBLean is now set as the



Replacing Explorer with BBLean as the default shell

default shell for the computer.

If you want to switch back to Explorer.exe as the default shell for any reason, click on bsetshell.exe and select Explorer, before clicking on OK.

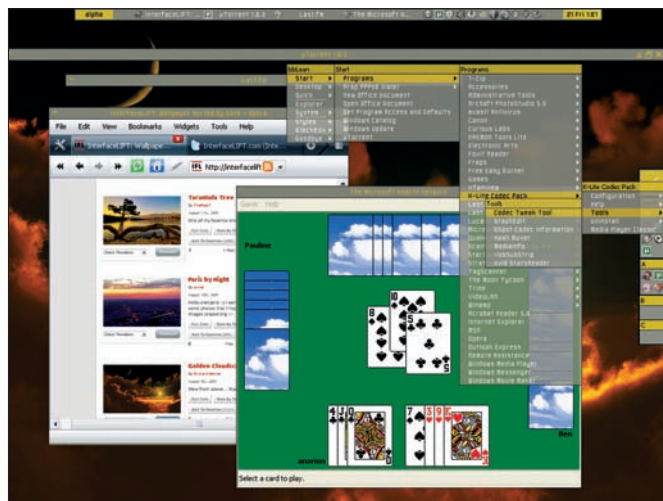
## Using plugins

Plugins are the lifeblood of BBLean. Although the basic shell is very usable, plugins add a lot of functionality, which is not included in the default package. A comprehensive list of plugins is available at [www.thinkdigit.com/d/bbplugins](http://www.thinkdigit.com/d/bbplugins). Note that any plugin for BB4Win will also work for BBLean. Some of the more important plugins include bbiconbox, which adds icons to the desktop, bbtrans which allows menus and windows to be transparent, and bbkeyhook which adds functionality for multimedia keyboards. These plugins are all less than 50 kB, and are usually distributed as .zip packages. Unzip the contents to /bblean/

plugins. Once the contents are unpacked to the right directory, right click on the desktop, go to BlackBox > Configuration > Plugins>Load/Unload and check the plugins that you have downloaded. Use the same procedure to de-activate plugins at any time.

## Editing skins

BBLean uses a simple text editor with multiple parameters to set the skin. There are a number of skins available, so head over to [Customize.org](http://Customize.org) and search for items tagged with BBLean. BB4Win skins will also work as well with BBLean. Just unzip the files to /bblean/skins. Then right-click on the desktop, go to Styles and select the style that you just downloaded. If you download a large number of skins, sort them into directories. Say the directories are named set1, set2 and so on. Now, when you right-click on the desktop, you can go to Styles > Set1 or Styles > Set2 and so on. It is that simple. You can edit any style by just double clicking on the file, and changing the parameters in the text file. These parameters are well commented, and precise directions are given. You can also review the changes by re-loading the skin. **[d]**



A typical BBLean desktop

**How much is too much?**

The Heavensfield Retreat Center, located near Seattle in the US, is the place to visit to detox yourself from Internet Addiction

**Tweet your location**

A new application is in development for Twitter, the microblogging web site, which will allow users to optionally put geolocation data into their tweets

# Crimping your own LAN cable

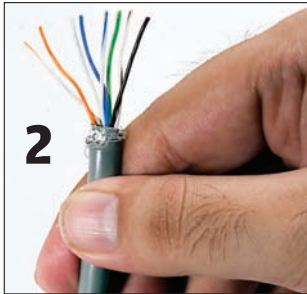
These days, if you go out and buy a network cable it would cost you around Rs. 100 per metre. But when the connector breaks, or you realise that the cable you have is shorter, you need an extension of sorts. Follow the steps below to crimp your own straight or crossover cable.

**Kumar Jhuremalani**

*kumar.j@thinkdigit.com*



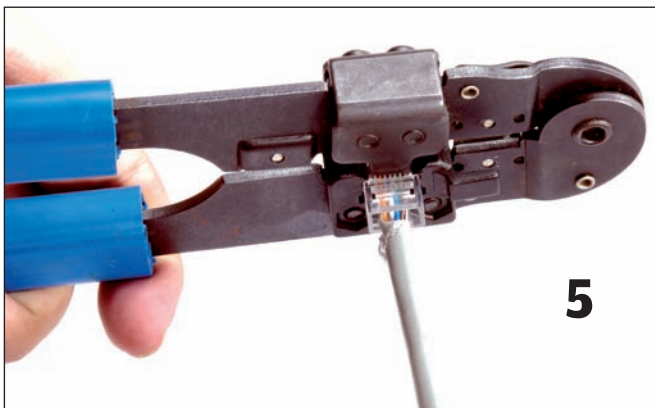
This is all you need to start crimping your own network cables.



Once cut, you will see eight wires twirled around each other in pairs, one solid colour and the other striped. For a straight cable, arrange the wires in the following sequence: White Orange, Orange, White Green, Blue, White Blue, Green, White Brown and Brown. This is the same sequence to follow on both ends for a straight cable.



For a crossover cable, follow the same sequence for one end. For the other end, arrange the wires as follows: White Green, Green, White Orange, Blue, White Blue, Orange, White Brown and Brown.



Insert the RJ45 connector (with the cable still attached to it) into the crimping tool. Ensure the eight wires are pushed all the way into the connector. Now just squeeze the tool until you hear a click. That's it, you are done.

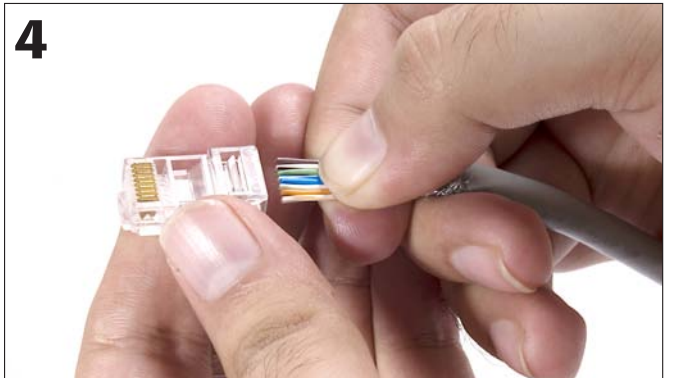
Next you need to cut the outer cable jacket. Make sure not to cut it too much or you might just damage the internal wires. You can also use a knife or blade to cut through the outer jacket.

**1**



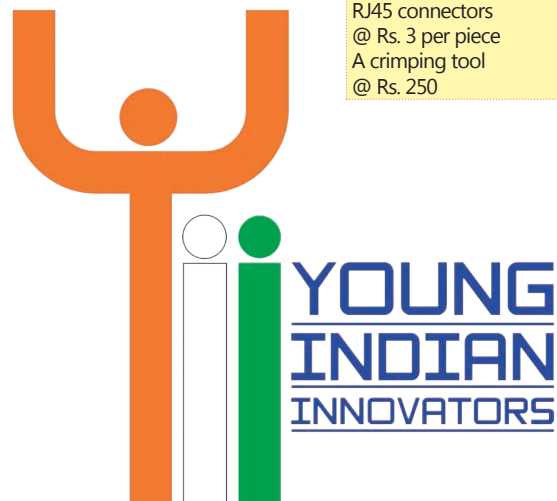
**4**

Once you confirm the wire sequence, cut the wires in equal length. Then slide the wires into the RJ45 connector.



## Requirements

One metre regular network cable  
@ Rs. 50  
RJ45 connectors  
@ Rs. 3 per piece  
A crimping tool  
@ Rs. 250



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**Multi-disc Windows**

Windows 7 to have separate discs for different flavours of the OS

**1 TB for laptops**

Western Digital launches 1 TB drive in the 2.5-inch form factor

# Your questions, our answers

All your computer niggles and nags are dealt with here!

**Error loading operating system**

I built a new PC using an ASUS M2N68-AM-SE2 motherboard running an AMD Sempron processor, 1 GB Kingston memory and a 160 GB Western Digital hard drive.

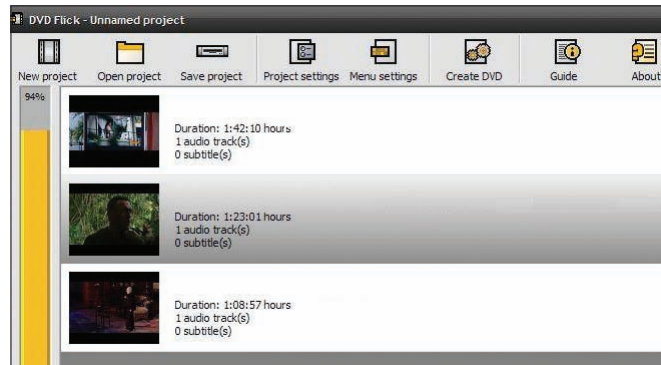
When I install both 32-bit and 64-bit Windows operating system, it gives me an error saying

“Error loading operating system”. The system boots with the installation disk, it copies the files to HDD but when it reboots, it says “error loading operating system”.

I tried finding solutions online, people suggest enabling LBA mode but it is already enabled.

**Yugal Kishore**

It could be some problem with the BIOS or the drive. Enter the BIOS before boot up and check whether the drive shows up in the list. Try using some other hard drives and see if they work or not. Try replacing the cable as well and also scan the hard drive for problems using a drive diagnostics tool. It could also be some issues with the partitions on the drive. Format



The simple-to-use interface of DVD Flick

the partition you are trying to install the OS on.

**DVD burning software**

Is there any disc burning software that can burn AVI files to a DVD playable on a DVD player? I have a Sony DVD player and I tried burning just the AVI files on a DVD using Nero. It works fine on my friend's player, but not on mine.

**Prajkt Yeole**

AVI files burnt onto a DVD will play on players that support different file formats and codecs. A traditional DVD will only read movie DVDs. To burn movie DVDs, use

a software called DVD Flick ([www.dvdflick.net](http://www.dvdflick.net)). Look out for the detailed workshop in the Tips and Tricks section in this issue.

**Frustrating booting problem!**

A few weeks back, my machine started having booting problems. The power LED (blue) stayed on, but the hard disk LED remained off. My monitor says that it's turning off to save power every time. A hardware engineer said that my SMPS had gone kaput and I had it replaced immediately. Even after that, the machine booted fine sometimes, but just got stuck again.

After that, I did a fresh BIOS update, after which for several days I did not face any problems. Now again, I am facing the same booting problems as before. Nine out of ten times, the machine hangs during boot. The power LED stays on and the hard drive LED stays off. Pressing and holding the power button for 5-6 seconds used to correct it, till now.

**Amitava Das**

If you have a UPS set up for the computer, try disconnecting it. There's no single clear way to know what the problem may be. Start by disconnecting the drives and see if it starts up without any problems.

The next thing to check is the motherboard. Try using it with a different processor to see if it works. If the motherboard is new, it might be worth sending it back to get checked by the service centre.

**Virus attack!**

Viruses with filenames regsvr.exe and mediacontrol.exe have crept into my laptop. My anti virus has been disabled by the viruses. I had installed Norton anti virus, but I'm not even able to remove it or install a new anti virus. All my video files are getting corrupted and turning into IMG files. Also, I'm unable to access my guest account and the registry editor has been disabled.

**Anand P**

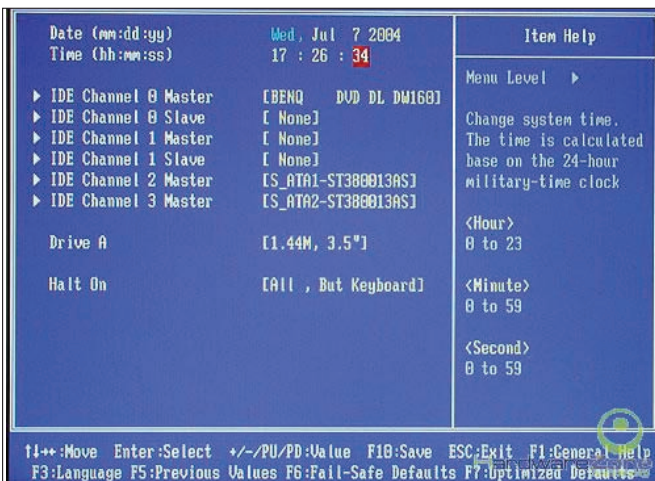
First, try updating the virus definitions for your current anti virus. Try a different anti virus program that comes with a backup CD or DVD disc that you can boot into and scan the drive without Windows running. Some others will let you create a rescue disc. Try using these to fix the problem.

**Missing system files**

My problem is that when I start my system, it gives an error “System file missing” “Windows\System32\Config\System”. Please insert XP CD and press r

**Get Help Now!**

E-mail us your computing problems along with your contact details and complete system configuration to [sos@thinkdigit.com](mailto:sos@thinkdigit.com), and we might answer them here! Since we get many more mails per day than we can handle, it may take some time for your query to be answered. Rest assured, we are listening!



Ensuring that the hard drives are displayed in BIOS

### AMD driver interface

AMD introduced a new user interface in the Catalyst 9.7 drivers

### Cheaper HTPCs

NVIDIA launches a lower end Ion-LE; it's no longer a DirectX 10 graphics solution

to repair.

After I repair it by using the CD, it restarts after the Windows XP logo screen. After many restarts, it comes to the logon screen and after I log on to any user account, it logs off immediately. I tried to format the drives but when the Windows XP

that my Yahoo! account is full of unwanted mails. I also report some of the addresses and mails to the spam filter but even then, the new mails of lottery and others offers continue coming. I have a questions regarding this.

1. Like we change the password in an account, why can

are being targeted and being spammed on purpose, then you can visit the Mumbai Cybercrime department's site – [www.cybercellmumbai.com](http://www.cybercellmumbai.com). You can find some information there.

### Problems with drivers on Windows Vista

I am trying to move from Windows Vista to Windows XP on my Sony VGN-CS series laptop, but it can't load XP on it. It fails to load the video and sound drivers. Kindly give me a solution for it.

Amol

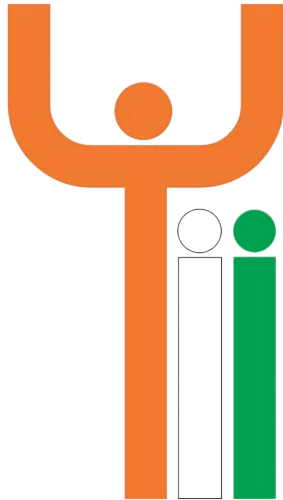
If Sony doesn't give support for a laptop running Windows XP, then drivers might not be available for that laptop. Check for discs that came along with the laptop for drivers for your laptop. If you know what graphics and sound solutions are used on the laptop, you can download

from 1 GB DDR2 667 to 3 GB DDR2 667. I got a warning message that said for max performance there should be identical memory sets in both slots, so my question is whether I wasted money buying 2 GB RAM or will there will be an improvement in performance. My motherboard is an Intel D945GCCR and the processor is an Intel Core 2 Duo 2 GHz E4400.

I have two hard drives in my PC, one used for regular use and other for backing up data both are internal disk. The backup disk is used twice in a month so I only disconnect the SATA data cable. After use, the power cable left connected so I learnt that it consumes power when it is idle. Since then, I've been disconnecting the power cable each and every time but it is tricky and dangerous. Can you suggest other means to do the same?

Arun Hasan

There will definitely be some performance boost with 3 GB of memory. You'll



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**YOUNG INDIAN INNOVATORS**

installer copies files, the blue screen shows up. It tells me to disable any new hardware and then restart. I am using Windows XP with SP2. I also tried SP3, but the problem doesn't go away. I have used different XP CDs, but the same error continues to show up.

Devendra Singh Negi

There are many files that might have been corrupted. Repairing and replacing these files is possible using the Windows installation disc. If you are getting blue screens during the copying process, it could be because of a spoilt hard drive. It's a good idea to run a disc scanning tool to look for bad sectors or failures. If you have multiple sticks of RAM, try using only one in case the blue screens are caused due to faulty memory.

### Worried about email account

I had Yahoo mail account for the past few years but rarely use it now. I use it every four to six months. The problem is

we not change the user ID of an email account?

2. Please tell me the best and safe mail service provider

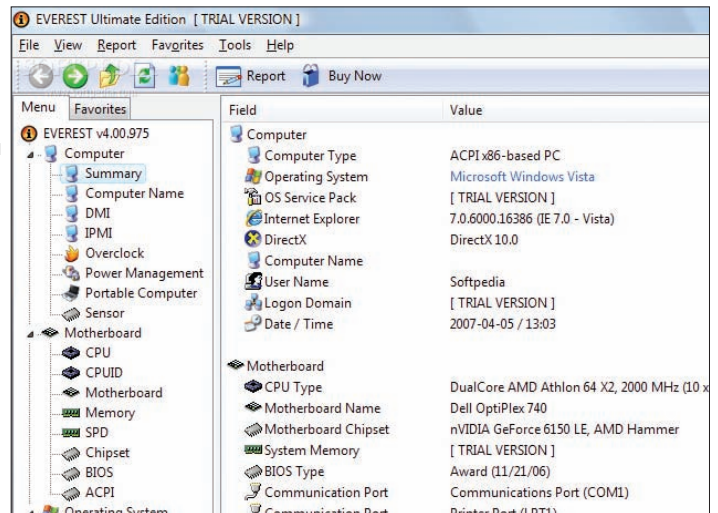
3. Is there any web site or government body where I can report such cases?

Mandeep Sandhu

Users accounts are made to identify different individuals. Almost no email provider gives you the option to change the username or email address. With the pace at which accounts are made, it's difficult as it is to get new user ids and changing them would mean wasting ones created already.

There is no clear best email provider. Gmail is by far the most popular mail provider there is. It's free and yet they provide a huge capacity mailbox. Users are also given free POP3 and IMAP connectivity. Gmail has a pretty good spam filter as well. Many other mail providers have spam filters that work equally well these days.

Spam is a common problem all over the world and across all countries. If you feel you



Everest displays detailed information on your computer's hardware

drivers from the manufacturer's sites directly. Use a hardware identification tool such as Everest ([www.lavalys.com](http://www.lavalys.com)) to find out what hardware your laptop has.

### Performance by memory increase

I recently upgraded my memory

be able to run many larger programs simultaneously. If you use Windows Vista, that requires a minimum of 1 GB. The upcoming Windows 7 will comfortably run on your system with the amount of RAM you have now. Besides, DDR2 memory is at an all-time low, so you haven't really wasted your money!



## Clean your registry

Over prolonged use, your Windows registry database may be full of entries that are no longer used. Use CCleaner which is given on the DVD to clean the registry database before proceeding with this tutorial

## An easy-to-follow guide to get your Windows applications working on a Linux system

**Aditya Madanapalle**  
aditya.madanapalle@thinkdigit.com

Registry files are databases of configurations for applications using the Windows kernel. The centralised approach to registry databases makes it difficult for users to hunt down individual registry entries of applications, and then back them up or transfer them to another machine. The particular locations of the registry entries of applications can be found in the documentation of the applications, where available, or on FAQs or troubleshooting websites that involve modifying the registry values. The Find tool in Regedit, an application in Windows for editing registry entries, also works for hunting down the registry entries of particular programs. However, these registry entries tend to be scattered around different locations of the database, and there may be a number of registry entries, making it a troublesome process to find and use individual registry entries.

An easier, but wasteful, approach is to transfer all the registry values; the entire registry database from a Windows installation to the WINE platform on a Linux

# Registry migration

machine. Transferring registry entries across operating systems is a simple trick to make some Windows based applications work on a Linux machine. This is not a sure-fire trick to make every Windows application work on a Linux system, but is usually a good idea when applications don't seem to run well on WINE. What we will be doing is to export the registry entries from a Windows machine, saving the file, then importing the registry entries on a Linux machine. There are some pre-requisites for this operation though.

You will need a Linux machine set up, and have installed WINE on it. WINE is a backronym for Wine Is Not an Emulator and emulates a Windows environment. WINE is different from a Virtual Machine, and the applications run in the same desktop environment as other Linux applications. WINE creates a virtual C drive, and a rudimentary Windows directory structure, without partitioning the hard drive on which WINE is installed. All Windows applications run from a virtual C:\Program Files location.

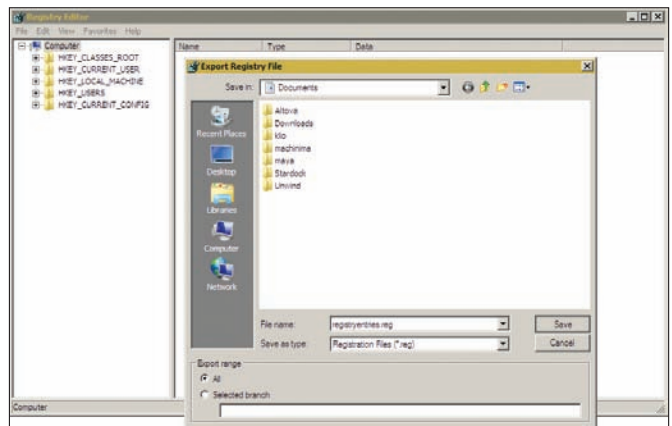
Before starting the procedure, you will have to install the Windows version on a Windows machine. Continue with any post-installation procedures that the software might have, including activation and verification. After this, you will have to install the same version of the software on the Linux

machine, using WINE. Make sure that the software license you have allows you to do this. This procedure will work for the same machine in a dual-boot setup, or multiple machines.

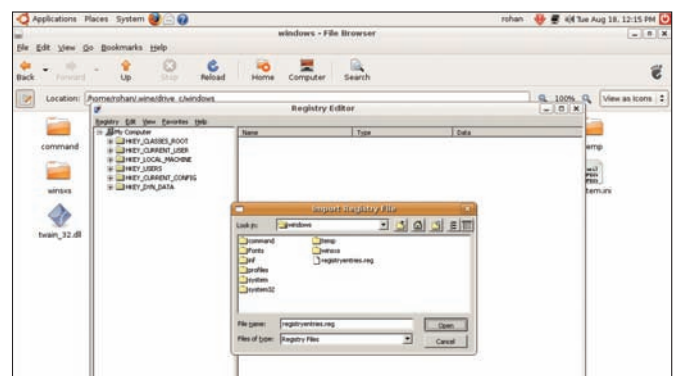
Now you are ready to transfer the registry entries from one machine to another. Note that the same procedure can essentially be used on two Windows machines as well, or for that matter, between

will take some time, and the machine will appear to hang. Wait for regedit to export the file. Now, transfer the .reg file to an external storage device, and start up the Linux machine, or boot up the Linux operating system if you are using a dual-boot setup.

Go to the location of your WINE installation. In Ubuntu, go to Applications > Wine > Browse C: /



Exporting registry entries from a Windows installation



Importing registry files on a Linux installation

### Transferring application data files between machines

This should be the last resort when installing applications intended for Windows machines on a Linux system. If the application is located in C:\Program Files\Applications, transfer it to the identical location in the virtual C: drive created by WINE on your Linux machine. The application will be in the correct location as long as it is installed on the C: drive on the Windows machine. Make sure that the paths are also the same. Windows applications use .dll files which are not always saved in the same location as the application. The most common directory for these .dll files are C:\Windows\System32 and C:\Windows\System. Copy the .dll files from these directories to the same location on the virtual C drive on WINE. If there is no lack of hard disk space on the Linux machine, you can transfer the entire C: drive from the Windows machine to the virtual C: drive on the Linux machine.

two Linux machines, on one of which this operation has been carried out. Go to Start>Run>regedit. The registry editor window will open up. Select the topmost segment in the registry directory, and go to File>Export. Give any file name to the file, and save the file as a .reg file. If you have a lot of applications installed, this

Drive. On a fresh installation of WINE, there should be only two folders, Program Files and Windows. Navigate to Windows, and run regedit.exe. If you have other applications installed through WINE, backup the existing registry entries in case anything goes wrong. Now, go to File > Import, and select the exported registry entries. **d**



# PC protection

If you face constant voltage fluctuation and load shedding, read on for a better understanding of UPS systems

## Agent001

agent001@thinkdigit.com

I've always emphasised the importance of protection for desktop computers. Irrespective of how much you spend on your components, danger lurks in the wires that supply electricity to your home and your PC. A UPS is a device that provides uninterrupted and regulated power to sensitive devices such as a computer. All UPSs will allow your PC to run for a few extra minutes after a power cut allowing you to save your work and shut it down properly.

I've come across people with dead components all because of a failure to install a UPS. If the power supply to your PC suddenly gets cut, several things can happen. Nine times out of ten nothing happens, but there is a possibility of damage to your hard drive and RAM – usually in that order. The motherboard is

also at risk. At the very least, if nothing gets damaged you lose all unsaved data. A UPS eliminates these risks.

The first type of UPS is the "Stand By" type. This UPS simply switches the load to battery in case of power loss on the AC power line. The response time of the switchover (called switching time) is between 2-10 ms. Since most SMPSs have a hold-up time of no less than 16 ms, i.e. greater than the switching time of the UPS, there is no problem of shutdown between the transition from mains power to the DC to AC inverter on the UPS.

The most prevalent type of UPS today is the "line interactive UPS". These can regulate the input AC power to some extent and the battery is charged via AC power. When the AC power cuts, AC input is disconnected and the battery provides power. Such

**I've come across people with dead components all because of a failure to install a UPS**

UPSs are also compact and as such this is what you will find available with most PC vendors. 99 per cent of PC users will want to purchase one of these and they provide adequate protection from surges and spikes and of course blackouts.

There is another type of UPS called the "online UPS". These are much costlier. In this design the AC mains charges only the battery via the inverter and therefore the output runs off only the battery. Since the AC line is never directly powering the connected equipment there is virtually no chance of damage through faults in the line, also there is no switching time involved.

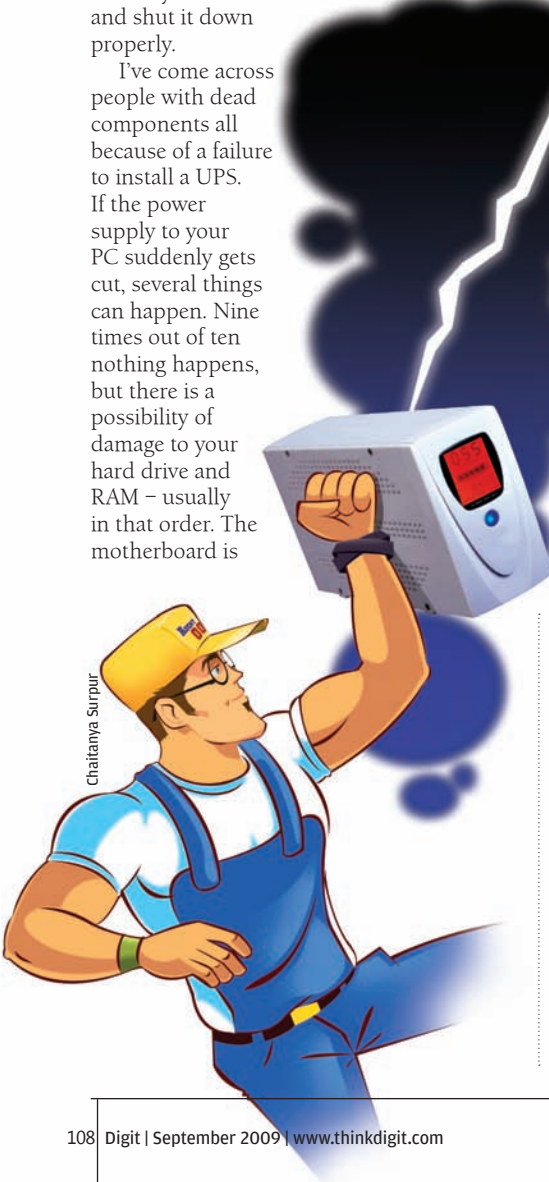
In my opinion when it comes to UPSs, do be choosy about brands. Remember the number of service centres and support available is secondary; the idea is to protect other components, meaning your UPS should not fail at any cost. I trust the following brands – APC, Numeric and PowerSafe. There are other brands such as

Datex, Microtek and Powercom that are also reliable but the first three should get a first look when purchasing. Personally I have owned a Numeric UPS for the last five years and am a very satisfied customer – not a single hiccup despite some gruelling use.

When deciding on the capacity of the UPS remember to use a conversion factor of 0.7. Therefore a UPS with a rating of 1000 VA (volt amperes) equates to a maximum output of 700 watts. You could either be clever and match this to the approximate power consumption of your PC or be really smart and match it to the output of your SMPS unit – either way works. Though the latter may be a bit costlier, it involves minimal calculations. Most people will sell you a UPS on the basis of its backup time – this is totally wrong as the battery backup totally depends on the amount of power your system draws – the more powerful the system, the quicker the battery will drain. Backup time should be used wisely to save and shut down all running programs and your PC, not to continue your work and hope the battery lasts. For most PCs, a UPS rated at 600 VA will suffice. If you are running a powerful PC with a quad core CPU and a fast graphics card you may want to look at something a little higher – 800VA should be good enough.

For most systems, APC's Back-UPS ES 650VA priced at Rs. 3,100 should suffice. If you want something a little beefier I swear by the Numeric Digital 800VA – this model is a little older, priced at Rs. 3,200 but offers sterling stability – this is the one I've been using for the last five years with no problems whatsoever. Alternatively, you could go for APC's BR800-IN priced at Rs. 4,700. If you want something beefier to protect up to two PCs, then the APC Back-UPS RS 1500VA is available for Rs. 8,900 although unfortunately it has only three 6 amp outputs for the battery backup which means you will need to invest in a power strip (spike guard).

A select few people will be looking for an online UPS, particularly those that have invested a lot in their PCs and wish to leave nothing to chance. I recommend the PowerSafe 1000ONL – an online UPS rated at 1000 VA and I was surprised to see it priced at just Rs. 10,000 – cheap for an online UPS. **d**



Chaitanya Surpur

## Seasonic entry

Seasonic enters the Indian power supply market and is gaining popularity

## Wireless power

Nagano Power Radio demonstrates 95 per cent efficiency wireless power transfer across a distance of 40 cm

Agent 001

**Q** I'm a computer science student and I need to buy a laptop within a budget of Rs. 40,000. I'm also interested in a little gaming; please suggest a good performance laptop.

**Abhinav Kumar**

**A** I recommend a Dell Inspiron 14 based notebook if you want something remotely portable; otherwise look at the Inspiron 15 that has the larger 15.6-inch display. The 15.6-inch Inspiron 15 can be had for as little as Rs. 35,000 while the Inspiron 14 will come close to your Rs. 40,000.

**Q** I would like to purchase a branded iPod ranging from Rs. 500 to Rs. 1,500. Kindly recommend me which iPod I should purchase, and please mention the key features. I don't know any more about iPod except that it is used to play music.

**Vishnu Thakor**

**A** Firstly I'd like to clear one misconception – the word "iPod" is an Apple patent and iPods are made by Apple Inc. Every other player in the market is not called an iPod; you should refer to them as PMPs, i.e. portable multimedia players. For Rs. 1,500 you can pick up the Yes YMP-17 1 GB. It's a decent PMP and has a two-colour OLED display and is microSD expandable. Transferring MP3 files is as easy a drag 'n' drop.

**Q** I have the following system - processor: dual core @ 2.0 GHz, motherboard: Jetway 946, RAM: Zion 1 GB DDR2, graphic card: ATI Radeon HD 3450 512 MB, SMPS: Iball 500W, cabinet: Iball. I use Windows 7 RC1 received with Digit June issue. I am currently using an Acer AC713 CRT monitor. I need to buy a 17-inch LCD monitor within a budget of Rs. 6,000-6,500 for general purposes. Is the Dell S1709W or the Samsung 740NW a good option, or should I look for other brands? Also, does my rig need to be upgraded to

play games like NFS undercover, Far Cry 2, Fifa 2009 at maximum resolution and details?

**Sanjib Das**

**A** You have not mentioned whether your processor is a Core 2 Duo or a Pentium D. Either way your PC is not suited for playing the latest games, especially Far Cry 2. You will need to upgrade your memory and graphics card first. For Rs. 3500 you can pick up 4 GB of DDR2 RAM in a 2 x 2 GB kit. Your graphics card should be the next component you upgrade. If you want to go crazy you can spend around Rs. 6,500 and pick up a GeForce 9800GT – which is superb for that price. Later on you might want to buy a Core 2 Duo E8400 (3.0 GHz), priced at Rs. 8,400, this will ensure your GPU doesn't get bottlenecked. For a monitor, refer to our August issue where we tested LCD monitors. In case you missed it, for Rs. 8,700 you can pick up an AOC 2236Vw, a 22-inch monitor. For Rs. 7,500 Acer's P205H is another good pick, it's a 20-inch LCD with good performance.

**Q** I would like to buy a new mobile. My budget is Rs. 10,000. The features I expect are 3G enabled, Wi-Fi (optional), 3.2 MP (2 MP is also ok), Good music, good battery back up and it should look good.

**Prabhu V**

**A** I believe Sony Ericsson's K810i is still available. Although an older model it has many features for the price, and the street price should be in the range of Rs. 9,000

**Q** I have a shoe string budget of Rs. 6,500 for motherboard and processor. I will be highly obliged if you let me know the best combination

**Saurav Chowdhury**

**A** The ASUS NVIDIA 7025 M2N68-AM

motherboard for Rs. 2,250 coupled with the AMD Athlon XP X2 6000+ for Rs. 2,850 is a sweet combo that will be affordable yet powerful enough. It's also well within your budget.

**Q** I have a few issues on buying:

1) A friend said that desktops deteriorate when there is moisture in the air (rainy season). Is it true?

2) My father wants to buy a laptop and I will use it only for gaming; which are good gaming laptops near the 30 to 44 thousand bracket?

3) What would be better – a gaming laptop or desktop?

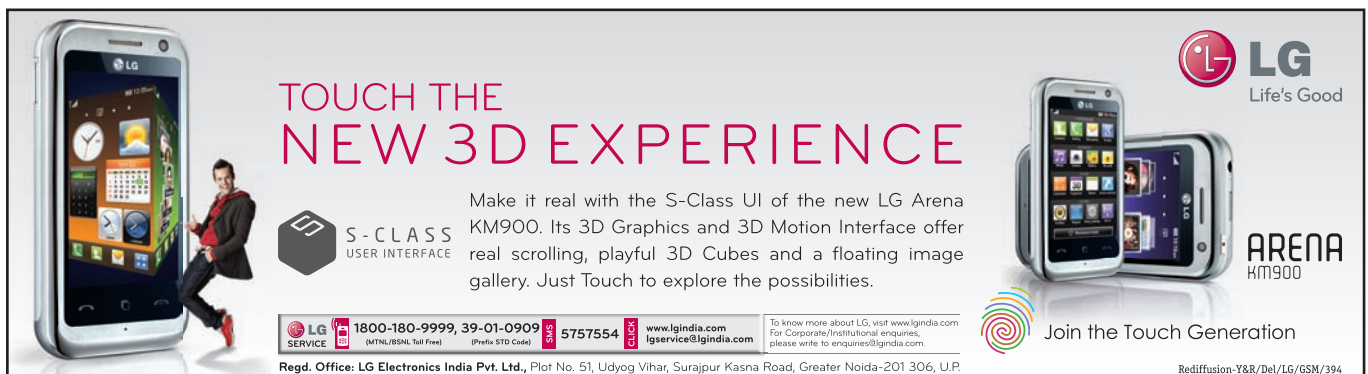
**Prajwal K**

**A** Moisture does gradually corrode the surface of cabinets, power supplies, etc., if they are not properly coated, and moisture can cause short circuits inside your cabinet, but generally this does not happen if your PC is used regularly. It's a good idea to plug out and pack stuff up if you will not be using it for some time, say, more than a couple of weeks. You can alternatively stick sachets of silica gel to the inside of your cabinet as this absorbs the moisture and helps delay its ill effects. Gaming laptops are costlier than that. You can get a general-purpose notebook for that price but if you want to play games the Dell Studio XPS 16 is the bare minimum you should look at. I recommend buying a desktop PC – you will get a more powerful configuration.

**Q** Please suggest the best half-height graphics for my 250-watt PSU

**Satish S**

**A** A GeForce 8400GS should be sufficiently inexpensive. Do check last months' issue where we tested a lot of entry level cards. You're sure to find something suitable. **Q**



**TOUCH THE NEW 3D EXPERIENCE**

Make it real with the S-Class UI of the new LG Arena KM900. Its 3D Graphics and 3D Motion Interface offer real scrolling, playful 3D Cubes and a floating image gallery. Just Touch to explore the possibilities.

**S-CLASS USER INTERFACE**

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To know more about LG, visit [www.lgindia.com](http://www.lgindia.com). For Corporate/Institutional enquiries, please write to [enquiries@lgindia.com](mailto:enquiries@lgindia.com).

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### Processors

Model	Market Price	Tested In	Socket	Speed	FSB	L2 Cache
AMD Sempron 140	Rs. 1,950	September 2009	AM2+	2.7 GHz	2000 MHz HyperTransport	1 MB
AMD Athlon X2 5200+	Rs. 3,200	November 2008	AM2+	2.7 GHz	2000 MHz HyperTransport	1 MB
AMD Athlon X2 7850 BE	Rs. 3,350	September 2009	AM2	2.8 GHz	2000 MHz HyperTransport	2 MB
AMD Athlon II X2 250	Rs. 4,100	September 2009	AM2+	3 GHz	2000 MHz HyperTransport	2 MB
AMD Athlon II X2 550	Rs. 5,450	September 2009	AM2+	3.1 GHz	2000 MHz HyperTransport	1 MB
AMD Phenom X4 9650	Rs. 6,025	November 2008	AM2+	2.3 GHz	3600 MHz HyperTransport	2 MB
AMD Phenom II X3 720 BE	Rs. 7,500	September 2009	AM3	2.8 GHz	2000 MHz HyperTransport	1.5 MB
AMD Phenom II X4 810	Rs. 8,350	September 2009	AM2+	2.6 GHz	2000 MHz HyperTransport	2 MB
AMD Phenom II X4 920 BE	Rs. 9,650		AM3	2.8 GHz	3600 MHz HyperTransport	2 MB
AMD Phenom II X4 945	Rs. 12,075	September 2009	AM2+	3G Hz	2000 MHz HyperTransport	2 MB
AMD Phenom II X4 955BE	Rs. 13,100	September 2009	AM3	3.2 GHz	2000 MHz HyperTransport	2 MB
Intel Dual Core E2200	Rs. 3,000	September 2009	LGA775	2.2 GHz	800 MHz	1 MB
Intel Dual Core E5200	Rs. 3,375	September 2009	LGA775	2.5 GHz	800 MHz	2 MB
Intel Core 2 Duo E7400	Rs. 5,900	September 2009	LGA775	2.8 GHz	1066 MHz	3 MB
Intel Core 2 Duo E8400	Rs. 8,850	September 2009	LGA775	3 GHz	1333 MHz	6 MB
Intel Core 2 Quad Q8200	Rs. 8,650	September 2009	LGA775	2.33 GHz	1333 MHz	4 MB
Intel Core 2 Quad Q8400	Rs. 8,750	September 2009	LGA775	2.4 GHz	1066 MHz	8 MB
Intel Core 2 Quad Q9400	Rs. 12,100		LGA775	2.66 GHz	1333 MHz	6 MB
Intel Core 2 Quad Q9550	Rs. 12,601		LGA775	2.83 GHz	1333 MHz	12 MB
Intel Core i7 920	Rs. 14,900	September 2009	LGA1366	2.66 GHz	4.8 GT/s QPI	NA



### CPU Coolers

Model	Market Price	No. and Size of Fans	Dimensions	Weight (grams)
Cooler Master Hyper TX2	Rs. 1,800	1 x 120 mm	108.3 x 123.7 x 136.5 mm	482
Cooler Master Hyper N520	Rs. 2,700	2 x 92 mm	122.35 x 102.5 x 141 mm	688
Thermalright Ultima 90 - 775	Rs. 1,480	0	115 x 55 x 139 mm	460
Thermalright Ultima 120 Extreme	Rs. 2,870	0	132 x 63.44 x 160.5 mm	790
Sunbeam Core Contact Freezer	Rs. 2,150	1 x 92 mm	95 x 80 x 155 mm	272
Glacialtech Igloo 5750	Rs. 1,795	2 x 92 mm	96 x 120 x 121 mm	507
OCZ Vendetta 2	Rs. 2,550	1 x 120 mm	120 x 50 x 159 mm	746



### Hard Drives

Model	Market Price	Tested in	Speed	Cache	Interface
Seagate 1.5TB	Rs. 7,000	March 2009	7200 RPM	32	SATA 2
Seagate 1TB	Rs. 4,350	April 2009	7200 RPM	32	SATA 2
Seagate 7200.12 500 GB	Rs. 2,600		7200 RPM	16	SATA 2
Seagate 750GB	Rs. 4,100	April 2009	7200 RPM	32	SATA 2
Western Digital Caviar Blue 640GB	Rs. 3,350		7200 RPM	16	SATA 2
Western Digital Caviar Black 1TB	Rs. 7,000	April 2009	7200 RPM	32	SATA 2
Western Digital VelociRaptor 150 GB	Rs. 9,150	April 2009	10000 RPM	32	SATA 2



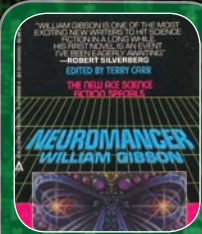
### Graphic Cards

Model	Market Price	Tested in	Core Speed	Type of memory	Memory
EVGA 9600GT Knock-out	Rs. 6,650	November 2008	700 MHz	GDDR3	512 MB
Power Color HD4850	Rs. 6,600	August 2009	625 MHz	GDDR3	512 MB
Power Color HD4670	Rs. 4,650	August 2009	750 MHz	DDR3	1024 MB
Palit GeForce 9400 GT Super	Rs. 2,525	August 2009	550 MHz	GDDR2	1024 MB
Palit Radeon HD 4870 SONIC	Rs. 13,500	October 2008	750 MHz	GDDR5	512 MB
Palit GeForce GTX 275	Rs. 13,900		633 MHz	GDDR3	896 MB
XFX GeForce 8600 GT	Rs. 3,150		540 MHz	GDDR3	256 MB
ZOTAC GeForce GTS 250	Rs. 9,250		738 MHz	GDDR3	1024 MB
Palit GeForce GTX 260	Rs. 10,750		650 MHz	GDDR3	896 MB
ZOTAC GeForce GTX 285	Rs. 26,000	Feb 2009	648 MHz	GDDR3	1024 MB

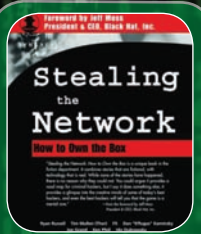
## Geek culture : Hackers

You don't need to be able to count in hexadecimal or hang out at dubious IRC channels to be a hacker. On the other hand, if you can break the encryption on your daddy's WEP wireless security, you are still not a hacker. It's about the eagerness to learn everything your machine can do, rather than knowing just enough to serve your immediate purposes.

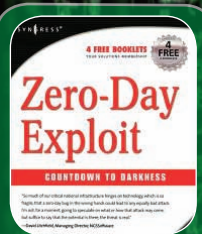
Books



**Neuromancer:** This 1984 book is the source of AI and Virtual Reality awareness in popular culture.



**Stealing the Network:** Fiction with screenshots of hacks, sci-fi cannot get better than this.



**Zero-Day Exploit:** Lessons in safety for network admins, using technical fictional scenarios.

Movies



**Hackers:** A classic black hat - white hat struggle, epitomising the crash and burn attitude. A must watch.



**Ghost in the Machine:** A dead body comes alive in a network, one of the cheesiest tech films made.



**Tron:** A hacker is abducted into cyberspace where he has to fight to survive. A sequel is in the offing.

Gear



**Black hat -** A black hat that says "black hat" from hackerstickers.com. Even a n00b will get the point.



The apparel section of the thinkgeek store has this AYB T-shirt. Take off every Zig!



Tokyoflash sells a range of geeky watches, the Tibida requires you to know binary to tell time.

## ==Digit Diary==

Ahmed decided to conduct some particle collision experiments of his own, and managed to bump into an autorickshaw. Witnesses claim that a small cluster of higg's bosons were released, but were unfortunately not recorded, so the information cannot be confirmed.

Rohan Naravane joined the test centre this month, and jumped right in with the netbook tests. He has as yet not been tested against the team in a Quake 3 tournament, but we will keep you posted on the developments.

There seems to be a strange poltergeist loose in our office. The Caps Lock, Num Lock, and Insert keys seem to be the primary targets, causing a lot of frustration. Edward was particularly irked, when he sat down on Robert's machine and found that he had been Num Locked. If any of you have ghost-busting skills, or are haunted by a similiar spirit, do write in to editor@thinkdigit.com.

## Mirror's Edge in Flash

Couldn't get your hands on the first person parkour adventure? No problem, all you need is a browser to play an official Flash version of this innovative game. Just because it is all in Flash does not mean that it is easy. There are also leaderboards for that multiplayer element. It's a lengthy game, but your progress is automatically saved, so you can revisit. Head over to <http://www.mirrorsedge2d.com>.



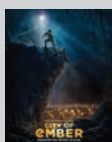
### 1337sp33k

Stay up to date with internet lingo, so you don't wt? the next time you are chatting with someone

**KTHXBAI!** Typically used to haul butt in a hurry, when you want to get out of an unpromising conversation. It is a word that combines Ok, thank you, and bye into one powerful expression.

**gg no re:** Used when you have been totally owned in an online multiplayer scenario. Stands for Good Game, No Re-match, which means you are chickening out.

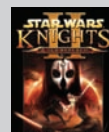
How we unwind



**Movies**  
**City of Ember:** A great 2008 sci-fi flick where kids from an underground buried city discover a world outside.



**Music**  
**Pigs and Pyramids:** A Pink Floyd tribute album which had some refreshing covers, and a few horrible ones.



**Game**  
**KOTOR II:** The team re-visited this old roleplaying game because of the unending variety of ways the game can be played.

# Piracy is Green

NEWS

Researchers in Carnegie Mellon University, in a study sponsored by Microsoft and Intel have concluded that downloading MP3s from the internet has a considerably reduced carbon footprint over traditional approaches of music distribution. They considered purchasing CDs from stores, ordering music CDs online, after which they are delivered to homes, downloading files before burning them on CDs and just using the downloaded files and playing them on computers and PMPs without burning them on CDs. The cost of packaging, transportation, commutation and energy taken up to listen to the music were all factored in. While the study does not explicitly state that downloading illegal MP3s is more environmentally friendly than purchasing CDs from a retail outlet, it is a pretty safe assumption to make.

There are some other interesting conclusions of the study though. If you start feeling guilty about purchasing music from retail outlets because of the harm it causes to mother nature, you can compensate by walking to the retail store instead of driving. This puts the footprints of downloads and purchases at par. The original research paper can be downloaded at <http://snipurl.com/qtsji>.

# tech art: ANSI art



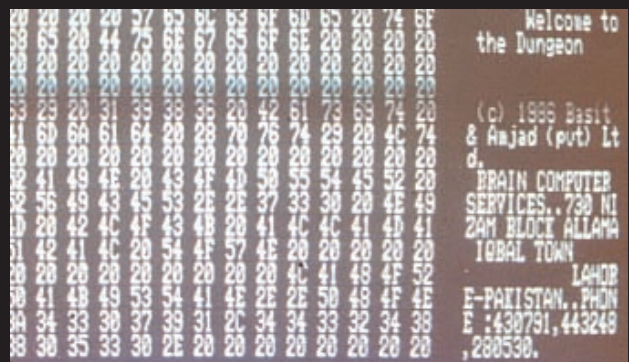
Image Credit: Shaggy (of ICE)

ANSI art uses the same basic principles as ASCII art, but using the character set of IBM's Code Set 437. ANSI art had a huge advantage over ASCII art because of the inclusion of certain dingbats, glyphs and block characters and the ability to colour them. ANSI art was really popular in the first few years of the 1990s, and there were clans that created ANSI art for public distribution. Each block on an ANSI artwork was similar to a pixel, and this image is by Ice, one of the most popular ANSI groups on bulletin boards in the early days of the internet. A lot of ANSI artwork still flies around today, often unnoticed. Just open up those .nso files using an .nso viewer when you find one.

# The First "Virus"

HISTORY

The earliest viruses to infect thousands of personal computers was the © Brain virus, a program that was not meant to be a virus at all. Three brothers in Pakistan, Amjad, Shahid and Basit Alvi had started up a computer firm in Pakistan in the early eighties. They first started by offering support to those who had purchased computers, as there was no such official mechanism in Pakistan at that time. Later on, they began to make software for some of their customers. They wrote a program for Doctors, and used an early form of DRM in the disks of their software. If the floppy was illegally replicated, the boot sector got corrupted, and a message flashed on the screen of the users. The message was a jovial call to contact the brothers (the phone numbers was included), to get a "vaccination" because of an "infection" (their customers were doctors remember?). Someone implemented the 3.5 KB file on a DOS disk, and the "virus" spread like wildfire, every time someone copied or traded an illegal version of a software. The Alvi brothers were bombarded by calls from all around the world, asking them to clear up the problem. Just when authorities were about to raise a fuss about the issue, they realised that the virus actually showed the scale of the rampant piracy - even in the early days of computing, and the fuss died down. However, this was not before Time magazine branded the virus as "Pakistani Flu" and published a none too flattering article about these "malicious hackers".



### For those who came in late

Muddled by so many terms used in the mag? Here's your short guide to the tech lingo

**RAID:** RAID - Stands for redundant array of independent disks, is a system where hard disks are used in different configurations for a range of data saving approaches, optimised for speed, secure storage and backup.

**Cloud:** A central online location of data (documents, images, multimedia files etc), as well as any application or engine that allows users to interface with the data.

**Beta:** Early trial versions of games, operating systems, applications or hardware, given to a select group of testers, our given to the public for testing.

**API:** Application Programming Interfaces are layers of protocols between an application and an operating system, or a set of libraries. Usually released to coders for software development.

**Interface shift**  
OpenSUSE to make KDE its default interface in upcoming releases

**Snow Leopard**  
The next release of OS X - Snow Leopard is ready for release

**Sinking ship**  
The Pirate Bay goes down following a court order or face hefty fines

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**ZOTAC GTX295 - a short review**

**thinkdigit.com** For more, visit [www.thinkdigit.com/d/38888/](http://www.thinkdigit.com/d/38888/)

23-03-2009, 04:54 PM

#1

amitash  
Intel Ocer

Al right, here's a short review of ZOTAC's GTX295 that I purchased.

**Join Date:** Feb 2008  
**Location:** Bangalore  
**Posts:** 894

**Packaging and contents:**  
The GTX295 comes in a neat and tightly packed box showing off all its specifications and the card itself through a window. You also get a free copy of Race Driver GRID. I would prefer ZOTAC including newer games like Far Cry 2 which they include with their GTX260 cards. Inside the box, the card comes packed in an antistatic and very firm padding so there's no chance of damage during shipping:



As for accessories, you get a molex to 6-pin and 8-pin connector if your PSU doesn't happen to have one. Also included is a HDMI to DVI connector, a free 3DMark Vantage, Drivers CD and surprisingly a free HDMI cable!

**Test Setup:**

For this review I shall be using the following system:  
Intel Core i7 920 @ 3.2Ghz  
, Gskill 6 GB 3 x 2GB DDR3-1600 MHz RAM, eVGA x58 SLI motherboard, 4. Zotac GTX295, Tagan BZ700 PSU, 6.

Dell SP2008WFP 20-inch LCD monitor



**Lets get cracking!**

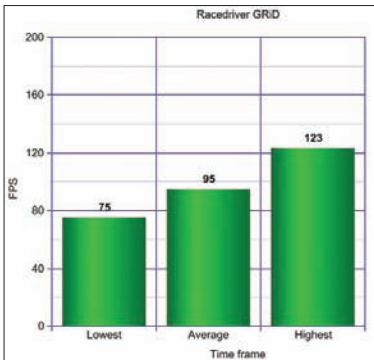
**Benchmarks:**  
**3D Mark Vantage**  
3D Mark Vantage is the latest benchmarking tool for PCs by Futuremark. This latest version

makes use of Directx 10 and NVIDIA's PhysX technology and returns a mean score based on CPU and GPU performance.

A very good vantage score for the king here.

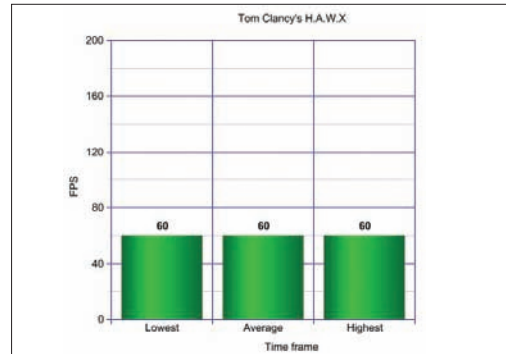
**Race Driver GRID**

GRID is a racing game by Codemasters, to date it is classified as the racing game with the best graphics for the PC. The game was played at the highest possible settings with the highest possible AA and AF settings through 3 races through the Nurburgring.



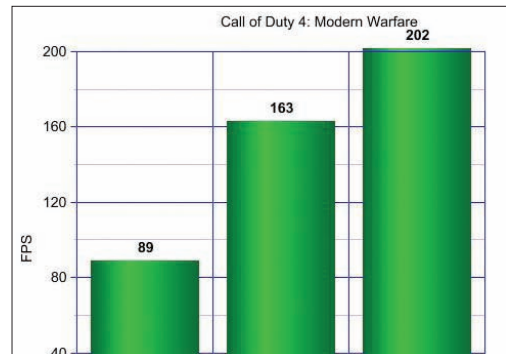
**Tom Clancy's HAWX**

Tom Clancy's HAWX is the latest edition in the acclaimed Tom Clancy series, this time you fly as ace pilot through an intriguing story line and the effects of modern warfare. Although the game settings were maxed out, I think there is an fps cap on the game at 60 fps so it was stuck at that through the entire run. The readings were taken in the Rio De Janeiro map.



**Call of Duty 4: Modern Warfare**

Call of Duty 4 : Modern Warfare was one of the biggest games of 2007 taking away most of the awards. It features very good graphics with an amazing multiplayer experience. The benchmark was done at the highest possible settings with maximum AA.



For the complete review and more pictures of the product, visit the forum thread at [www.thinkdigit.com/d/38888/](http://www.thinkdigit.com/d/38888/)

## Unusual pricing

Windows 7 to be sold cheaper in the UK than in the US

## No more Windows 7 RC1

August 20 was the last day to download Windows 7 RC1

## Google on Blackberry

Blackberry phones to get Google Apps synchronising features

Community



For more, visit  
[www.thinkdigit.com/forum/](http://www.thinkdigit.com/forum/)

# Readers' Meet

## Coimbatore



The meet went really great, We had 9 of them attending the meet (more than what I expected) and all of them were interested in technology and digit (tough both are synonyms!). We had a really big ice breaking session for almost a little more than half an hour. We shared a lot of things there, Then we started with the discussions of how can we proceed further etc.  
-Rajaram S, Coimbatore

## Gwalior



Digit Readers' meet held on 26th July in Mcdonald gwalior, we were 7 persons and everyone was eager to meet with other passionate Digit readers. We introduced ourselves and then we talked about Digit, skoar, IT awareness in gwalior and some personal skills. After that we filled our forms and then we took refreshment and then discussed a little more and picked up some goodies and then we met with new friends and great memories - Gwalior

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**Navigator Vx 140 (Rs. 13,990\*\*)**



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# Then and now

## Courtesy SKOAR!

**W**olfenstein makes a comeback after eight long years and we still play 'BJ' Blazkowicz. This time a supernatural theme clouds the game giving it a very sci-fi, fantasy look which may not strike a chord with gamers today. Initially Wolfenstein seems like a linear World War II shooter but within few minutes the whole perspective changes.

We start off on a Nazi warship where BJ discovers the 'Thule Medallion' that gives him special abilities. He discovers that the Nazi's Paranormal Division is up to no good (again) in a German-occupied city of Isenstadt where they have discovered the path to an alternate dimension called 'The Veil' which has the power of the Black Sun. If this power is harnessed properly, it can provide unprecedented source of energy to the Third Reich. BJ's gotta stop them, yet again, and all by himself.

The approach is fairly non-linear because of open-world characteristics of the game. We have the option to visit various regions of Isenstadt which has many enemy checkpoints, sewers, black-markets and

objectives along the way. Choose the sewers or rooftops to avoid the encounters with Nazi patrols or choose to use the veil to expose hidden ladders or doors which can provide a strategic advantage in battle.

Missions will make you traverse the same paths over and over again because objectives are generally scattered at edges of the map. The missions involve investigating different areas throughout the city and outside it for hints and cues that lead up to the finale. The levels vary from top-secret underground bases to highly fortified zeppelins floating high up in the air. Game offers multiple paths to a destination and there will always be a way to flank the unsuspecting enemy.

The medallion affects gameplay heavily as it wields four different powers that are acquired during the course of the game. With the click of a button, the entire look of the game transforms into a post apocalyptic environment with a heavy green tint to it. The four powers offer abilities like a shield from enemy fire; slowing down time; power to increase the damage of weapons and the last power which can increase your speed. These are acquired during the course of the game and can be upgraded to make way for additional functionality and same

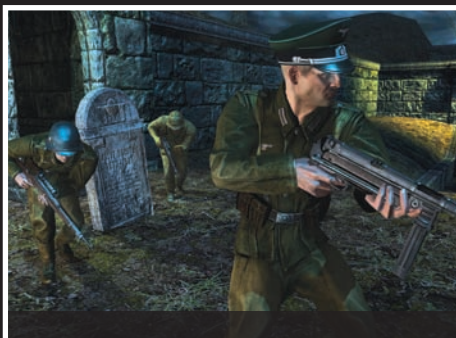
applies for every other weapon in the game. Normal weapons include your usual assault rifles like MF40/43, Kar98 but weapons that stand out are the particle cannon, tesla gun and flamethrower and they each offer a different Nazi-killing experience.

While compared to its competition, it does not really live up to their standards but it undoubtedly spares no effort in delivering an all-round mindless fun ride which involves lots of shooting, lots of blowing stuff up and lots of dead Nazis and something about an alternate dimension thing that you practically stop caring about towards the end because you are having so much fun destroying everything around you. So, Wolfenstein can take time to get into but once you get into it, there is no turning back. It is definitely worth a try. **d**

For the detailed review check SKOAR! Issue XXI, Sept-Oct 2009

## RATINGS

Platforms ..... Xbox 360, Playstation 3, Windows PC  
 Publisher ..... Activision  
 Developer ..... Raven Software, id Software, Pi Studios, Endrant Studios  
 Score ..... 7/10



## PROs & Cons

### Pros

- + Some freaky weaponry and special abilities at the players disposal.
- + Gorgeous visuals which make the city of Isenstadt look believable.
- + Haven for destruction, since Nazis liked to keep a lot of exploding barrels and wooden boxes.
- + Cheats unlocked after finishing the game giving all upgrades present in the game.

### Cons

- At 8 hours long, the campaign leaves a lot to be desired.
- AI could use some fine tuning.
- Upgrading options solely dependent on Gold collection. New players might completely ignore the option affecting the end result and end up missing out on what really Wolfenstein has to offer.





\*SKOAR!

Courtesy SKOAR!

**A**shes Cricket 2009, as the title suggests, isn't a game that's targeted directly at the Indian audience, but more towards England and Australia, who are currently doing battle in the Ashes series in England. But this is cricket, so whether or not it targets us, Indian gamers will definitely sit up and take notice, because, you know - cricket is a religion in India.

And sit up and take notice we should, because for all its faults, this is probably the most balanced and enjoyable cricket game ever made. Most cricket games in the past have got batting right, and Ashes does too, by making shot-selecting easy and intuitive, but still giving the player enough control over strokeplay. But where Ashes excels over past games is by nailing the bowling side of the game, meaning that no more will

you quit matches once you're done batting, because bowling and doing it well is just as fun as piling up the runs.

**Taking guard**

You have complete control over your batsman. You can play off the front or back foot, you can move around the crease, come down the wicket, and play defensive, offensive and lofted strokes. That means that you can pretty much negotiate anything the bowler dishes out, and the challenge comes in picking the right stroke and timing it just right. How well you're able to time a delivery depends on your batsman's skill as well as confidence level (more on the confidence bit a little later).

You also have the ability to play all around the wicket, but you can also be dismissed in every way conceivable. Running between the wickets works well for most part but there are way too many bugs that plague the running system.

Bowling can feel a little punishing at first, but you will soon realise that it's all about consistency and perseverance, particularly in the longer formats. You will need to take care of four factors to get each delivery right - delivery selection, placement, power, and amount of movement. Just choosing between in and out swing isn't enough. Pitching the ball in the right area and deciding exactly how much the ball should swing is the key to picking up wickets. Fielding is perhaps the least impressive areas of the game.

The confidence meter plays a vital role

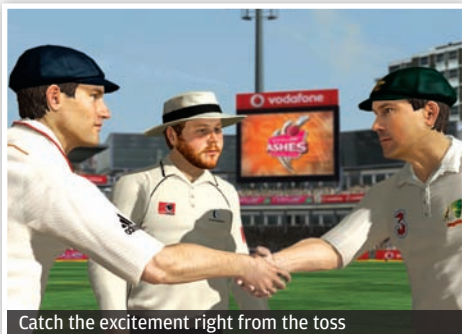
in both batting and bowling. A confident batsman is more likely to time his strokes as intended, while a hesitant batsman would edge and miscue his strokes. A confident batsman is more capable of negotiating subtle variations in pace and movement, which a batsman new to the crease may be susceptible to. In bowling, besides adding special deliveries to the bowler's repertoire, confidence helps in better placement, and makes it easier to hit the sweet spot on the delivery meter. It's a neat system, although confidence feels more important while batting than bowling, and the difference between a high and low confidence player are far more apparent when batting.

There is a fairly comprehensive tutorial and you also have modes like Test matches, ODIs and Twenty 20s. There's no doubt that Ashes Cricket 2009 is the most complete cricket game yet. It's well balanced, and it's the first game to finally get bowling right. The terrible running between the wickets in the PC version ruins the experience a bit, but against human opposition, many of the game's faults disappear. This is a great platform to build future games on because the core mechanics are solid, but there are too many little bugs and niggles here that keep it from being the great game it very well could have been. There's still a long, long way to go before cricket games can compete with the likes of FIFA and NHL, but with Ashes Cricket 2009, we're certainly moving in the right direction. **d**

For the detailed review check SKOAR! Issue XXI, Sept-Oct 2009



Watch your favourite cricket stars in action



Catch the excitement right from the toss

**RATINGS**

Platforms ..... Xbox 360, PS 3, PC  
 Publisher ..... Codemasters  
 Studio ..... Transmission games  
 Score..... 7.5/10

**PROs & Cons**

What we like  
 + Balanced gameplay  
 + Finally gets bowling right

What we hate  
 - Poor running between the wickets (PC version)  
 - Sloppy fielding

# Forget robots - programmable cells are coming



Edward Henning, Editor-in-Chief

**“I have long been opposed to genetic modification, mainly because it is such a hit and miss affair”**

**Y**ou may have caught recent news stories about some rather over-the-top statements at a conference to the effect that robots would in the future pose serious risks to humanity. There seems to have developed something of a pattern here, with some scientists - if they still deserve the title - drumming up fear, presumably to attract more grants for research. You can probably tell that I don't think these stories need be taken too seriously.

Another contender often cited as representing a threat to humanity is the grey goo that could result from self-replicating nano-bots getting out of hand and smothering us all. This all seems to assume that the creators of these devices will have the level of intelligence of a motor manufacturer that builds a car with a powerful accelerator, and completely forgets to install a brake. Not very likely.

But there is one trend in technology that I think could well pose dangers - this lies with what we might call digital molecular biology.

An old colleague once summed up the progress of modern technology quite neatly: “Once you can digitise something, you then have control over it.” I have often found this a useful way of describing the progress of computing. First, we managed to gain control over text, first in word processors, and a little later, databases. Simple numbers were next, with the rise of spreadsheets and the like. Next came simple graphics, sound, and more recently video. We have not yet fully mastered video - it is still often a very expensive procedure in terms of processing power, but we are well on the way to being able to edit and manipulate video as easily as we now can text and audio.

Next will be 3D and virtual worlds, and it appears, biology. There are two sides to this.

One is the development of biomolecular computers - computing devices made of DNA. The most impressive feat that I have read of for one of these devices was this: it was able to detect the presence of cancer in a test tube and dispatch suitable molecules to kill it. Imagine that mechanism packed in a virus-like shell and injected into the bloodstream of a patient. We are certainly moving in that direction, and quickly.

The other side of this development concerns what we might call the reading and writing of DNA information. Remember the huge fuss - and cost - just a few years ago when the human genome was first mapped?

One scientist recently stated that until a few years ago, improvements in gene sequencing had developed at a similar pace to silicon technology - rather like Moore's Law. However, recently, things have speeded up very dramatically - improvements multiplying by a factor of ten every year. Just a few years ago, the cost of (almost completely) reading the human genome was around \$3 billion. Today it is \$5,000, and falling fast.

So, we are not far away from cheaply being able to read entire genomes into a computer, manipulate them, and then write them back out into new DNA. Where might we put that DNA? Certainly into the virus package that should go and find cancer cells and kill them, and leave everything else alone. Enhancing a human egg will be the next step, and then somebody will also want to put it into an Ebola or HIV virus so that it will only target specific racial groups and leave everybody else unharmed. Any powerful technology can be used for both good and evil, from simple axes and knives to nuclear power and digital biology. But, I am more concerned about the possible mistakes that might arise from this technology.

I have long been opposed to genetic modification, mainly because it is such a hit and miss affair. New genes are crudely shoved inside a cell nucleus, and another gene put in there to start it up. The methods are very much blunt instruments. A living cell is such an incredibly complex system, as is the biosphere into which, say, a GM version of cotton might be introduced, that we cannot possibly predict all the effects that might follow. At least, we cannot be certain that ill effects will not occur.

Life is tenacious and powerful, and bad effects can cause enormous problems and suffering. If we introduce something into the biosphere that turns out to cause harm, it might prove impossible to contain. If we are approaching the stage where we can directly and easily manipulate the very coding, the DNA, that controls life, then the possibilities are enormous. The benefits could clearly be considerable, but are they worth the risks that would accompany them? Accelerating our own evolution might seem exciting, but how will we handle the risks of accelerated extinction?

A handwritten signature in black ink that reads "E. Henning".

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