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# An Apple a day... is not enough!

For quite some time now, the world has been app crazy, this isn't news to anyone. At first it was just Apple users going app crazy, because so few of us could afford those devices. It wasn't just the US and Europe that went Apple crazy, our annual Icons of Trust survey also had people ooh-ing and aah-ing over Apple devices, even though only a tiny minority owned them.

That's the power of being considered "cool" and "trendy", in your own words. After the runaway success of the iPod models, the iPhone was obviously going to sell like hot cakes. When the iPhone released, a lot of us were disgusted with our phones, I know I was – I wanted to break my SE K850i into 5 million pieces. The only thing that stopped me was the 5 million pixels the camera could click at, with a flash – which the iPhone just got, I might add.

Today's fashion is tomorrow's rags however. This was evident from market share reports from the US mobile industry, which showed that almost half of all mobiles sold were Android based! At one point it was over 50 per cent actually, but slowed a little towards the end of May.

Of course a lot of Apple lovers say this is just a blip, and the world will return to sanity in a year or so. But will it?

What Apple has never really been tested with, is competition that's also considered "cool". If there's one company whose services everyone seems to love, it's Google, and a Google vs. Apple (or Android vs. iOS.) is very, very different from Apple vs. Nokia, Sony Ericsson and the likes.

Apple has a very simple mantra to garner success – offer complete solutions. Macs were always cool, and hardware and software was always better integrated than with OSes and x86 hardware, but at the price of being stiflingly restrictive. Games, freeware and piracy contributed to Microsoft's domination of the PC, and ease of use and design has dominated Apple's hold over the high-end cell phone markets.

In India, we like to be able to choose, and to be different. Yes, even now a lot of us would

want an iPhone or an iPad, but we'd also really like to have, say, the option to upgrade said iDevice's storage. Since Google doesn't make hardware, with Android we get a hundred times more choice, across a whole range of price categories.

Even Windows cannot be completely discarded as a mobile operating system just yet. Thanks to regular and frequent updates in mobile hardware, courtesy NVIDIA, ARM, Intel and the rest – we're already seeing dual-core chips on phones. If the trend continues, you're going to see more multi-purpose computing devices in your palm, and that is where Microsoft and Windows shine – although I love both Android and iOS, give me a phone or tablet with the versatility of a laptop, and a battery that lasts a couple of days, and I'll never buy another smart phone! Would you?

Finally, it's the apps that maketh the market these days, and if there's one buzz word that works in India, it's "Free". With almost every app requiring web access to offer you any sort of real functionality, Google's web dominance will surely help Android. Despite having iAd to serve ads and thus enable free app developers to make money, Apple's advertising clout on the web is no match for Google, which makes all its money from advertising.

The fact that Android is open source also means more innovation for the platform, and as a result a freer hand for developers to try and capture our attention. The platform wars have just begun, and the next few years will be key to deciding on who will win. If strategies don't change drastically, I know who I'm putting my money on.



**Robert Sovereign-Smith**  
Executive Editor  
[editor@thinkdigit.com](mailto:editor@thinkdigit.com)

**"What Apple has never really been tested with, is competition that's also considered cool"**

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

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Silicon Power Stream S10 750GB  
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TAG Folding Mouse  
Silicon Power Blaze B10 32GB  
Zenith Rhodium  
Microsoft Arc Touch  
Epson ME900WD  
Kaspersky Mobile Security 9  
Iomega USB 3.0 64GB SSD Flash drive  
Creative T12 Wireless  
Portronics Scanny 3  
Kodak EasyShare Mini M200  
Philips SHB6110  
Lenovo Z570

### Photo Printer Test

Canon PIXMA iP4870  
HP DeskJet Ink Advantage K109a  
HP OfficeJet 6000 e609a  
Epson Stylus Photo T60  
Epson ME Office 82WD  
Epson L100

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WD Velociraptor WD6000HLHX  
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WD Caviar Green WD10EADS  
WD Caviar Green WD10EARS  
WD Caviar Green WD30EZRS  
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Seagate Barracuda LP ST2000DL003  
Seagate Barracuda XT ST33000651AS  
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Hitachi Travelstar HTS723232A7A364  
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WD Scorpio Blue WD7500BPVT  
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Seagate Momentus 7200.4 ST9500420AS

### SSDs

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Kingston SSDNow V 100  
Transcend TS32GSSD25S-M  
Apacer Turbo II Series AS602  
ADATA S596

### WiFi Routers

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Digisol DG-BG401IN  
SMC SMC7901WBRA2  
Buffalo WBRM-HP-GN  
D-Link DIR-524  
Linksys WRT120  
Buffalo WCR-HP-GN  
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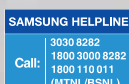
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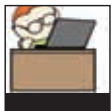
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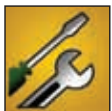
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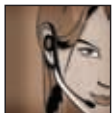
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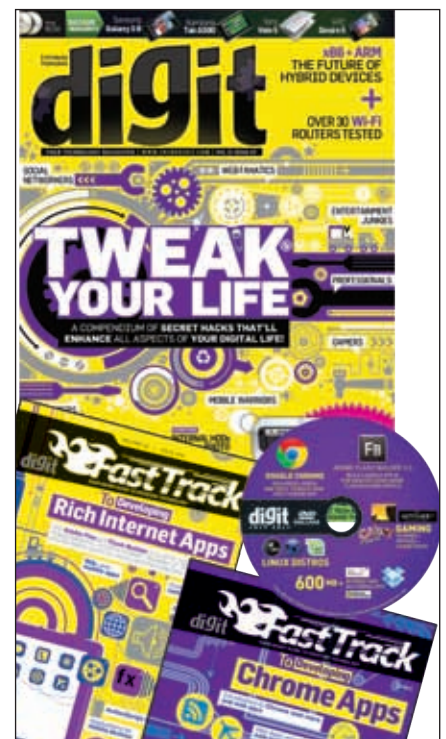
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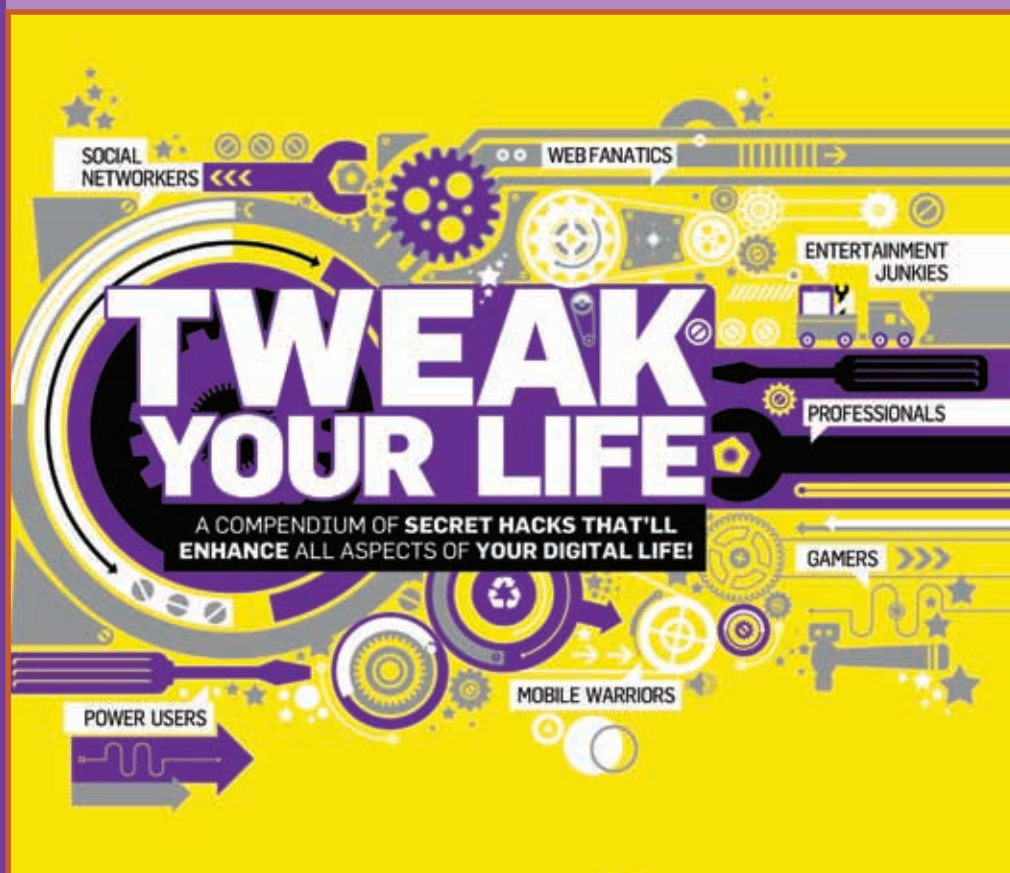
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- 030 TWEAK YOUR LIFE**  
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<b>Digital life</b> 26	<b>The best of both worlds?</b> The new generation of the best of both worlds	<b>Digitized history</b> The new generation of the best of both worlds	<b>Linkin Park's new milestone</b> The new generation of the best of both worlds	<b>Make up for sale</b> The new generation of the best of both worlds	<b>Best news</b>
 <p><b>ASUS Lamborghini VX7 Notebook</b> ASUS and Lamborghini team up once again for the ultimate performance. The new ASUS Lamborghini VX7 is a high-performance laptop with a 15.5-inch screen, 4GB RAM, and a 1TB hard drive. It's a perfect blend of style and performance.</p>  <p><b>Phil Pauley Bullet Superbike</b> The new Phil Pauley Bullet Superbike is a high-performance motorcycle with a 1000cc engine, 180km/h top speed, and a 120kg weight. It's a perfect blend of style and performance.</p>  <p><b>Nintendo Wii U</b> The new Nintendo Wii U is a high-performance console with a 1080p screen, 8GB RAM, and a 55GB hard drive. It's a perfect blend of style and performance.</p>  <p><b>Olive OGH</b> The new Olive OGH is a high-performance camera with a 12MP sensor, 1080p video, and a 3.5-inch screen. It's a perfect blend of style and performance.</p>  <p><b>Celcius X711 LeDiX</b> The new Celcius X711 LeDiX is a high-performance camera with a 12MP sensor, 1080p video, and a 3.5-inch screen. It's a perfect blend of style and performance.</p>  <p><b>V.I.O. POV HD camera</b> The new V.I.O. POV HD camera is a high-performance camera with a 12MP sensor, 1080p video, and a 3.5-inch screen. It's a perfect blend of style and performance.</p>					

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Latest technology news and emerging trends  
Read on to find out what went down in Taipei

## 086 Picture Perfect

If you had up to 10,000 to spend on a photo printer, which one should you buy? Read to find out

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Bootice 0.8  
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CleanPage

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Chrysanth Diary  
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✉ Although your anniversary issue is great, you guys concentrate on programming, coding scripts and there is no space for hardware lovers. I started buying Digit from September 2010 but I am reading it for a long time, by borrowing from friends. The devices you feature were really cool and I have tried almost all of them. Cover more hardware topics in the Fast Tracks. Your new DVD interface is super cool. You guys are really fantastic. Keep running the way you are, you people are the best.

Ali

✉ We try to keep a balance between hardware and software. The Fast Track is a beginner's to intermediate guide to technology, which is not really suited to hardware, as we cover that in our hardware comparison tests on a monthly basis.

Jayesh

✉ I want to give my feedback on your June issue. It's good and I can see the effort you've put in to make it happen. The final product is quite good looking. Let's take it one by one. Your future revealed: really good stuff, but I didn't find the look so good. How everything works: good choice of articles, these are the things I wanted to know, but the content provided wasn't enough. SKOAR: really good stuff. I think it should be given every month. Entertainment DVD: awesome DVD. I liked the collection of games and albums. Apps DVD: Linux part is very good but software are not up to the Digit level. Digit DVD: Panda antivirus was helpful, good to know that you have your own OS. Dev apps were good choice. All in all regarding DVDs there was one thing I didn't like. I felt the iPad interface was boring. Your previous interface was excellent. Why are you changing it? Fast track: both Meego and Ubuntu were really good. It helped me solve problems with Ubuntu. Thank you for that. At the end of the day, it was very good 8.5 on 10 from me or 4 stars.

Akash Manvar

✉ Now that's a detailed, step by step feedback, thanks for writing in. A lot of readers complained about the interface



being too old. We liked it too, because it was more user friendly, for even newbies to use. However, majority wins here unfortunately.

Sambhav

✉ I have been an avid reader of Digit for the past 5 months and I have been inspired by your approach to stop the piracy market holding its grounds in India. Keeping that in mind I uninstalled Windows 7 Ultimate Edition which was pirated and installed Windows XP Licensed version which I had.

Ankur Singh

✉ We glad you switched back to licensed software. Keep up the good work, and also remember to try out some Linux distros – the Digit OS in the June issue DVD for example.

Robert

✉ Hey team Digit! You guys rock! Hats off to your to your punctuality. I would like to give two suggestions. Digit is essentially read by students, home makers and people of various professions It'll be good if you dedicate 2, 3 pages of coding, covering basics and some tips and tricks for languages like PHP, Ajax, Java script,

Perl. This will be highly beneficial to students. Secondly why don't you cover a topic on careers in animation and networking they will be beautiful highlights Thank you

Shashank

✉ It's good to know you liked the issue. We cover programming in almost every issue under Developer's Corner. We also cover careers when they're applicable in the Work @ Tech sub-section.

Nash

✉ Congrats for completing a decade in the technology arena, being the best at every instance. I guess this month your inbox would be flooded with letters of appreciation, as you have proved yourself this time in every field – whether it be the rollover to visual style articles in the magazine, its contents, quality or the totally new fantastic DVD interface. But this letter is about transition – in Digit as well as in the lives all of its readers, including myself. Digit has grown from a technology navigator to the nation's technology platform. It has created awareness among us, and Digitized our lives. You must have also noticed that in these couple of years, more and more



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100% GENUINE



## Best Buy digital streaming

Simply called Best Buy Music Cloud, this new music streaming service from Best Buy requires you to upload your own music, and have iTunes

## Google halts Street View

Following objections from the Commissioner of Police, Google indefinitely froze its Street View project in India

open source has replaced pirated software, people are more alert of security in the cyber space and the technological revolution now carries the slogan of 'Go Green' with it. All this transition is being brought about to a great extent by you and as a result, a new vast community of intelligent and aware techies (of course, Digit readers) has been formed - no doubt it's members are called **'Digitians'**.

Manas Thakur

**d** We couldn't agree more with you. We've also jumped one spot forwards in the latest IRS rankings. Digit is now the ninth most read English monthly across all categories, not just tech.

Robert

✉ The anniversary issue was so spectacular, that I was spellbound to express anything. I had not expected such a beautiful total tech dedicated issue. Also I was relieved that you took my "Edward Henning" request to consideration as you published his article. What more to say the flipbook concept was admiring too. Crack The Code III was really puzzling but I managed to find the answers. The SKOAR! issue was also brilliant, although I wanted to have more games reviewed in retro gaming section. I could not understand why you and your whole team were using those funny surnames in your names. The "How Stuff Works" was just awesome and my whole family enjoyed reading it. You guys have made every person connected with you happier by this issue. I will be waiting for your next anniversary issue and will be thinking what you guys can do the next time. Love you Digit.

Ashish Badoni

**d** We are happy to know that you liked the June issue it was really special for all of us as well. It's good to know that your whole family enjoyed reading How Everything Works.

Robert

✉ Hello team digit, I am a subscriber, and this is my first letter to you. I really love Digit but it can be a lot better. I also sometimes pick up other tech magazines from

✉ I couldn't find the mag at the local stand and had picked up a copy of Chip. Then my attention went to the Digit cover, and out went all thoughts of smart phones, Chip & my silly life problems.

Applause to the design team for the design and placement of the mag and fast track. The How Everything works section was real cool. I especially loved the How Digit Works article. Make your own Chromebook article was useful and World View is a good addition. Using cartoons in articles was a cool idea that shined in the curious case, but went horribly wrong with Mario. Coming to the Fast Track, Ubuntu is a welcome change, and I'm happy that you've decided to rest your mission to make developers out of us (iPhone apps, Facebook apps, Android SDK, Meego apps).

Coming to the DVD, the retro games were awesome (I have a six year old PC). The full albums, movies and the OSes are a delight. Again, I think you guys have risen above the mediocrity of the previous disc content and delivered brilliantly. Oh, and Digit TV is wonderful. You guys got that spot-on. P.S: Siddharth rocks. P.P.S: "Inside Digit" episode was hilarious!

Unfortunately, it's not all ringa-ring roses in Digit Wonderland. Wit-

the stand and there's no doubt that your magazine has the biggest and the best collection of articles, but in some parts digit really lags behind from its competitors. I am really surprised that there's very little written/reviewed on software. To be very frank Chip has a better hand in this section. Once in a while I find reviews of software in your magazine, but that also only anti-viruses. In Tips & Tricks, you sometimes don't go with the title. For example Glary Utilities I found it was a part-by-part description of the software and how to use its features, nothing new. Digit has helped me in many ways that's why I'm writing this letter to you.

Pratik Ranjan Bhuyan

ness Copy Editing: Laziness Returns. There are typos, grammatical errors (no, I'm not talking about misplaced commas). And this when I gave the mag a quick look. It's thick as a tree so will take some time to read.

You guys could feature Digit humour in your "whatever happened to" section. Oh wait, you've removed that too. Ah the nostalgia-Gender Benders, Digit Diary, 30 days with...I wish you hadn't flushed these down. But I'm getting distracted. The standards of copy editing have dipped, your tongue-in-cheek humour is gone, dragging the mag from great to just very good. If you think it's a mute point, have a look at your previous issues (2006-2007) especially the Enter and Exit pages.

Well, that's it. Oh, I almost forgot- How the hell did you guys manage three magazines and two Fast Tracks in one month?! Did you go around Mumbai hiring like crazy?

Vartul Srivastava

**d** We didn't hire anyone extra in the Edit team. It's the same team that makes the issue every month, and a lot of us are still suffering the Anniversary Issue aftermath. A copy editor has just joined us, and language styles should improve drastically.

Robert

**d** Very valid feedback, and yes I agree with most of it. I've been having the same discussion with the team about Tips & Tricks. We simplified it for a while because of complaints from readers saying that they found the tips hard to follow, but I assume you will enjoy this month's cover story.

As for software reviews, we decided to stop doing comparison tests of non-critical software, because we were using pages up to tell you what you already know. We could test 20 image editors, but you know Photoshop for Windows and GIMP for Linux are the likely solutions... right? It's much more important to know how to use rather than what to use.

Robert









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**Booth babes!**

overclocking-tv.com has a whole gallery dedicated to just booth babes. Here's the url - enjoy!  
<http://bit.ly/dboothbabes>

**Digit's Computex coverage**

This is just the tip of the iceberg. Check out our full coverage on [http://www.thinkdigit.com/latest/computex\\_2011.html](http://www.thinkdigit.com/latest/computex_2011.html)

# Geekgasm at Computex 2011

Digit went to Computex this year and came back with some of the latest technology news, component announcements and emerging trends. Read on to find out what went down in Taipei...

Team Digit

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

Of the three big technology trade shows - CeBit, CES and Computex - the Taipei monstrosity that is Computex is perhaps the one that is most eagerly awaited by hardcore geeks. The reason is that Computex is all about computing; in essence you have the latest, fastest, flashiest and geekiest computer components on earth, under one roof, vying for your attention. Well, two roofs to be precise since Computex is so huge it requires two venues. Chew on these facts and figures to imagine the scale of what we experienced this year:

- 5 Days
- 125,000 attendees
- 1,800 exhibitors
- 5,300 booths
- Big names like ASUS, Gigabyte, ECS, Intel, AMD, NVIDIA and Microsoft
- 10,000-plus hardware ICT products

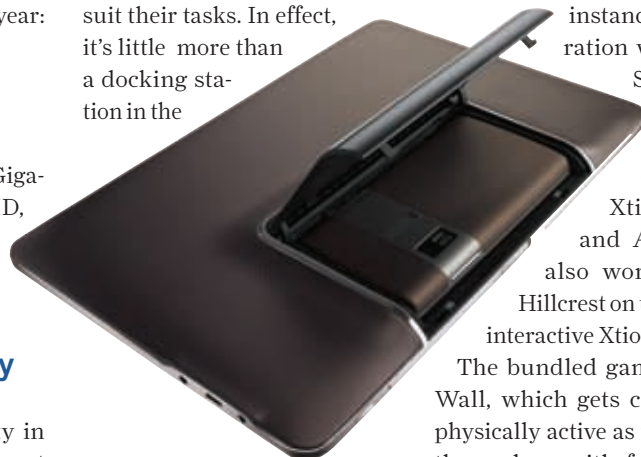
## The biggies display their wares

ASUS kicked off the party in style with one of the biggest announcements before Computex officially even began -



Bird's eye view of the Exhibition Floor

that of the Padfone. The ASUS Padfone is a device that explores one possible convergence between two popular mobile devices — the smartphone and the tablet. The Padfone solves the problem of data transfer hassles and multiple SIM cards / data plans when both a smartphone and 3G tablet are used. With the Padfone, the smartphone docks inside the tablet to give users an expanded view to suit their tasks. In effect, it's little more than a docking station in the



The ASUS Padfone converges smartphones and tablets

shape of a tablet, but hey, as far as announcements go, a good way to begin Computex.

We also saw the ASUS WAVI Xtion in action. It's a multi-component technology that brings motion control to the PC. ASUS has been working closely with PrimeSense in creating the core technology behind WAVI Xtion and the product also brings to the market a host of additional pioneering highlights. For instance collaboration with AppSide has resulted in the creation of Xtion Portal, and ASUS has also worked with Hillcrest on the highly-interactive Xtion Browser. The bundled game DanceWall, which gets consumers physically active as they enjoy themselves with family and friends, was developed by Softkinetic Studios.

ASUS announced a whole range of products in its Republic of Gamers series. The first among these is the new ROG G74Sx 3D gaming laptop, with a choice of quad-core Core-i5 and i7 Sandy Bridge processors, and the just-released Nvidia GTX 560M dedicated GPU.

The ROG CG8565 Gaming System desktop has a stealth fighter-inspired case, and comes with a 'Level Up' button on the chassis, to provide an "instant real-time speed boost." It features a choice of Sandy Bridge Core i7 processors, and comes with a Z68 motherboard, a GeForce GTX 590 for a GPU, and a ASUS Xonar for a sound card.

As for motherboards we saw the new ROG Crosshair V Formula motherboard (in markets now) that is based on the AMD 990FX chipset for the AM3+ socket, and comes with a graphical UEFI BIOS. It's the first ROG motherboard with AM3+ CPU support and



# Confused

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## Less cookies for the Dutch

The Dutch Parliament passed a law that requires a website to take permission from the visitor before storing a cookie on their device.

## Report: Violent games reduce crime

The incapacitation effects outweigh the negatives of aggressive behaviour stemming from violent games, a research has led to conclude.

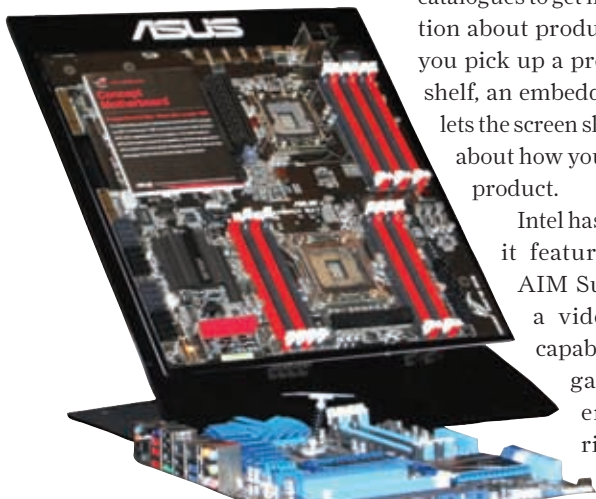
the first AMD motherboard to support 3-way SLI as well as CrossFireX multi-GPU set-ups. SupremeFX X-Fi 2 audio and Intel Ethernet with GameFirst technology round up the specs.

Next up are the new Intel Z68 chipset-based ROG Maximus IV Extreme-Z and ROG Maximus IV GENE-Z motherboards. Of the two, the Maximus IV Extreme-Z is the full-fledged ATX overclockers board, while the Maximum IV GENE-Z is the microATX version, perfect for case modders.

The two new graphics cards, the ROG MATRIX GTX 580 and dual-GPU MARS II/2DIS/3GD5, are both based on Nvidia GeForce GTX 580 GPUs, and both offer 19-Phase Super Alloy Power technology for better overclocking stability.

Amongst all the regular stuff, we also chanced upon the Danshui concept board based on a fusion of the X58 and X79 chipset while accommodating two processors; one an LGA 2011 socket and the other an LGA 1366! A small glimpse of the future right here.

The Danshui concept board features a fusion of the X58 and X79 chipsets housing both LGA2011 and LGA1366 sockets!



## Trend-spotting

One of the biggest trends was Android being ported to other devices, the most important from a consumer's point of view being networked HD media players. While cruising from booth to booth, we came upon several innocuous little booths featuring such products. Westin AmLogic Enjoy TV showcased its Android TV. It has USB ports on the side for attaching external hard drives, as well as an SD card slot. The device shows an Android FroYo user interface and it comes with a very unique remote control (Air Mouse), which you can wave in the air and see the pointer on the screen. The remote also doubles up as a QWERTY keypad which can be used for typing out long sentences by holding the remote control in the landscape mode. Why would you need that? Well the UI has a browser amongst other things.

The other trend was embedded systems. In addition to announcing its Atom, Ivy Bridge and Medfield plans, Intel showcased its use of embedded technology in the field of digital signage. While shopping at a mall the Kinect enabled signage system lets you interact with it using gestures to browse catalogues to get more information about products. Imagine you pick up a product from a shelf, an embedded RFID tag lets the screen show you more about how you can use that product.

Intel has not just that, it features the Intel AIM Suite which is a video analytics capability that can gather viewership metrics such as gender, age

and show on the signage how long a customer has interacted with the product. Not only does this add a novelty factor to the otherwise boring digital signages, it also gives the advertisers hard numbers which will give them an idea of their return on investments. You can also use your smartphones to receive e-coupons with special offers from the advertiser.

## Behind closed doors lies all the good stuff

As always at Computex, exhibitor's booths have this secret back room where only a few are invited. Yes, we're talking about the "NDA room" where products that the company doesn't yet wish to reveal to the general masses are showcased to a select few members of the media. On entering, you're first greeted by a big "no photography" sign board and a bevy of interesting products lined up along the wall.

The first NDA room we hit was CoolerMaster. The biggest object glistening under the glare of the lights was the humongous Cosmos II case. Almost like a cupboard, it features a 10-slot backpanel, 11 HDD bays, fan controllers, a carry grip and the works. We also saw the new avatar of the V8 CPU cooler with LCD and a vapour chamber cooler prototype.

We were also invited to preview a few products from ZOTAC. While we're not allowed to reveal too many



This was just to get your attention

details, ZOTAC has quite a few interesting products in store. One of them is the ZBOX VIA Nano. This little device, the size of a small box of Ferrero Rocher, is the non blu-ray iteration of the ZBOX (which we'd reviewed some months back, sporting the AMD E350 chipset).

The ZBOX Nano ships without an HDD but you can easily open up the device and add a laptop HDD. Speaking of internals, there are two versions of the Nano: One is based on the AMD Fusion APU while the other has a VIA chipset. The VIA one is the budget option. The Nano will come with a media center remote and the price is likely to be in the sub ₹10,000 range.

There was also the steroid injected version of the ZBOX (probably called XL) which features a GeForce GTX 480M integrated graphics card. The last thing showcased in this enclave was an "HDMI wi-fi" technology for streaming HD content wirelessly to a screen from the ZBOX. But we doubt they'll name it that though. Let's wait and watch. **d**



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<sup>1</sup>Based on personal colour printers as defined by IDC and shipping as of June 2010 as measured by volume (WXDXH) using manufacturers' specifications or as measured by operational "A4" size. <sup>2</sup>Energy consumed based on competitive TEC measurement results found at [energystar.gov](http://energystar.gov) and [eu-energystar.org](http://eu-energystar.org) for single-function colour laser printers as of June 2010. TEC based on mono pages in mono print speed. Individual product configuration and usage will affect power consumption.

# Google Refines Search; Halts Street View in Bangalore

Google has come up with yet another advanced feature called Instant Pages that predicts the link users wants to use and begins fetching its data – even before the user has clicked on the link. The new feature, expected to save 2-5 seconds on search query time, is based on Google Instant, which furnishes search results even before the user has finished typing the query or pressed the enter key. This feature is likely to be included in the newest test version of Google Chrome browser.

Apart from Instant Pages, Google has also unveiled two more major updates to its search engine – Google Voice Search and Google Search By Image.



Voice Search allows users to search by just speaking the search keywords. The feature will be available to Chrome users initially. Currently, only English vocals are accepted. Google expects to support other languages in the near future.

Google "Search By Image" enables users to search for images by just dragging a sample image to the search box. Understanding your request,

the search engine goes on a quest for similar images. Google, however, has made it clear that the new image search feature won't support face recognition technology.

A little earlier in the month, Google also unveiled flight schedule search. Ever since news of Google's acquisition of ITA, last year, we were wondering when we'd see something in the flight search domain.

Google insists that it didn't use ITA technology for the new feature, so we should wait and see what that will bring. Perhaps, even richer flight options and searches, as well as price searches.

Now, all you need is to decide on a destination, and when you enter a simple query such as 'flights from [source] to [destination],' you'll get non-stop flight schedules, or a summary of daily flight details. A full timetable is available as well, in a link entitled "Schedule of non-stop flights." Multi-city flights aren't supported yet. The feature will also allow users to see all the destinations possible from a particular airport, by searching for 'flights from [source].' For now, though the service has been launched globally, it's available in ten languages – English, French, Italian, German, Spanish, Dutch, Brazilian Portuguese, Polish, Russian, Turkish and Catalan.

In other news, Google was compelled to halt its ambitious "Street View" campaign in Bangalore after the local police raised objections on the move. Almost three weeks ago, Google's Street View cars started driving around Bangalore to take high definition images to provide users a 360-degree view of streets. Reports said that the local police raised objections to this data collection. Confirming the news, Google said that it was scrutinising the letter issued by the Bangalore police and has grounded the fleet until the matter is sorted out. ■

## Fake Microsoft Updates for Firefox Users

Homely masks are becoming more common than invisibility cloaks in the world of cyber-crime, and from fake anti-virus software to malware warnings, we've now reached a stage when a malicious script is masquerading as a Microsoft Update. These are just a part of what experts like to call "social engineering tricks," scareware preying by deception.

Firefox users on Windows can be directed via a pop-up warning to a page that is the spitting image of the

Microsoft Update page. What's different, however, is that the particular Microsoft Update



displayed requires the use of Internet Explorer. Unwary

users can proceed to download some nasty stuff, if they decide to install the so called urgent update.

For now, the only safety is being a wary customer in the face of pop-up warnings and notifications. Do also check for security certificates displayed by your browser on secure, signed pages. With all this going around, we can't help but feel the future of security is a bit bleak, and perhaps the combination of common sense and a good anti-virus package won't be enough. ■



## iKisaan on Airtel

Airtel digital TV is first DTH player to offer rural interactive service with the launch of iKisaan.

## Twitter automates link shortening

The automatic version of its URL shortening service, t.co allows users to paste lengthy URLs

Web Watch

# Exploiting Chrome Web store features

The Google Chrome Web store provides a great platform to feature and sell applications online. Here are the key components to ensure a great listing:

- **Categories:** Placing the application under the appropriate category will make it easier for users to find it and also help feature it in related searches. Up to two categories can be chosen, out of which one of the category will automatically be selected under the navigation breadcrumb.

- **Screenshots and Videos:** It's a good idea to put up 4-5 appropriately sized screenshots to show users how your app works, and get potential users familiarised with your app's interface. The screenshots should be the best visual elements of the application and must give an overview of its look and feel along with sample data, if applicable. You can also put up a snappy video to highlight salient features of the app.

- **Icon:** The icon serves as the identity of the application and creates an instant visual association with the application. In this a transparent padding is kept on all sides of the icon.

- **Verified Domain:** The Google Web Master Tool provides



domain verification that acts as a certificate of authenticity and instill trust in the user to make the purchase.

- **Short Description:** Include a short description to explain the function of your app and why it's exciting within 132 characters.

- **Customized Header Background:** The background of the header can be customised to enhance the identity and branding of the application. The background image can complement the overall listing while making allowance for the

buttons in the bottom for install and other buttons.

- **Full Description:** A detailed description can be provided via the Chrome Web Store Developer Dashboard to include all relevant information, features, links, compatibility information and keywords. This searchable description can also include whether the application is free or paid and its pricing.

- **Version Information and Last Updated:** All release and update information can go here to let users know if the application is fresh.

- **Promotional Images:** Promotional images can be provided here so that if the application is featured on the Web store, its image is displayed to promote it. An application without a single promotional image is unlikely to be featured.

- **Chrome Web Store Badge:** This badge can be displayed at all web portals to let users know that it is available in the Chrome Web Store.

We recommend the Fast Track to developing Chrome apps for a better understanding of the Chrome Web Store.



# Ching's Secret

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Soups, Sauces & Miracle Masala  
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## Appcelerator releases Titanium Studio

Appcelerator has released Titanium Studio for developers; updated its Mobile SDK to v1.7

## New malware removed from Android Market

Whether Google plans to start screening apps before listing remains unknown

# iOS 5 due soon

Apple had quite a bit to announce at the developer event, from the new and improved iOS 5, to the iMessage and the iCloud storage services, all of which spell handy new features for iOS device owners. iOS 5 is scheduled for release in the American Fall, and shall be compatible with the iPhone 4

magazine and newspaper feed subscriptions; improved Twitter integration, with native support for single sign-in and image tweets; Safari Reader feature for image free browsing, and Reading List bookmarking feature; tabbed browsing; improved Reminders, with location based reminder, and synching; new touch camera



and 3GS, iPad 1 and 2, as well as the iPod touch 3G and 4G.

New features of iOS 5 include a new notification centre with lockscreen notifications; the Newsstand, for

button on lockscreen; new shutter function for volume up key; new long-press for optimisation; new image editing options; new split onscreen keyboard; synching, activation,

and updating all sans PC, all wireless and on device.

Also introduced, scheduled to come along with iOS 5, is iMessage or Apple's BlackBerry Messenger (BBM) counterpart. Just like BBM, the service is exclusively for iOS device users, and is meant for instant messaging, sharing photos, videos, and contacts. Delivery/read receipts and typing indication are part of the deal. Push notifications across iOS devices will also be enabled, and group messaging is also planned. The app will work over

both Wi-Fi and 3G. Next up, is iCloud, considered by some to be the biggest new feature of iOS 5, iCloud is Apple's cloud storage solution, which according to Steve Jobs, "stores your content in the cloud and wirelessly pushes it to all your devices. It automatically uploads it, stores it, and pushes it." It is expected to release alongside iOS 5 as well.

Lastly on the handheld front, Apple, also announced that MobileMe is on its final legs, and no new enrolments are open; the service would be shut down completely on June 30th, 2012. **d**

**A lot happened this month in the world of tablets and mobiles, especially at home. We take a brief look at the many happenings, which have included surprise India-launches of the HTC Sensation and Galaxy S II, new form factors with the Asus Padfone at Computex, and the exciting quad-core Tegra 3-powered Sony NGP. First, however, let us check out Apple's WWDC 2011 event.**

## More than a handful

June was an exciting month for Android mobile phones in India, with the dual-core flagships Samsung Galaxy S II and HTC Sensation making an entry at the ₹32K mark, and the HTC Wildfire S

and Salsa (the first of the Facebook Phones) landing at around ₹15K and ₹22K respectively. These phones continue the trend of HTC bringing

devices very soon after their global launches in the Indian market, with the Sensation and Salsa actually landing in India before many major markets in the world. The Galaxy S II and HTC Sensation now fight head-to-head for the dual-

core/speed-demon crowns, with the LG Optimus 2X also technically a part of the match-up. The iPhone 4, launched at the end of May, is also available,

and while it can't really compare it terms of sheer clock speeds, still provides stiff competition with its impeccable usability.

Nokia launched two dual-SIM dual-standby dual-band handsets in June – the Symbian Series 30-based Nokia X1-01 music phone at less than ₹2,000, the Series 40-based Nokia C2-00 at less than ₹3,000. Both phones are expected to provide large battery life as well. Also expected very soon are the Nokia E6 and X7-00 phones in India, with the former (Touch & Type QWERTY business



phone) actually listed for pre-order on the Nokia India site, for ₹17,999.

Notable launches among the Indian brands included the Froyo-based Micromax Bling 2 fashion phone for ₹9K, and the Alcatel ICE3 OT 806 D low-radiation handset, which recently won the

"Most Impressive Radiation Free Handset" award at the FIEO Telecom Technology Awards event, with one of the lowest specific absorption rates of any mobile phone from a major brand in India. **d**





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## Nokia to earn from Apple

A lost patent tussle requires the fruity giant to pay Nokia millions of royalties

## iPad 2 jailbreak out soon for iOS versions

Chronic Dev Team is delivering iOS 4.3.3, while others are expected to deliver iOS 5

# Launch pad

Not much has actually happened on the tablet front in India at the time of writing, with no actual launches since the Acer Iconia A500/W500 and iPad 2. However, some announcements, as well as listings on online retailers, hint that quite a few should arrive soon. Official announcements include the Samsung Galaxy Tab 10.1 (10.1-inch Honeycomb-based tablet expected in July), the Motorola Xoom (10.1-inch Honeycomb-based tablet expected in July), and the RIM BlackBerry PlayBook (7-inch QNX-based tablet expected in late June). Also official for July

are four MSI tablets, including three Android offerings – MSI WindPad 100A, and the low cost Enjoy 10 and Enjoy 7 – and one Windows - based tablet, the WindPad 110W.

Unofficially, the 7-inch Gingerbread-based HTC Flyer has also been listed on online



retail sites for a little over a week when this was written, with no officially announcement following. It however is expected very soon, as HTC has been bringing mobile devices into India much earlier than expected.

On the global tablet scene, the Asus Padfone concept was shown off – a phone that has a

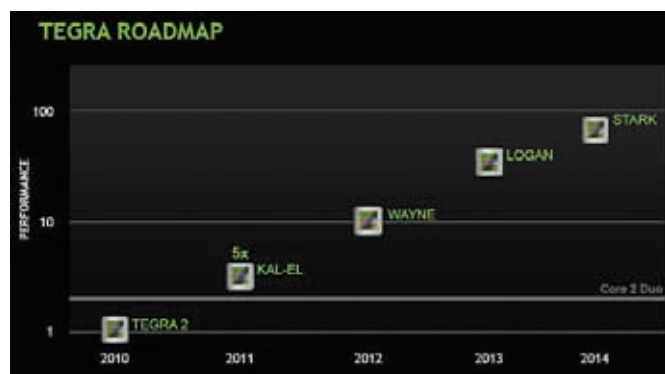
dock in the form of tablet shell. The phone bears a four plus inch display, and when in the dock, powers the tablet – providing the processing power and interface, while the tablet shell runs off its own battery. The device is expected only in Q3 this year, as is the Huawei MediaPad, a tablet that distinguishes itself as the world's first 7-inch Android 3.2 Honeycomb tablet. The device in our minds also distinguishes itself as the first Honeycomb tablet not to run on the NVIDIA Tegra 2 processor, like all other such tablets so far – instead, it runs on a dual-core 1.2GHz Qualcomm Snapdragon processor, we presume a part of the MSM 8260 chipset featuring the Adreno

# Going next generation portable with the Tegra 3

The Sony NGP is shaping up to be a real top-notch portable gaming console, and has created some major excitement and a bucket-load of anticipation with fans waiting for it to arrive late this year. Expected to deliver graphics at par with the PS3, the NGP bears the NVIDIA Tegra 3

‘Kal-El’ processor, which has a quad-core CPU and 12-core GPU. Meant for both tablets and mobile phones (and the NGP), the Tegra 3 is supposed to outperform the current-gen Tegra 2 by up to 5 times, and even outperform Intel's not-so-ancient Core2Duo desktop processor!

NVIDIA released a performance demonstration



video which awed the world with its real-time dynamic lighting effects, something that no other chipset in the market even the iPad 2's graphics can offer. Sony NGP's pre-E3 2011 three video game-play previews also showed impressive performance, with games such as Wipeout, Uncharted: Golden Abyss, and

Sound Shapes. Other games announced were Hustle Kings, and Super Stardust Delta, seen in the screenshots.

The videos also showed benefits of dual-analog sticks on the device, apart from the large 5-inch 960x544 OLED touchscreen, rear touchpads, and even the front-facing camera. **d**





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**800 GB SSD**

SanDisk has introduced a mammoth 800 GB SSD aimed at the enterprise sector

**Adobe Flash Catalyst**

This is Adobe's tool that lets you create user interfaces for rich internet applications

## SSDs: The future of drives

9.9 Media's IT Next magazine, in association with Kingston Technology Corp., a leading maker of solid-state drives, or SSDs, drew an enthusiastic response from senior IT managers and CIOs alike, reflecting the growing popularity of SSDs among enterprise users

**T**he hard drive has come a long way from its original two-part avatar where one spun the disc and the other took care of the read-write mechanism. It's come so far from that mid-previous-century model, in fact, that today there are drives that don't spin at all.

From a growth perspective, market researcher IDC, which last year forecast "tangible" levels of growth within the solid state drive (SSD) market until at least 2013, expects SSD shipments will achieve a compound growth rate of 54 per cent over the 2008 to 2013 forecast period.

### HDD: Bottleneck

Two of Kingston's engineers visited India and spoke to IT managers and CIOs, at the IT Next

roundtables, and sought to spread word about the latest exciting possibilities with SSDs.

The tremendous improvement in the performance of processor chips, from the early Pentium series to the most recent Intel i7 series, has left the hard disc way behind, said Sammy Hsu, a Kingston Technical Resources Group engineer, based in Taiwan.

"The hard disc is the bottleneck," Hsu said, at the event, in explaining the advantage of the SSD, which could provide much higher access speeds in comparison with the conventional hard drive. "To get the 4,000 IOPS we would need 95,000 rpm," on the hard drive, "which is ridiculous," he said. "If you want to achieve such speeds, only SSD is the option," he added.



The SSD, available at capacities ranging from 64 GB to 512 GB, also offered considerably more resilience to such things as laptops falling and sustaining damage in the increasingly mobile world of most corporate users, Hsu said.

### SSD: The solution

The SSD elegantly replaces the conventional hard drive's magnetic components with non-magnetic, optical and electrical components. Further, it does away with the moving parts of the hard drive and instead offers a combination of a 'flash' memory device and a 'controller.' The SSD offers considerably faster access times in comparison with the hard drive, Hsu said.

These solid-state drives, with no

moving parts also offer better resilience against vibrations and temperature changes, he said. Kingston's NAND-based SSDs are available in both 2.5 inch and 1.8 inch form factors, and include products such as the 100E series that come with built-in security encryptions.

Upgrading to SSDs could mean a significant increase in the efficiency of an enterprise user's laptop, for instance, Hsu said. This could come in terms of the time taken for the notebook to boot, or launch an application and so on. Modern SSDs also come with programs that allocate new data writing to the particular chip within the drive that has been least used, for instance, and help ensure that the SSD doesn't wear out easily.

They can also be equipped with programs, on the control, that will clean up unwanted files during idle time, or in the background so that the next time a user needs space or needs to access important files that are heavy, chances are, an SSD equipped notebook will make him wait a lot less than the conventional drive. **d**

## Adobe's offering for a richer experience

**A**dobe recently organised a briefing session for the developer community to share more information on their latest product offering – Flash Builder 4.5. Adobe has released several major updates since launching this useful software suite about 12 months ago.

Adobe team members Srihari Palangala and Vyshak Venugopalan demonstrated how you could create and deploy an

app across popular platforms such as Apple iOS and Google's Android to even BlackBerry's Playbook – all in under 5 minutes! The demonstrated was live on actual devices that included the iPhone, iPad and Samsung's Galaxy Tab.

With the latest update, Adobe has now supports development, testing as well as deploying AIR applications across the above mobile and tablet platforms.

### What's new in Flash Builder 4.5

This latest update from Adobe gives you a templatised environment so that you don't have to worry about code details, and MXML, ActionScript and CSS is inserted as pre-defined blocks straight into your code. In fact, there are over 100 templates that you can choose from. With Quick Assist, you have access to code-related operations. To get help with code, all you need to do is press Ctrl + 1.

Also, with Flash Catalyst CS5, interaction designers can view projects and collaborate with designers working on other products such as Photoshop and Illustrator, while still monitoring

Flex projects. In addition to this, Catalyst provides improved code generation, supports resizing of the UI, and ensures isolation between user interface controls and design modifications.

Finally, Flash Builder 4.5 also has a version aimed specifically at PHP developers. The integration of Flash Builder 4.5 and Zend Studio 8 lets you streamline your development process so that you can build web and mobile applications using Flex and PHP. The suite also includes an integrated installer, new project wizards, improved connection to PHP services, and joint debugging workflows.



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## ASUS Lamborghini VX7 Notebook

ASUS and Lamborghini team up once again for the stylish VX7 notebook. The VX7 sports NVIDIA's 3GB GeForce GTX 460M GPU, which is a first for notebooks. Featuring a 15.6-inch display with a 750GB HD and eight-cell battery, the VX7 is very well loaded. With jaw-dropping design and looks, a price tag of ₹97,896 (\$2,188) shouldn't burn too big a hole in your pocket.



## Olive O6HD

If you have a rather large collection of CDs and music files and storing them is proving to be a nightmare then the Olive O6HD music server is for you. Tagged as an audiophile's dream, the O6 can store upto 6,000 CDs or upto 20,000 HD songs. All of this can be controlled using a 10.1-inch touch display or the iOS app from Olive. The music server includes wireless-N networking, ethernet, HDMI and USB ports. Get yours for only ₹2,23,686 (\$4,999).

## Celsius X VI II LeDIX Tourbillon Mobile

Before we give out specs and details about this phone let's get one thing clear, its price – ₹1,34,23,875 (\$300,000). Well, we warned you; reading ahead is at your discretion. Made of Grade 5 titanium, the Celsius Tourbillon has 600 mechanical parts, 330 of which are for watch movement. The unlocked version is a triband GSM phone with a 3.2MP camera and has a 2.2-inch OLED screen display.





## LinkedIn India's new milestone

LinkedIn has reportedly hit the 10-million member milestone in India

## Hulu up for sale

The popular video streaming site is gearing up for a sale with Yahoo being a rumoured buyer

**Drool maal**

## Phil Pauley Bullet Superbike

If you've always fancied riding a superbike that literally flies on the road, there's good news for you. Designed by Phil Pauley, this superbike houses a compact jet engine, a tail fin and four short wings which ensure a standard speed of 300+kmph, along with a one foot lift in the air. Let's not get into the price of this one!



## Nintendo Wii U

The second instalment of the much-awaited Wii console from Nintendo was finally unveiled at E3. The Wii U controller has a 6.2-inch touch screen, microphone, gyroscope, accelerometer and a front-facing camera. Much to the confusion and rumours, the controller itself is not a gaming device and needs its console to perform. Price not announced yet.



## V.I.O. POV HD camera

Another entrant into the highly clogged handheld HD camera category is a point of view camera by VIO. Meant for adventure freaks and sports enthusiasts who want capture their stunts in full 1080p glory, the VIO HD camera is rugged enough to take on an outdoor terrain. Shoot your next POV viral video by spending a mere ₹26,803 (\$599).



**Apple violates laws**

Apple under scanner for violating competition laws in India for restricting sale of iPhone to only two operators

**Violent games reduce crime**

According to a paper by Centre for European Economy research and University of Texas, violent video games are a factor in reducing crimes in US

# Mobile computing

## Best of both worlds?

Siddharth Parwatay

siddharth.parwatay@thinkdigit.com

Consider this – you have a few important emails to send and the battery life indicator on your notebook is in the red. “15 minutes remaining”, it warns nonchalantly while you hit panic mode with no plug point in sight. Try whatever power management tweaks you may, but realistically you know in your heart that the notebook won’t be with you for more than ten minutes. What do you do? Nothing really, other than gnaw at your fingernails till you’re left with stubs for fingers.

Unless of course your notebook was a hybrid computing device, like one that’s based on Cupp Computing’s PunkThis module. In this case, you could easily flip a switch and instantly start working on an ARM-based OS, like a modified version of Android 2.3 and make the same battery last for eight hours. How? We’ll get to that in a bit, but first a background for those who came in late.

### The story so far...

The two operational scenarios we described above (PC on x86 and Android on ARM) are the result of two distinct underlying platforms that have been at war for sometime. Thus far both factions of this brewing war have had distinctly marked out territories with x86 dominating the performance market, and ARM resulting in shipping of unbelievably large quantities of chips for embedded systems and portable devices.

The x86 architecture which is used by Intel’s processors was designed with some specific goals in mind – performance and manufacturing scalability. Microprocessors from Intel that are descendants of the 8086 chip developed in the late seventies are all part of the x86 family. The architecture was quickly adopted and was responsible for the demise of many processors of that era. Even Apple toed the line

While the impending ARM v/s x86 battle looms on the horizon, there is perhaps some middle ground being eked out; a truce of sorts. Read on to find out how we may be able to have best of both worlds soon and how the mobile computing landscape may change.



The one that sired them all

eventually by dropping IBM’s PowerPC architecture in favour of the strides Intel was making year on year. This is what makes Intel dominant in the PC and server space, but not in the mobile space because of the huge power consumption demands of the chips.

ARM’s architecture, on the other hand, was focused on low power consumption right from the beginning. Chips based on ARM’s IP and version seven instruction set are brought to market by various chipmakers including Qualcomm, Texas Instruments, NVIDIA etc, while for x86, Intel has competition from AMD. As for the ARM architecture’s shortcomings? It doesn’t do so well with multi-tasking and high performance tasks.

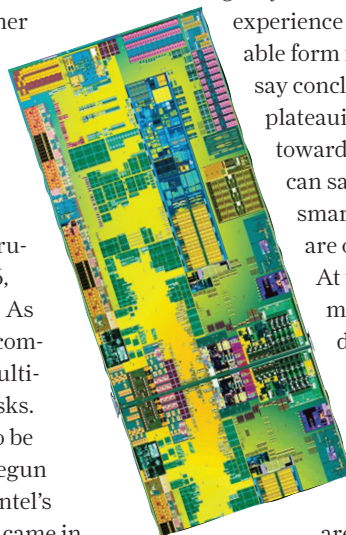
PCs, initially, weren’t meant to be portable and have only later on begun to focus on power management. Intel’s biggest stride in the mobile space came in the form of its Oak Trail platform released

recently. Last month at Computex we saw Oak Trail tablets from the likes of ViewSonic which have better performance in terms of power consumption – about eight hours – though not nearly as much

as ARM-based tablet devices.

So what do we have now? A whole bunch of generic names for devices – MIDs, ultraportables, Pocket PCs, Smartphones – and the lines between them are constantly blurring, as their functions converge. The ultimate goal is to

give you as complete a computing experience as possible in a portable form factor. While we can’t say conclusively that PCs are plateauing or even heading towards a decline, what we can say with certainty is smartphones and tablets are on an upward swing. At the same time, no matter how converged devices become, people aren’t carrying that one ‘all powerful’ device yet. Function-specific devices are still what works for most people. Can you



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## AMD discontinues endorsement of SysMark

AMD discontinued the endorsement of SysMark 2012 Benchmark since it claims their results are biased

## Pentax mini lens

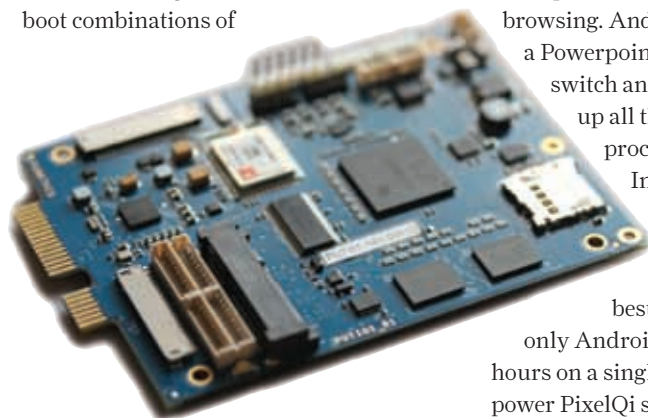
Pentax introduces small size interchangeable lens

think of keeping your notebook at home on an important business trip? Nope. This brings us to the scenario we painted for you at the beginning.

What if we could use low power and low performance systems for specific tasks on the same machine? Do you really need a Core i7 when you're just checking mails? The answer is no, but x86 based CPUs cannot throttle down so drastically. Hence the need for hybrid devices.

## Enter Cupp Computing with its PunkThis module

At Computex we came across a nondescript booth with a MacBook and Asus Netbook on which something was being demoed. Curiosity got the better of us when we noticed the MacBook was running Android. Now, Android on Macbooks isn't a big deal and neither is dual boot combinations of



PT Module

various kinds. What caught our eye was that at the demonstrator's beck and call the OS was instantly switching between Mac OS X and Android!

Hybrid or Multi-Mode Computing allows scalable and task specific computing; that is, the correct processing capacity for the task. This allows much greater functionality to be integrated into a standard PC architecture. Security, Always On and Context Awareness are growing trends with Computing and difficult to accommodate on a standard PC. The other side of the coin is that today's smart devices (phones and tablets) lack the utility of the general purpose processor that the PC provides. Thus making productivity difficult with these devices. "The future lies in the closer integration

of platforms. As we develop our platform we will weave these platforms into a more seamless "single environment," said Omar Nathaniel, President – CTO, CUPP Computing.

This switchable scenario is made possible by an SoC module having an ARM processor that fits into your x86 platform based netbook's 2.5-inch SATA hard drive bay. In the module, you get a 1GHz TI OMAP DM3730 ARM processor paired with 512MB of RAM, a Mini PCIe SSD slot to replace the host storage and shared flash memory for both systems.

In essence, PunkThis offers the ability to combine a low power consuming ARM processor with a full-fledged PC experience offered by a high performance Intel x86 processor. The idea is simple: switch instantaneously to the Android OS when performing simple tasks such as

browsing. And should you need to make a Powerpoint presentation, flick a switch and you're in Windows using up all the precious wattage and processing power you require.

In a mixed usage scenario, a Punked system can run on Android for about 20 hours at a stretch. In the best case scenario, it can run only Android for a mind-boggling 40 hours on a single charge (with another low power PixelQi screen mod). As of now, at a price of around \$200, it's certainly steep for a mod. But as Nathaniel said, CUPP would be releasing a reference platform in December. Further to which we suspect economies of scale that come with mass manufacturing may bring this price point down considerably.

A reference platform that is essentially open, will result in some interesting designs and customisations from OEM and ODM partners. Besides this, the SoC module as part of a desktop enclosure has its uses for developers to test apps on. As a stand-alone computer it can be used as media centre, terminal or connected device. When used in conjunction with a desktop, PunkThis provides an ideal instant on, low power system to check mail and surf the web.

Developers gain the ability to target the ARM v7 code base on physical hardware while retaining the functionality of a desktop environment.

## What's next?

All of this sounds promising but could there be game changers in the offing that could make even this hybrid format redundant? The x86 v/s ARM platform war has seen a lot of twists and turns. Intel keeps making announcements about better low-power consumption processors for mobiles but analysts believe they still have a long way to go. Meanwhile, ARM with its eagle core Cortex A15 is talking of quad core 2.5 GHz speeds, 20 nm manufacturing, virtualisation, and server-scale computing. We see the two warring factions making inroads into each other's territories here.

Also, because of the close association between x86, Intel and Microsoft, even the platform is popularly called Wintel. The latest twist came at CES 2011 when Microsoft announced that the next generation of Windows will be compatible with ARM chips. With this announcement, x86 loses its biggest ally and the Wintel banner may finally fall.

The new version of the world's favourite OS will work with natively-compiled ARM code and would require some work with respect to drivers, controllers, IO buses etc. But proof of concept was seen. Could Windows 8 then be the OS of choice for today's landscape where

demands on computing systems is high and portability, power efficiency is a must?

With Eagle core chips (or those even further down the ARM roadmap) we could have

full computing devices that are Windows based, powerful, run cool and the best part; have battery life in the region of 40 plus hours. Also, if it's Windows playing ring-master the rest of the players in the ecosystem – application and hardware peripheral makers – will easily toe the line and dish out software and drivers for the instruction set very quickly.

Whatever the outcome, it'll be interesting to watch how events unfold. **d**



Arm Cortex a15





# MIX IT UP

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Are there multiple iPhone or iPod players in your house? Now everyone can get a charge. Introducing the dual-dock (Octiv™ 202) for iPhone & iPod. It does everything a docking speaker does multiplied by two! Charge up and Rock out to your choice of music. With the free Music Mix app you can now shuffle songs from both players and seamlessly share each other's music without skipping a beat. Plus, its wedge design fits neatly on you desk, kitchen counter, and other tight spaces. Best of all, the Altec Lansing name means a crisp, clear sound to put your groove.

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## hear what's next™



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# Social networking - Taming the 'essential' beast!

We all spend several hours on it, but do we really know how to make the most of it?

Vishal Mathur

[vishal.mathur@thinkdigit.com](mailto:vishal.mathur@thinkdigit.com)

**L**ove it or hate it, there really isn't a way to ignore it. Social Networking (read Facebook, Twitter, and then some) has made a space for itself in our lives. Here are some tips to help you slim down, widen out and secure your entire social experience.

## 1 MULTIPLE SOCIAL NETWORKS, IN ONE APP

Facebook, Twitter, Google Buzz and Foursquare – all networks available within one app. TweetDeck helps save time, integrates multiple timelines into one, and makes replying less of a pain. Download for iOS devices, Android, PC, and as an add-on for Google Chrome. Download- <http://www.tweetdeck.com/>



Get your social networking feeds at one place

## 2 TWEAK WHO SEES WHAT ON FACEBOOK

Facebook's privacy settings, by default, aren't very secure and some tweaks will make your profile a lot more secure. Click on the Account tab on your FB home page. Go to Privacy Settings > Sharing on Facebook settings > Customize settings. Here you can set who can see what on your profile (relationship status, posts, photos, etc.), who can, and what all should be completely hidden.



Tweak your security settings on Facebook. Select visibility from four options- everyone, friends, friends of friends and customise. The customise setting lets you select exceptions such as a list of friends.

## 3 SECURE FACEBOOK

In the account settings, you get two critical settings, which we suggest you should enable. First is "Secure Browsing (https)" and the second is "send me an email when an unrecognised device tries to access my account". These will be found in Account > Account Settings > Account tab > Account Security.

## 4 VIEW YOUR PROFILE AS A FRIEND

With privacy settings it gets really confusing who can see what. So Facebook lets you see how your profile looks to a particular friend?

Go to Account > Privacy settings > View settings > View my profile

## 5 VIEW PHOTOS THE OLD SCHOOL WAY

Don't like the new photo viewer on Facebook? You can quickly revert to the old one. Open the first picture in a series in a new tab you will go back to the traditional method of viewing pics.

## 6 GET RID OF UNUSED APPS

Any apps you may have downloaded but aren't using anymore, do pose a risk to your data. Delete them! Click on the Account tab on your FB home page, go to Privacy Settings > Apps.

Select each app, and define what data it can access, or delete them completely.

## 7 IM THE NEW HANGOUT ZONE

While IM wasn't really considered an integral part of social networking, it has now joined the party. For BlackBerry users, the BlackBerry Messenger (BBM) rocks. The rest of the smartphone community can use WhatsApp on their phones. The messenger gets registered via the sim-card, and instantly connects to everyone on your contacts list who is registered on WhatsApp.

## 8 TAGGING MULTIPLE PEOPLE

Got a post that may be interesting to a bunch of friends? Tag them in that post itself. To tag, write "@" and then the friend name. You will see the name get highlighted in blue once the tagging is complete.

## 9 REPLY BY MAIL

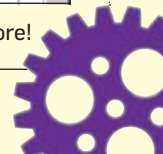
Whenever a Facebook friend sends you a message, or comments on your pictures, it also shows up on your email inbox provided notifications are on. You can reply to that from the email itself and the comment will be added to your tagged photo. If you aren't getting these mails, activate email notifications in the account settings. Psst this is a great way to get around office-wide Facebook blocking.

## 10 SHORTEN URL AND SAVE CHARACTERS

If you post quite a few links on Twitter (and even Facebook), better get a URL shortener extension for your web browser. Once installed, click on the icon, copy the shortened URL into the post and voila! Save characters and time. Download <http://goo.gl/WFwhv>



Make use of short URLs to share more!



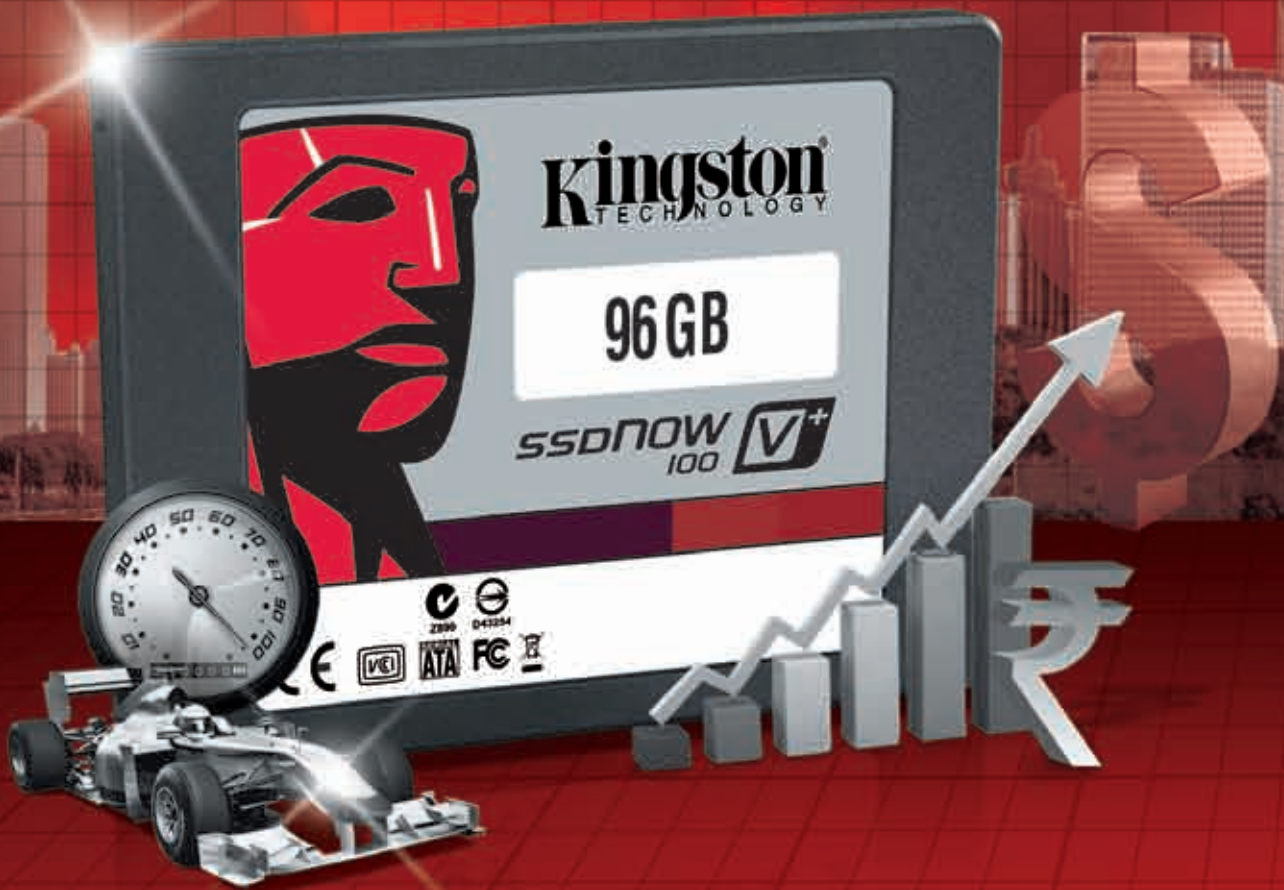


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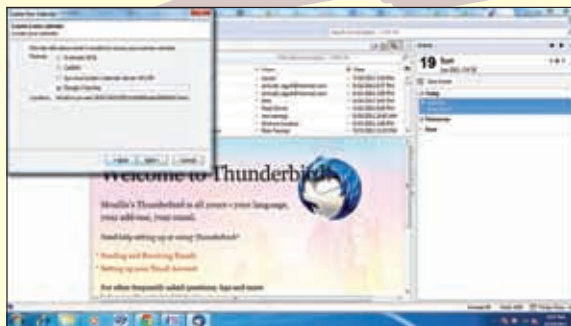
# Tweaks for the Professional

We cover some interesting email, scheduling and spreadsheet tweaks that you could benefit from – earning yourself money by saving time!

Nash David

nash.david@thinkdigit.com

**B**e it commercial products such as Microsoft Office, or open source ones, productivity suites needn't be limited to your office desk. We look at how you could enrich your life by using some productivity tools.



Sync your Google Calendar with your Thunderbird client

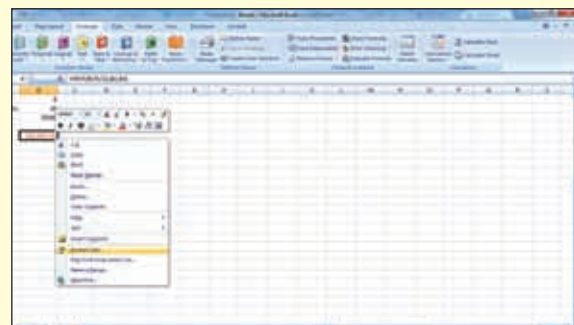
up tab, they should enter their respective mobile numbers and Google would send them a confirmation code. They need to enter this code and their set up will be complete. This is a one-time setting. Now, for each task that you set on the Calendar gets pushed as an email or text message by Google Sync, for free! In fact, the others don't have to login to a computer. We recommend using Google's SMS/email notification to the fullest so that you never miss out on anything important event.

## 14 LOANS. GULP.

Whether you have a bike, car or home loan, if you have taken the loan at a fixed interest rate, and you have fixed your tenure, then you don't have to rely on EMI calculators. You can build one yourself. You need three quantities: the interest rate (generally specified as per cent per annum), repayment tenure, and the loan amount. Type these in three cells. In the cell where you want to know the monthly instalment, simply type out the following formula:

=PMT(<cell specifying interest%/12>,<cell specifying tenure in months>,<cell specifying loan amount>)

In our case, we had considered an example of a bike that costs Rs. 75000 (cell B3) with a loan tenure of 36 months (cell B2) at 8 per cent per annum (cell B1). You can calculate your



Don't let an agent fool you with instalments

EMI with the following formula:

=PMT(B1%/12,B2,B3)

To understand the way loan instalments are calculated, verify this formula with any online EMI calculator. One example is at [bit.ly/emi-calc](http://bit.ly/emi-calc). If you want to change the currency from the default dollars to Indian Rupees, right-click on the cell, click Format Cells. In Number tab, with Currency selected, click on the Symbol drop down and select Rs. English India.

## 11 COMMUNICATION AND EMAIL

It's a popular myth that Outlook doesn't have plugins, or doesn't let you chat and be casual, because in addition to commercial and free plugins, you can also augment its functionality by using macros.

### Xobni for Outlook

If you use Outlook to manage your email communication, install the Xobni plugin, and you'll have access to Facebook, LinkedIn, Xing, insightful statistics about your nature of interactions with your contacts and much more, without even accessing a browser. If, you don't use an email client, and are wondering which one to choose, we'd recommend Thunderbird. Go to [www.getthunderbird.com](http://www.getthunderbird.com) and download the 9 MB executable for Windows and you'll be up and running in a matter of minutes.

## 12 CALENDARS AND TO-DO LISTS

Undoubtedly, Outlook provides you with a better Calendar / Organiser to manage your tasks. However, Thunderbird has some useful plugins too. You can use Lightning and Google Calendar for Thunderbird. To install these plugins, simply go to Tools > Add-ons. In the get Add-ons tab, search for Lightning and install the application from the list. Next, install Provider for Google Calendar. Restart Thunderbird once for the changes to take effect.

Now, go to Events and Tasks > Export. Save this ICS file on your computer. In your Gmail/Google Apps accounts, go to Calendars. On the left bar, you would see your Calendar name. Below the name are two options: Add, and Settings. Click on Settings, and import the ICS file from your computer. In your Google Apps/Gmail page, go to Settings and select Calendar Details. Scroll to the bottom of the page. Click on the XML icon next to private address and copy the address.

In Thunderbird, go to File > New > Calendar. Select On the network and pick Google Calendar. Paste the XML link you just copied here and click Next. You may modify the name of your calendar if you choose to, but proceeding works fine too. Enter your Google login details, and you're done.

Now your tasks and events would also stay up-to-date! You can then select SMS notifications from Google as your default settings.

## 13 AUTO REMINDERS

You can even set a reminder for your family members, and Google would send an email or text message to each person subscribed to the Calendar. To set up each mobile, your family members would have to go to their individual Calendar settings page. On the Mobile Set



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# Mobile Warrior

Presenting useful Tips, Tricks and Tweaks for your tablets, phones and notebooks to enhance your life on the go

Anshuman Sanghvi  
anshuman.sanghvi@thinkdigit.com

## 15 TAG ADDRESSES ONTO GOOGLE MAPS

On the road and need driving directions to a list of authorized phone service outlets in your city? All you need to do is point your browser to



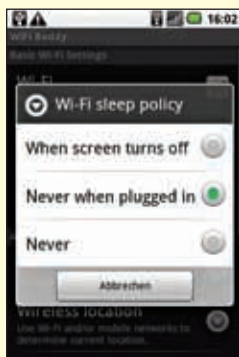
batchgeo.com and you are good to go. Batchgeo maps all the addresses from a spreadsheet onto a map using Google Maps with markers.

## 16 USE GOOGLE VIA SMS

Text message your search query to 9-77-33-00000 and get back your search results via SMS. To use Google Calender, register your mobile phone by going to [google.com/calendar](http://google.com/calendar) and completing Settings > Mobile Setup. You can also get RSS feeds and news updates using the Google SMS Channels service. <http://bit.ly/YPTLf>

## 17 CONSERVE BATTERY

In most mobile devices battery consumption is especially high when services like Bluetooth, GPS, WiFi, App syncing, background data services etc are left on. Turn them off whenever they are not in use. A major cause of battery drain is in the process of establishing a signal and signal reception. Try to cut down talking/messaging when



underground, inside elevators etc., to prevent your phone dying on you within just a day.

## 18 FOR MORE JUICE

On laptops another major culprit for battery drainage is the LCD screen. Minimize the screen's brightness and use black themes since maximum power is used in displaying a bright white screen. Keep your devices out of a heated up car and other such places.

## 19 TYPE FASTER WITH DOUBLE SPACES

On Android, BlackBerry and iOS, instead of typing a period (.) at the end of each sentence, you can just double-tap the space bar. It will enter a period followed by a space.

## 20 GET FASTER NET CONNECTION

If you are at a location that has difficulty accessing your default DNS, using a different one (such as Google's 8.8.8.8) can improve your surfing speeds. For your WiFi connection, check the option to "use static ip" to enable the manual entry of a DNS in network settings. For a 3G connection, load the sim card into your modem/dongle and change the DNS on your PC/laptop through the advanced settings of your connecting software.

## 21 UNLOCK PATTERN TROUBLE

If you have forgotten your unlock pattern, here's what you can do: normally, after repeated failed attempts, your device should ask you to enter your Google Account info as an alternative way of letting you in, after which you can turn off pattern locking or set a new pattern.

## 22 DESKTOP-LIKE BROWSING ON MOBILE

Many sites serve up mobile optimised versions on Android. A quick work around is to make the browser identify itself as a desktop agent instead of a tablet or smartphone. In most tablets, go to browser settings, go to advanced and change the user agent string setting there. In some browsers, you need to write about:debug where you enter the web site address and then proceed with the above steps. For BlackBerry, fire up the browser and go to Menu Key>Options>Browser Configuration>Browser Identification> and select Firefox or Internet Explorer.

## 23 MORE PLACES TO GET YOUR ANDROID APPS

Apart from the Google Android Market, there are many other android markets to get your apps from, and some apps are unique to these particular markets. Check them out: SlideMe, AndAppStore, Handang, AndroidGear, Phoload, Mobihand, AppsLib, Insyde Market, NetDragon, KUQU, Noverca, GetJar etc.

## 24 ROOT YOUR ANDROID DEVICE TO GET MORE

Rooting your phone will give you superuser/root access so that you can make all kinds of changes directly to the system. There are a plethora of apps that work only when your phone is rooted. We warn you though, that doing so will void your warranty and if the procedure goes wrong, you may end up with a useless phone. An exact how-to is beyond the scope of this tip but you check out a pretty good guide here <http://bit.ly/fHtGp2>

## 25 MANUALLY KILL APPS TO FREE UP RESOURCES ON IPAD

Ever wondered how to force quit an application on your iPad? Here's how- Hold down the Sleep/Wake Button on the top. Wait for a red slider to appear. Don't slide it. Let go of the Sleep/Wake





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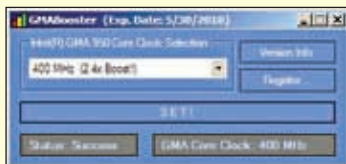
Button. Hold down the home button and the app will force quit. Give it a try.

## 26 TAKE A SCREEN SHOT OF YOUR IPAD SCREEN

Ever wondered how to show what you see on your iPad to others? Click the Sleep/Wake button on the top right corner of your iPad, and while holding it down, hit the home button. You'll see the screen 'flash' white and hear a 'clicking' sound. Now open the Photos app and you will see the image thumbnail.

## 27 BOOST YOUR NETBOOK GRAPHICS

Yes, a graphics accelerator for your netbook! GMABooster is a small, lightweight program that overlocks or underlocks your onboard Intel



GMA 950 graphics card allowing it to run at a faster or slower frequency. It offers upto 2.4x performance boost. This will be especially useful when playing HD videos or for playing games and saving battery resources on a lean netbook. Get it here <http://bit.ly/uLqDF>

## 28 RUN APPS NOT COMPATIBLE WITH YOUR BB MODEL

When running some apps that are not designed for your BB phone, they usually launch but with the keyboard in constant view along with the touchscreen acting as a trackball instead of a touchscreen. To fix this go to Options > Advanced Options > Applications and then highlight the app and press the menu key. Select Disable Compatibility Mode. Now the app will fill the screen and the touch screen will work like it should. Note: this tip works with select BB devices only.

## 29 CONNECT YOUR ANDROID DEVICE TO MAC OR LINUX

Google's Android Honeycomb OS uses the Microsoft MTP protocol for connecting via the USB port to a system. If you're worried about how to connect

your Android device to a Mac or Linux PC, you will have to use Android File transfer and Android SDK for Linux, respectively. <http://bit.ly/3jNWwL>

## 30 GET BLACKBERRY INFO

Hold down the [ALT], the cap key and [H] at the same time, to get the Help Me! screen that lists version, app version, PIN, IMEI, uptime, signal strength, battery level, file free, and file total. Try it on your BlackBerry phone.

## 31 USE YOUR BLACKBERRY INFO IN A TEXT

In a message, type the following and then hit space to get the relevant information: mynumber - this inserts your phone number; mypin - this inserts your BBpin number; myver - to show your device model and current OS version, or app version. Helps doesn't it?

## 32 REBOOT YOUR BLACKBERRY

If your device is acting slow, you can do a quick reboot to free up resources. Press left [ALT]+ right [CAP]+ [DEL] buttons simultaneously to reboot your BB.

## 33 PRINT ON THE GO

If you have a device that supports HTML5, then on any of the following software - Chrome browser, Chrome OS, Gmail for mobile or Google Docs for mobile, you can directly print the content on it to any printer using Google Cloud Printing. For a quick tutorial on



setting it up, go here - <http://bit.ly/hJy3tV>

## 34 RUN ANDROID APPS ON THE RIM PLAYBOOK

The RIM Playbook supports BlackBerry apps as well as Android apps natively without any third party software. For BB phones, as of now, there are certain virtual machine software that are trying

to make this work, like Alien Dalvik that will enable android apps on Symbian, BlackBerry and a host of other platforms.

## 35 CREATE A UNIFIED FRIEND STREAM ON YOUR BLACKBERRY

Create a unified profile of all your contacts from Facebook, LinkedIn etc with Super Address book (free and pro versions). with names ranked by importance complete with profile images etc. Get it here - <http://bit.ly/i2la0D>

## 36 BACKUP AND SYNC

A one stop solution to sync and backup your pictures, videos, files, contacts and calendar online is using the OpenSource service Funambol. The data can be synced between a number of mobile platforms, tablets and PCs. Get the android app on the DVD. Also check out other paid services: dashwire.com, vuphone.com for Android - <http://bit.ly/LTL0KY> For BlackBerry - <http://bit.ly/hwUTHu> for Symbian - <http://bit.ly/jgzAIL> For iPad/iPhone - <http://bit.ly/mCRGg9>

## 37 TAKE SMARTER PHOTOS

Google Goggles launches the phone into camera mode and when you click a picture, it will try to make sense of it. Addresses and contact info of landmarks are searched, visiting cards are automatically made into contacts, text is not only optically recognized but also translated etc.

## 38 USE YOUR NETBOOK FOR SURVEILLANCE

Dorgem, an open-source program allows a computer to detect motion via it's webcam, and take pictures of whoever passes your computer. The most useful feature that the program possesses, is that the images taken can be uploaded to a FTP server, just in case the Netbook was stolen, or some violent crime took place in front of your laptop. Its support is discontinued but its available for download at <http://bit.ly/10Us2o>

## 39 STAY CONNECTED TO OFFICE ON THE GO!

You can setup your phone to be connected to the VPN so that you can always access your work



data wherever you go, as long as you have an internet connection. A Virtual Private Network extends the concept of a LAN network over the internet in a secure way. Most android phones <http://goo.gl/AFwvk> and iPad <http://goo.gl/RZXQW> have VPN support)

#### 40 PROTECT YOUR BLACKBERRY

The BlackBerry Protect app will help you lock your phone with a password, locate your lost phone on a map and wipe its entire content in case of theft. It also makes your phone ring loudly in case you misplace it and also displays a message on the homescreen with instructions on how to return it to the owner. It supports backing up all your contacts, memos, bookmarks, messages etc automatically over Wi-Fi and restore it when needed.

#### 41 MANAGE YOUR TRAVEL

This is the ultimate mobile warrior tool for a BlackBerry user. It has several features including the automatic trip scanning that will

recognize itineraries that are emailed to you and push them to your BlackBerry – no matter where you booked, the ability to identify gaps – like a hotel stay that ends a night earlier than it should – and to make recommendations which you can book right from



your BlackBerry. If your flight's delayed or your connection changes, BlackBerry Travel will automatically push notification alerts to your device to keep you informed.

Other tools also included are currency converter, weather forecast for your destination, local search to find what you need and the BlackBerry Travel Web Portal, you'll be well-prepared, even for multi-leg journeys. Get it here – <http://bit.ly/i8gzDT>

#### 42 FLASH ON YOUR IPAD

Can't see the stock ticker on a website on the iPad because it renders in Flash? Complete your

#### DID YOU KNOW?

You can change the colour of your BB phone trackball after downloading the colorpearl app.

browsing experience on the go by getting the iSwifter app that claims to enable Flash content for the iPad. Now Flash video and Flash based games too should be within reach. There's also a list of supported games and sites that you can check when you install the this app.

#### 43 READ PDFS AS BOOKS ON YOUR IPAD

If you have loads of PDFs that you want to read as books on your iPad, you can convert them into the ePub format by using a software called Calibre (on DVD, <http://bit.ly/85LAPD>). It also lets you download metadata and covers for the pdf. To get a complete tutorial of how to do this, go here – <http://bit.ly/9Wnsgk>

#### 44 PLAN YOUR PERFECT TRIP

To find information of flights, hotel bookings, restaurants near you, street level view of your destination etc you can download the TripAdvisor app for your iPad or iPhone. Location aware content along with maps and photos of your destination are also available. <http://bit.ly/liIvsa>

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SEBI  
HSBC  
NSE  
Barclays  
Stumpp Scheule  
GE Money  
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## 45 USE AUGMENTED REALITY

Layar is a mobile app for discovering information about the world around you. Layar displays digital information called "layers" into your smartphone's field of vision. Just use any of the numerous layers

## 46 SHARE DATA ON THE GO WITH A FLICK

You can share any kind of data such as media, bookmarks, contacts etc with simple gestures like dragging or throw n' catch to nearby recipients using Hoccer. It doesn't require any account set up or additional hardware, since it works on a technology called lincer that will work on any kind of internet connection. Get it here - <http://bit.ly/g8LI89>

## 47 LEAVE MESSAGES FOR FRIENDS AT ANY PLACE

Want to set an alarm reminding you of a task at a certain spot? Or send

your friend a surprise message on his/her arrival? With SpotMessage+ you can send a message designating a spot with Google Maps. Your friend will then get the message once he/she arrives at the spot. Get it here- <http://bit.ly/mz7bYT>

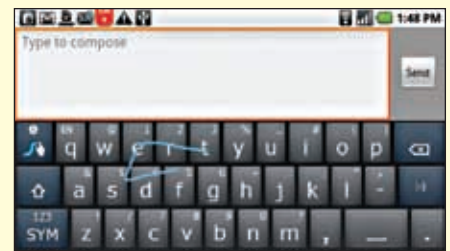
## 48 USE YOUR 3G CONNECTION WITHOUT A USB DONGLE

Use Wireless Tether to tether your phone's internet connection over Wi-Fi with your laptop/netbook. This way you don't need to buy a separate 3G USB dongle. Some Android phones already

have a WiFi hotspot option by default. For the rest, there's Wireless Tether. It is one of the best arguments to root your android phone. Get it here - <http://bit.ly/gB6GxJ>

## 49 SWYPE TO WRITE

Swype (available on iOS and Android) is a keyboard input method for touchscreen phones that allows you to drag your finger from



one letter to another. It traces a line as your finger moves from key to key and finally writes the word. Although its not available on the Android market, it comes bundled with some Motorola and Samsung devices. As for other brands get it here - <http://bit.ly/9GECnN>

## 50 OVERCLOCK YOUR ANDROID PHONE

You can get enhanced performance on your phone by overclocking your android CPU in resource intensive processes like watching HD videos or gaming. On the other hand you can underclock your phone to get more battery life and run your CPU at a lower speed. This app also requires root access to your phone. get it here - <http://bit.ly/gYhrIN>

# Entertainment Junkie

If music, video or just pure unadulterated fun is what you like this section is for you. Read on to amplify your life!

Jayesh Shinde

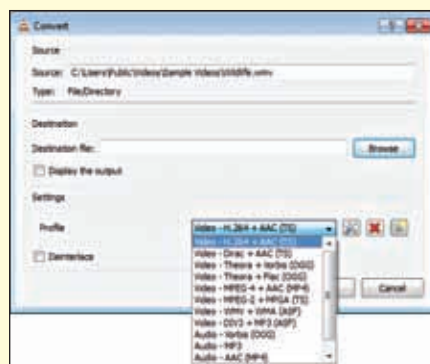
[jayesh.shinde@thinkdigit.com](mailto:jayesh.shinde@thinkdigit.com)

## 51 VIDEO CONVERSION WITH VLC

If you have VLC installed on your computer, you don't need any other special software for converting (transcoding) videos into different file formats - VLC can do that for you just as well. Here's how: Open a video file in VLC Player and go to Media > Advanced Open File. In the subsequent dialog box, click on 'Select Play mode' dropdown and select 'Convert'. In the next screen, click on the profile dropdown to select the output video's file format. It's as simple as that. Now you can sit back, relax and start controlling your movies from your couch.

## 52 REMOTE CONTROL YOUR PC WITH VLC

How great would it be if you didn't have to get off your seat to control VLC while watching a movie? Just look up "VLC Remote" for your iOS, Android, or BlackBerry device, download and install.



We tried it on an Android phone and it worked like a charm. Obviously, your PC needs to be connected to a network to try this tweak. In VLC go to Tools > Preferences and along the left column tick the 'All' radio button under 'Show Settings'. From there click on Interface > Main Interfaces and select 'HTTP remote control interface' under Interface Module. If it doesn't auto-detect your PC, manually enter the IP address and port number (8080) in the app's settings panel. Enjoy the good life.

## 53 AUTOMATICALLY FETCH SUBTITLES FOR MOVIES

Here's a little gem of a video player you probably haven't heard of - SPlayer. It's a lightweight open source video player that pulls subtitles for your movies automatically from the Internet - and it does that really well. What's more, the player also lets you tweet what you're watching. A minor gripe: the player is mostly made for a Chinese audience and its English localisation is haphazard at best.



## 54 MINILYRICS – LEARN YOUR SONGS

Imagine how easy it would be if you could read and sing every song you play in Winamp (or any other popular media player) without having to open a website every time? Enter MiniLyrics, a long-sought but little known solution for this irritating problem.



Install the MiniLyrics from this issue's DVD, and enable it from the player's console settings panel. You'll need to be connected of course.

## 55 PLAY PRACTICALLY ANY SONG ON EARTH

Even if you aren't a Last.fm user, give this extension a try. It lets you play practically any song on earth for free. It also scrobbles the song, that means they get added to your play count and add to the building of your musical taste which in turn lets you discover more music. You can play pause shuffle and control volume right there in your browser and use keyboard shortcuts to play any song on Last.fm (<http://goo.gl/VnEJO>)

## 56 NEW FIRMWARE FOR PMPS

This is a free alternative firmware and operating system to Apple's offering on the iPod Classic. With the Rockbox, you can change UI, do loads of other funky stuff and give a new lease of life to that ageing iPod Classic you've ignoring



for a while. Rockbox is supported by various top media players like Cowon, Samsung, SanDisk, Philips, iRiver and more.

## 57 SING ALONG TO KARAOKE

If you always wanted to turn your PC into a karaoke machine, and never had much success, then you're in luck. Winamp has a .CDG plugin which lets

you become a karaoke star within minutes.

So here's how it works: you download MP3 + CDG files for the songs in your karaoke playlist, and play it via Winamp. The free CDG plugin detects when a CDG file is played and gives you accompanying scrolling text for a number that is devoid of vocals.

## 58 PLAY HD VIDEOS ON A NETBOOK

Try the KMPlayer and Media Player Classic, both of these support hard-



**digit** brings you

## Chrome Challenge

Develop a **Chrome App** and get featured in **Digit Magazine**



**Top-5 apps**  
Gets one Samsung Galaxy Tab each



Visit [bit.ly/chromechallenge](http://bit.ly/chromechallenge) now

ware acceleration natively for any type of video. Using these players, you should be able to play HD 720p video files using codecs like XviD, DivX, or MPEG-2 -- AVC/H.264 found in most MKV, MP4 files might still be too much for your netbook. But when you use these players to play HD on your netbook, there's a better chance of the video playing smoothly vis-a-vis from a different player.

# Gaming Tweaks

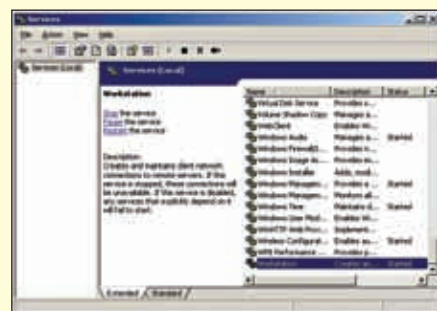
Hardcore or casual, gaming is something we all like. This section will tell you how to get the most out of your rig.

Jayesh Shinde and Anshuman Sanghvi  
[readersletters@thinkdigit.com](mailto:readersletters@thinkdigit.com)

**A**dvisory: If you don't have a half decent system these tips may not work. Still they're akin to figuratively tightening your machine's hardware or software screws. Proceed with caution.

## 59 DISABLE UNNECESSARY SERVICES

Windows XP is notorious to have a number of services running in the background that directly impact the performance of your system. You need to make sure you disable as many unnecessary services to avoid lag while fragging your opponent. Type



in services.msc in the text box after Start > Run. In the list that appears right-click on any entry to disable its status in the subsequent pop-up window. Stuff like Remote Desktop, Print Spooler, Network Location Awareness should be disabled. Also considering services like Fast User Switching Compatibility, Help

and Support, IMAPI CD Burning COM Service, and so on can go.

## 60 INCREASE RAM



In the quest to optimise your operating system to the Nth degree, it so happens that the most obvious tweak – which is too easy to remember – can often go overlooked, and you'd be surprised at the incremental boost.

## 61 OVERCLOCK YOUR RAM

You can ascertain the details of your PC's RAM module through CPU-Z > SPD (Serial Presence Detect). Copy the RAM clock speed, you'll need it in the next step. Now go to the BIOS and look for memory configuration setting. Disable the default RAM profile. You have to now adjust the memory multiplier by typing in the RAM clock speed or by default overclock options built into the board. Always increase the clock speed which match that of higher-clocked retail RAM sticks of the same type – for e.g., DDR3 RAM are sold in 800-1066-1333-1600-1867-2133, etc. Save the setting and exit the BIOS to check if your system boots and runs efficiently.

## 62 OVERCLOCK YOUR GRAPHICS CARD

Getting more juice out of a graphics card these days has become increasingly easier, thanks to dedicated utilities from both AMD and Nvidia. While AMD supports basic overclocking

features under Catalyst Control Center > ATI Overdrive, you'll have to download Nvidia System Tools utility to change your graphics card's speed settings and go to the Performance menu. Locate the clock speed sliders for your AMD or Nvidia graphics card and tweak the settings with small increments of 5 MHz or so. Never increase your GPU's clock timings in generous proportions. Reboot the system, and stress test by playing a game.

## 63 PLAY RETRO GAMES ON YOUR ANDROID

In late May, Google mysteriously removed freely available game emulators from the Android Market, without any explanation. These emulators allowed you to play games for Super Nintendo,



SEGA MegaDrive, Atari 2600, GameBoy and more classic consoles. They're still available here – <http://slideme.org> – An alternative market for Android apps.

## 64 TRY A CONSOLE EMULATOR

If you don't have a console, find consolation in the fact that you can still run most of the console titles through emulators on the PC. For example you can play PS2 games on your PC with the PSX2 emulator (<http://bit.ly/DNWog>) You can also play gameboy advance colour on your PC with just an html5 browser (<http://bit.ly/fJ5RM0>). An alternate GBA emulator is visualboy (<http://bit.ly/3QkNs>). If you are into playing retro NES games you can try VirtuaNES (<http://bit.ly/caMgVf>) As for PSP games you can try PCSX2 emulator. (<http://bit.ly/6bUd9b>)

## 65 MORE VIDEO MEMORY FROM YOUR RAM

You can increase the VGA shared memory allocation from your RAM in your BIOS settings. The BIOS settings vary from provider to provider,

## DID YOU KNOW?

You can burn an ISO image in Windows 7 from the command prompt? Why would you want to do that? Well because its freakin cool! Here's the command:  
`isoburn /q drive:\path\filename.iso`

but you can navigate to this setting and increase the allocated RAM. A rule of thumb is never to allocate more than 50 per cent of your total RAM.

## 66 CHECK YOUR PS3 PAD BATTERY STATUS

Since there's no direct indication of the charge left on your pad, it just appears on the screen in between gameplay. You can press and hold the PS button to bring up the indicator that shows your pad's charge.

## 67 PS3 TO RESCUE DVDS

If you have an old DVD player and a brand new Plasma or LCD TV, you will get a stretch fuzzy display on your DVD titles. But many don't know that the PS3 is a very able DVD player with in-built upscaling so that all your dvds are upscaled to HD – a feature that old dvd players don't have.

## 68 DUAL SCREEN XBOX 360

If you are hosting a mini LAN party you can have a display on two screens at the same time for spectators to watch. You need one of the component/composite dual video cables for this. Now you just need to flick the cable's switch to Standard Definition but connect the composite (yellow) cable to one screen and the component (the red, green, blue) cables to another.

## 69 MARIO ATTACK

When you are downloading something from the Wii shop, take a look at the Mario animation in the progress bar. If he's dressed in red and white instead of his traditional red and blue togs you can make him chuck fireballs with the A button.

## Windows 8 UI transformation pack

Want to try out Metro UI with its flashy tiles and transition on your Windows 7 machine? Head over to <http://bit.ly/windows8pack> and follow the instructions.





# Tweaks for the power user

Solve common niggles, tweak your UI, and get things done quicker, smarter, and in a more efficient way.

Siddharth Parwatay (with inputs from Anshuman Sanghvi)

siddharth.parwatay@thinkdigit.com

**G**eeks like to get under the hood and get their hands dirty, right? At the same time if there is a smarter way of doing things who wouldn't want to use it? In this section we show you some quick hacks that anyone can implement, to get more out of your system and keep it running as good as new.

## 70 SAY GOODBYE TO .DLL ERRORS

Often, if a perfectly good piece of software stops working suddenly, chances are the error is the result of a .dll file that's gone bad. A fix for this is to go to sites like <http://www.dll-downloads.com/> that have repositories of thousands of .dll files, search the one you want and install it. Installing is a simple process too. Dump the .dll file in `c:\windows\system32`. To register the file hit [Win] + [R] and type "regsvr32 filename.dll".

## 71 MANAGE DESKTOP CLUTTER IN A JIFFY

There are two tools you can use for this. One is called Belvedere (Download: <http://bit.ly/dbelvedere>) and the other is Deskretary (<http://bit.ly/deskretary>). Belvedere can be used as a behind-the-scenes automated clean up tool, that will regularly clean/organise up your desktop. While Deskretary can be an end of the month push button solution to clean up the desktop after a month's accumulation. For Belvedere start by clicking on the plus [+] button to add rules for cleanup. In Deskretary you start with a wizard the first time the application launches.

## 72 GET MAC-LIKE BEHAVIOUR ON WINDOWS

While [Alt] + [Tab] works fine enough, it doesn't provide the eye candy of Mac's Exposé which brings to focus all win-



dows currently open. Even the Windows Flip 3D [Win] + [Tab] doesn't match up to its functionality. So what do you do? Go to <http://bit.ly/smallwindows> and download SmallWindows. Once installed double click on the taskbar icon to change settings. The only setting you really need to change is the keyboard combo. We set it to [Alt] + [Q] because it's right next to [Alt] + [Tab].

If you're altogether in love with OS X, you could also try out this skinning option called Snow Transformation Pack (<http://bit.ly/stp15>) which will make your Windows 7 look like the Snow Leopard. Just run the .exe as administrator.

## 73 CALIBRATE TEXT AND COLOUR

If you find yourself squinting at text, you probably need to execute this tweak. Hit [Win] + [R], type "dccw" and press [Enter]. This will launch the calibration utility. Click Next and use sliders to make adjustment. Choose the option that looks the best at each stage.



## 74 LOCK FOLDERS

There are many folder locking software out there, but most

of them have some bug or the other. Either too heavy, too many restrictions on the free version, or easily detectable, etc. Lock-a-folder (<http://bit.ly/lock-a-folder>) on the other hand is lightweight, free and leaves no trace in processes. Download > Set Master Password > Lock (upto three folders).

## 75 TAKE YOUR DESKTOP WHEREVER YOU GO

Take your desktop with you, wherever you go with by installing MojoPac [Find on DVD or <http://bit.ly/dmojopac>]. Install software and games onto a USB stick or any storage such device having MojoPac and simply use them on any laptop/PC/Netbook as soon as you plug in the USB drive. It has many other uses too. For example by installing MojoPac on your iPod and installing iTunes on it, you can directly import music from any computer.

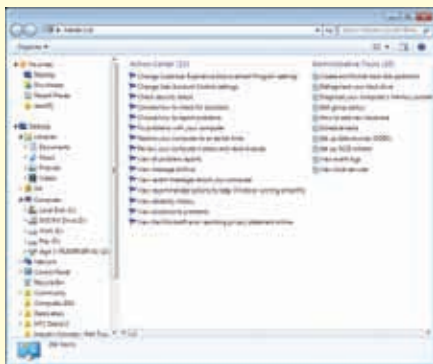
## 76 SYSTEM MAINTENANCE TWEAKS

If you're someone who installs a lot of software and not necessarily always in a virtualised environment (such as <http://www.sandboxie.com/>), cleaning registry and hard-uninstalling software is something that would help keep things running smooth. CCleaner (<http://bit.ly/ccleaner>) is a good balance between user-friendly and advanced user features. RevoUninstaller (<http://bit.ly/drevouninstaller>) should take care of your uninstalling needs while a defrag using IObit's FastDefrag (<http://bit.ly/dsmartdefrag>) will help you quite a bit in speeding up performance.

## 77 ACCESS THE HIDDEN MASTER-LIST

Create a new folder on your desktop and call it Master-List. {ED7BA470-8E54-465E-825C-99712043E01C} The folder icon will change and when you open it, you will find every option that you can ever need

to tweak your system. Though these settings can be accessed through a maze of menus and sub-menus under control panel, it's really convenient to have them



all under one folder. Lets you discover previously un-known system options.

## 78 BE CAREFUL WITH THAT CHKDISK

Often the symptoms of a failing hard disk and that of an erroneous file system are the same, and windows automatically fires up the chkdsk utility which tries to fix the error in the file system, in-turn losing data on those bad sectors permanently. In such cases, do not let the checkdisk utility run; instead try to recover the bad sector with a data recovery software such as Recuva (<http://bit.ly/drecuva>) to get through.

## 79 MAKE A PARTITION FROM YOUR RAM

Download RAMdisk (<http://bit.ly/dramdisk>), a software that will allow you to create a partition from your existing RAM. Once installed, on first use you need to decide the kind of formatting and space that you want to allot. Now you can use it like a hard disk partition and open up large files which take a long time to load up such as database files, page files, Photoshop psd files, scratch disks etc. Interestingly, the software claims to detect memory over 4GB on 32 bit systems. Beware though, since RAM is volatile memory, unless you save an image of your partition contents, they will be permanently gone once you shutdown or remove that partition.

## 80 CLEAN UP YOUR SYSTEM

If you have system restore enabled on your system, (if you don't know, you probably have it enabled by default) you will notice that your Windows drive has very low free space now. The disk cleanup utility (right-click on the drive and go to Properties, select the General tab) helps

clear out a lot of clutter on your disk. Here you can choose to clean up office and service pack installation and backup files.

## 81 KNOW MORE ABOUT PROCESSES

How often has it happened that you want to kill a process or safely remove a device but cant because it has some file or directory open. You can find out exactly which processes and DLLs are open using Microsoft's Process Explorer. get it here – <http://bit.ly/2QxebL>

## 82 ULTIMATE WINDOWS TWEAKER

This is a light (345KB) EXE file which does not require an install and packs over 150 tweaks and settings. Simply download the zip file from <http://bit.ly/ultimategwt>, extract its contents and run



Ultimate Windows Tweaker. It gives you tweaks to change common UI settings, performance tweaks and even to add useful right-click context menus to files and folders such as "Pin to start menu"

## 83 BOOT QUICKER

Of course the traditional way to do this is by disabling programs from startup by going into msconfig. Hit [win] + [r] and type msconfig enter. Under the Startup tab deselect unnecessary programmes. Of course you do want some programs to run at Startup but there's no reason for them to make calls on your CPU all at once and right at boot. Use Startup Delayer (<http://bit.ly/dstartdelay>) to delay the startup of some application to a later stage when the computer's resources are more idle.

**DO THIS**

For a list of all links mentioned here go to this one link or scan the QR code from your phone.

<http://bit.ly/PowerUserLinks>



## INJECT NEW POWER INTO AN OLD PC

The only way to truly increase the performance of an old PC is by overclocking it. If you have to work on a Pentium 4 generation PC you would want to squeeze out whatever juice you can out of it. Overclockers of today have it far too easy with unlocked multipliers and base clocks in the BIOS. Most chipsets of that era won't allow such tweaks. The only way then is to up the FSB (Front Side Bus) through a software called SetFSB. You will have to look up your board's chipset on it's website and download accordingly to acquire the correct Clock Generator (<http://bit.ly/setfsb>). Be warned this is an advanced user tip and further research will be required.

# Trickery for Web Fanatics

Self-confessed cyber junkies rejoice! Here are a few tricks to speed up, enhance and streamline your web experience

Abhinav Lal and Anshuman Sanghvi  
[readersletters@thinkdigit.com](mailto:readersletters@thinkdigit.com)

## 84 USE MULTIPLE BROWSERS

Why stick to a single browser when you can avail the facilities of all of them? Use different browsers for different scenarios since they are free anyway. For example, Firefox has certain great add-ons while Opera is stable and has versions for the mobile and tablet too that can be synchronized with the desktop ver-

sion. Chrome on the other hand is fast catching up due to its speed and simplicity. Safari is, well, Apple! While Internet Explorer still the last resort.

## 85 KEEP THAT OLD VERSION!

We recommend that you always keep your browser updated to get the latest features and security fixes. However, certain add-ons or features that worked before may be incompatible with the new updates. In this case, keep the old version!



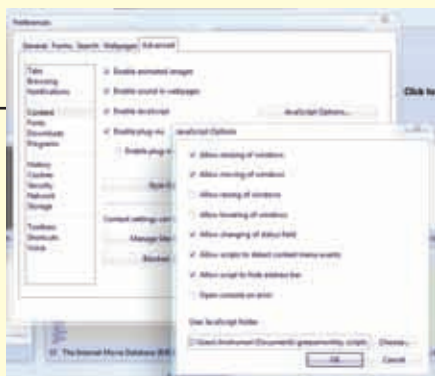
GreaseMonkey scripts, Youtube download helpers etc. usually benefit from this.

## 86 CUSTOM-MADE BROWSERS

Now-a-days browsers come with all kinds of customisations, such as what panes and toolbars to show or hide, skins, themes and color schemes that change the overall look and feel etc. You can even have a full screen experience if you want. Look for options in the preference menu (under tools in some browsers) or the spanner button for Chrome.

## 87 OPERAMONKEY!

Chances are you are already familiar with Greasemonkey extension which allows custom scripts to run on Firefox that enhance the usability of a site. You can do the same in Opera, go to Tools > Preferences... > Advanced > Content> Check the option to Enable JavaScripts.



Go to JavaScript Options and Choose a folder to store all your scripts. Check out [userscripts.org](http://userscripts.org) for available scripts

## 88 SUPERCHARGE YOUR BROWSER

Here are a couple of useful extensions to turbocharge your browser **LastPass**: a master password manager that will remember the passwords of all your accounts so that you just remember one. Form filling and auto password entry is also available (<http://bit.ly/gc1cwi>) **Xmarks**: is a cross-browser bookmark synchronizer (<http://bit.ly/FEMS2V>) **ScribeFire**: is a helper add-on for bloggers. It allows you to post to multiple blogs from the same location (<http://bit.ly/et2JvC>)

## 89 LIST ALL UNREAD EMAILS IN ONE GO:

Simply write is:unread in the search bar at the top in Gmail to list out all the unread emails in your inbox.

## 90 INCOGNITO!

Did you know Chrome's incognito pages allow a user to surf the web without worrying about leaving traces of personal information on a computer? Hit [Ctrl]+[Shift]+[N] to open a new instance of an incognito session.



## 91 CHROME BOOKMARK SYNC

If you use Google Chrome, you don't need an extension to sync bookmarks. If you have the latest version of Chrome, just head over to Settings > Options. Click on Personal Stuff and set up Sync on your Chrome browser. All your bookmarks and extensions and more will be synced across different computers, as long as you use Chrome with your Google ID.

## 92 USE A CUSTOM START PAGE

Having one central page to start off your day on the Web helps a lot to manage your work. If you aren't in the habit, we suggest inculcating one. Use iGoogle ([google.com/ig](http://google.com/ig)), it lets you customise your start page with what you want - Gmail Inbox, Wikipedia link, weather updates, news feed, and tons more. You can also visit MyFavourites to create your custom start page - without an account.

## 93 PORT FORWARDING?

In data transfer, instead of having every packet stop at each port until it finds an open one, a router can


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be programmed to identify and redirect packets without undergoing the stop and search process. Port Forwarding thus gives a very good speed boost especially when downloading from torrents. You can learn how to do it on your router here – <http://bit.ly/WBgUn> and be sure to read our Digit 101 section on the last page

## 94 ABOUT:CONFIG

Type this in the address bar of your Opera or Firefox browser and to see all the hundreds of advanced settings you can change in your browser. For Chrome you can try `about:flags` and also check out this site – <http://bit.ly/caoiKx>



**This might void your warranty!**

Changing these advanced settings can be harmful to the stability, security, and performance of this application. You should only continue if you are sure of what you are doing.

☒ Show this warning next time

## 95 CHANGE CONNECTIONS TO A SERVER

If you browse heavy websites like image galleries, you can change the maximum number of parallel connections the browser makes to the web site's server. Setting up a high number can speed up a light website whereas a lower number will load up parts of a heavy page and then load up the rest as you browse the original part. To do this go to `about:config`, and modify “network.http.max-connections-per-server” in Firefox, and Performance tab in Opera.

## 96 SCHEDULE DOWNLOADS

Why wake up at ungodly hours to download at your ISP's night plan? Schedule your downloads using download managers like Flashget. <http://bit.ly/cv8cB7> You can create a schedule specifying the date and time to begin and end the download. uTorrent <http://bit.ly/oajfV> also allows for scheduling and can shut-down the PC after download completes.

## 97 TWEAK TCP SETTINGS

As a broadband user, you can change a slew of TCP settings related to MTU, RWIN, QoS etc. All these

settings are can be changed with programs such as TCP Optimizer <http://bit.ly/fMR6z>. A detailed guide explaining all these settings and how to use to program can be found here – <http://bit.ly/18KYF3>

## 98 CHANGE YOUR ROUTER'S FIRMWARE

There are many freely available firmware that replace your existing firmware and are configured to maximise download speeds. These

include Tomato, FreeWRT, OpenWRT. You can check if your router is compatible with these firmwares. Find out more here – <http://bit.ly/97qfkB>

**DO this**

For a list of all links mentioned here go to this one link or scan the QR code from your phone. <http://bit.ly/kQvwtm>



## 99 SYNCHRONISE YOUR FILES

This is a free-to-use file synchronisation web application for two or more computers that works on both Windows and Mac OS X, as well as over web storage accounts of Windows Live SkyDrive.



## 100 ORGANISE COMMUNICATION WITH THREADSY

It lets users browse and use all their email and instant messaging accounts, as well as social networks, all in one thread-based place.

## 101 AVOID REGISTERING FOR WEB SITES

This service provides you username-password sets for web sites no strings attached, so that you don't have to go through the whole process of registration.

## 102 GET MORE OUT OF YOUR GMAIL

You can now send emails in the background while you browse your inbox, without having to wait for the sending to complete. You can add any gadget available from any website just like in iGoogle, such as stock quotes, comic strips etc. Look for “Labs” in the settings of your Gmail account.

## 103 PLAY HINDI MUSIC ON GOOGLE

Navigate to <http://www.google.co.in/music> and you can search for artists, albums or songs and legally play hindi music online.

## 104 FIND FACTS ON GOOGLE SQUARED

Head to <http://www.google.com/squared> and enter any keyword, and google will find out all possible facts relating to that term and display them in a square. You can then add or remove columns or related information as well as share your fact data.



# worldview

OUR PICK OF THE BEST TECH ARTICLES FROM AROUND THE GLOBE

## (MUST READS)

### HOW WOULD YOU CHANGE NINTENDO'S 3DS?



The 3DS is a rather different gaming console and Engadget is asking its users to come up with ideas on what they would like to change in the next version of the device. The comments section on this article makes for an interesting read.

<http://engt.co/digit07113>

### COINS WITH QR CODES

With bitcoins and NFC phones, people the world over are wondering if physical currency is really relevant anymore. But apparently the world's first coins with QR codes will start circulating in the Netherlands at the time of going to print. What will they link to? Initially the the national mint, but after June 22 will link to a "surprise."

<http://bit.ly/digit07115>

### THE REAL LIFE PENSIVE



Remember Dumbledore's memory bank in Harry Potter? Apparently, new brain implant tested on rats restored lost memories at the flick of a switch. Apart from curing Alzheimer's this may even result in real life memory stores of the future.

<http://bit.ly/digit07114>

## (Popular Mechanics Corner)

### 101 GADGETS THAT CHANGED THE WORLD



The alarm clock. The personal computer. The smartphone. The radio. You know the greatest gadgets of all time (and you've probably owned most of them), but which has changed the world more than any other? You will be surprised...

<http://bit.ly/digit07109>



#### In-Car Information Systems

What's the latest in-car software, hardware and wireless services for connected cars? Here are three products analysed by Popular Mechanics that even we will keep an eye on

<http://bit.ly/digit07110>



#### The Last Word on Battery Longevity

Too much charge, too little charge, extreme heat or cold, no. of cycles, fully discharging regularly. Does it all really matter? Find out what does research says about extending battery life of your gadgets.

<http://bit.ly/digit07111>



#### Build your own jet engine

With 3D printing, students at the University of Virginia built a working table top replica of an actual jet. And it cost them just \$2000 in materials. Of course it's plastic, but had it been metal, it could've actually produced 500 pounds of thrust. Read on:

<http://bit.ly/digit07112>

**OS X LION VS. WINDOWS 8**

Feature by Feature comparison. The two leading consumer desktop operating system makers, have revealed the future of their software. PC Mag how they stack up. The article looks at everything from UI to Gesture and processor support. A must read.  
<http://bit.ly/digit07100>

**APPLE 'IS KILLING THE WORLD WIDE WEB'**

Every now and then someone will come up with a something is dying or something is killing something story. Most are just headlines to grab attention, but this one could actually make some sense. Head over to the link and decide for yourself:  
<http://bit.ly/digit07103>

**60 SECONDS ON THE WEB**

What can happen in that seemingly fleeting moment? Have a look at this infographic to put things into perspective:  
<http://bit.ly/digit07104>

**FIVE BEST TORRENT APPLICATIONS**

If you're one of those people who don't know any client other than µTorrent this article from LifeHacker is just for you. As usual the website has asked its readers to vote for their top apps so there's bound to be something for everyone. Find out:  
<http://lifehack.kr/digit07105>

SHORTS

# 10 Things to Know About Windows 8

- By Alan Henry

There's always an air of anxiety before the launch of a next generation OS platform. Here are 10 things about you need to know about Windows 8



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At All Things D some time back, Steven Sinofsky, the President of Microsoft's Windows division, gave us a peek at what Windows 8 will look like. A lot will likely change between now and the time the OS is available to the public, or even in beta, but that sneak peek revealed some important details about the future of Windows, and how Microsoft sees us using our computers in the future.

At first glance, the interface is different: so much so that it's almost unrecognizable from the standard Windows we all know so well. The taskbar is gone, the desktop is gone, and in their place is a very Windows Phone 7-style system of tiles. In a preview video, Microsoft director of Program Management Jensen Harris took us on a tour of the video, but some of the most important things to know about Windows 8 are the things he didn't say. Here are some of them:

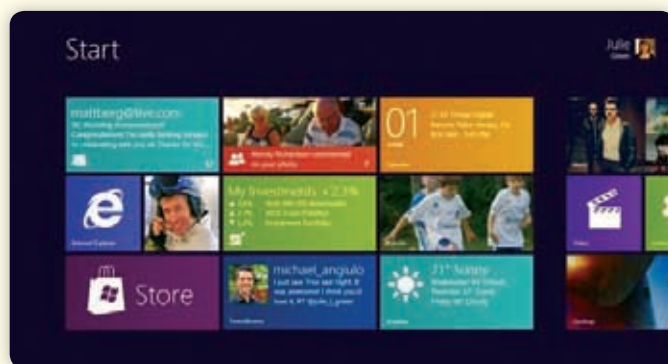
1 Windows 8 will support system-on-a-chip architecture, meaning tablets and other devices. We can all put the rumors to rest that Microsoft would make a play for the tablet market with Windows Phone 7. Instead, Microsoft has gone in for a convergence play, bringing the desktop and laptop versions of Windows closer to Windows Phone 7 instead. The interesting thing is that

they're trying to do it without cramming the code for Windows Phone 7 down the throats of desktop users. We already knew that Windows 8 would have ARM support and x86 support, but based on the video we know that Microsoft is going for the same experience regardless of the device you'll use. The only question remaining is whether or not Windows 8 will come in separate versions or SKUs for tablets. We're betting they will.

2 Windows 8 will be backwards compatible. Near the end of the video, Harris expressly says that users will be able to open and run "legacy apps," even from the Start Screen. He uses Microsoft Office as an example to prove that old Windows 7 applications will work on Windows 8, and while it looks horrible, it does work. The big unresolved question here is whether or not that means you'll be able to run Microsoft Office on your ARM-equipped tablet. At least laptop and desktop users won't have to ditch all of their software to upgrade to Windows 8.

3 Windows 8's Start Screen can be disabled. Another thing we saw near the end of the video when Jensen opened Microsoft Office was the standard

Windows 7 UI underneath the Start Screen. That means you'll be able to turn the Start Screen off entirely and use Windows 8 the same way you use Windows 7. You may be able to drag in newer Windows 8 apps into view on the sides of your screen, but you'll definitely be able to navigate files and folders



and run applications the way you're used to. Plus, there's a "Desktop" tile on the Start Screen. What more proof do you need?

4 Windows 8 Applications will run in Metro UI. One thing you can't miss in the demo is that all of the apps that Harris runs make use of the Metro UI interface, and those apps never deviate from the Metro design. The video makes it difficult to tell how you'll be able to run multiple apps simultaneously without swiping side to side to move among them, but that could be the point. Much like Windows Phone 7, Microsoft's interpretation of "multitasking" looks like one app has the foreground while



## 10 CREATIVE USES OF THE NEW FACEBOOK PROFILE

You know that line of five thumbnails that you've been seeing in your Facebook profile since the latest revamp? Well here are 10 individuals who've used their creativity to play around with it to create some awesome stuff.

<http://on.mash.to/digit0706>

## MAKE YOUR OWN FIRESTARTER

Did you know what a what a fire piston is? Well not many people do. It's basically a device that can start a fire without friction, just by using compressed air. This article show you how to make one!

Enjoy:

<http://lifehac.kr/digit07107>

## WEB FACTS THAT WILL AMAZE YOU



How big is the web? How fast is it growing? What is the oldest domain? And more...

<http://on.mash.to/digit07108>

## HUMANS BEHIND EVOLUTION OF DOG BARKS?

If you wonder why the neighbourhood dogs bark non stop at night, you might be puzzled to find out that it was the human ancestors behind it. Dog barks are result of human influence and thier domestication. Read here to find out more

<http://bit.ly/kWc3Zq>

others run in the back, where you can't see them. All of the apps that you see in the video behave this way, unless you go back to the "legacy" apps on the old Windows desktop.

**5** Windows 8 will be the most touch-capable OS on the market. Microsoft is betting a bundle that more people want tablets, laptops with trackpads, and all-in-one PCs with touch-screens than ever before. They're also clearly making a bet that keyboards and mice as tools to navigate windows and applications are on the way out. The on-screen keyboard still, even though Harris complains about it in the video, takes up half the screen, which tells us they're not too concerned about people actually spending time typing. The new UI is designed to get you to files with swipes and multi-touch gestures, and then when you're ready to use the app, then you can use your keyboard and mouse. Every Windows 8 native application we saw supported multi-touch gestures, and there were no keyboards or mice to be seen in the demo. At all.

**6** Windows 8 native apps will be web capable. He rushed through the statement, but Harris noted that the Live Tiles all leverage HTML5 and JavaScript to pull and provide information to the user from the Start Screen. The goal is to give users a way to see relevant information without opening an app to get it (sound familiar? It should – that was the desire behind Microsoft SideShow, which never really took hold with OEMs.) Since most of that information comes from the web in the form of email, tweets, Facebook posts, photos, and other updates, it makes sense for all of the apps behind the tiles to support web standards and to be connected to the Internet. What we don't know is how apps developed using Microsoft's own

Silverlight and WPF will play into this.

**7** Windows 8 makes Aero Snap more important than ever. Even in legacy apps, you can clearly see newer Windows 8 apps pinned to the side to let you work while reading the news, or your Twitter stream. In the demo, we saw Microsoft Excel 2010 running next to a Windows 8 Twitter client, and while it looks a bit clunky, especially considering the design differences between Metro UI and the traditional Windows desktop, it does work. How it'll work with a mouse instead of a touch-screen though could be tricky. Windows 7 users who hate Aero Snap will hate this in Windows 8, but it may be the only way to get multiple apps to appear on screen at the same time.

**8** Windows 8 will have a built-in app store. It's plain as day in the video, and rumors have been circulating for months, but Microsoft finally said that Windows users will be able to purchase and download applications for their Windows 8 systems from a built-in store, accessible from the Start Screen. What that store will look like is anyone's guess, but some screenshots of the store reportedly leaked back in April that may give us an idea of what it'll resemble, at least in the old Windows 7-style UI.

**9** Windows 8 is a huge risk for Microsoft. The fact that Microsoft is planning to make the Start Screen your center of operations when using your com-

puter highlights the fact that they feel that Live Tiles and the Metro UI is the way to go. They're minimizing the traditional desktop-with-icons interface, and in the video, the desktop is only referred to for use with legacy applications. Microsoft seems to think that if they leave the desktop behind, no one will miss it. The rest of us aren't con-



vinced. If the bet doesn't pay off, all of Microsoft's new features will amount to something users turn off or find a 3rd party utility to disable so they can get back to work. In the worst case, it's so integrated in the OS and people dislike it so much that they'll stick to Windows 7, and Microsoft has another Windows Me on their hands.

**10** Windows 8 will look very different when released. It's important to remember that all of these things are subject to change. The Start Screen looks pretty well baked and will probably be included in one form or another, and for all we know it may only make it into tablet and premium editions of Windows 8. Other features and applications are yet to be seen, as are the underpinnings of the OS that will make all of this possible. Our next peek at Windows 8 will come at the BUILD developer's conference in September, and a lot will happen between now and then.



This time around we introduce you to Bill "The Engineer Guy". In his videos and in over 300 radio

pieces Bill takes takes a particular technology - be it LCDs, Hard Drives, or even nanotechnology - and tears it down for the masses to understand. He's revealed the secrets of his high-tech underwear, and examined the threats to privacy from technology

<http://www.engineerguy.com/>

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Send in your feedback to [editor@thinkdigit.com](mailto:editor@thinkdigit.com)

## (PRODUCT LAUNCHES)

### HUAWEI MEDIAPAD



World's first tablet to run on Qualcomm's 1.2GHz Snapdragon processor, and Android 3.2. OS is optimised for 7 inch screens and the display has a pixel density of 217 PPI. The rest of the specs are pretty good too all packed into a sleek two-tone uni-body aluminum alloy body. Price: TBA

### WII U



The gaming giant Nintendo recently unveiled their new console at the E3 Expo recently. It features a controller that has a camera and 6.2 inch touchscreen. Gameplay can involve just the controller or both TV and controller which has a motion sensor. Price - not yet revealed

### NOKIA N9



Also known as the Lankku is a beautiful 3.9-inch AMOLED screen [854 x 480] MeeGo device that is devoid of any buttons. It comes with 16GB or 64GB of in-built memory, 1GB of RAM, a OMAP3630 1 Ghz processor and PowerVR SGX530 GPU; all tightly packed into polycarbonate. Price: TBA

## WORD JUMBLE

H	T	N	E	M	A	L	I	F	M	R	Z	T	C	N
C	H	G	O	O	G	L	E	K	S	Y	B	R	H	I
H	S	J	R	E	L	O	O	C	E	V	R	A	I	T
R	A	S	R	O	S	S	E	C	O	R	P	K	I	L
O	L	R	E	T	T	I	W	T	H	G	A	I	N	H
C	F	U	R	S	E	C	R	U	O	S	N	E	P	O
T	N	E	M	N	I	A	T	R	E	T	N	E	U	V
B	E	N	G	I	N	E	K	X	Y	K	O	B	T	U
F	K	Z	T	N	E	G	A	E	L	O	S	N	O	C
O	S	J	V	D	Y	R	O	M	E	M	G	E	E	K

2. XOXO OX OXOXO OXOXO

ABSOLUTE TIMEPASS

## Top 3 YouTube Picks

Make sure your boss doesn't catch you goofing off with one of these playing on your screen



<http://bit.ly/digit07102>

Duration: 4 mins 34 secs

A first look at the new "Windows 8" user interface. Get to know about metro UI, snapping apps and the tiles mosaic



<http://bit.ly/digit07122>

Duration: 0 mins 55 secs

The receipt racer combines different in and output devices into a complete game. Yes you end up wasting tons of paper but it sure looks like fun



<http://bit.ly/digit07121>

Duration: 3 min 24 sec

Some of the interesting controller + TV gameplay options of the Wii U controller have to be seen to get the true picture. Check out this trailer



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# Extracting audio, overheating laptops, internet niggles

Digit solves all your troubleshooting queries

## Java installation on Spice

I just bought G6550. I'm unable to install JAVA. But the user manual says it's possible. Please instruct on how this can be done.

Nazar

You could connect to the internet through your phone's GPRS or WAP. Please make sure that either GPRS or WAP is enabled and you have access to the internet. Then you could download and install the JAVA ME runtime for mobile devices from the following link: <http://bit.ly/javad123>.

## Laptop not connecting

I have a Dell Inspiron 1525 laptop which I bought in 2009. The configuration is as follows: Intel Core 2 Duo CPU T5800 @ 2.00 GHz, 2 GB RAM, Window Vista Home Premium Service Pack 2 (32-bit).

I was using BSNL broadband as my ISP but due to their poor service, I changed to Tikona Wibro on 5th June. For some time I could browse and download things. After a while, I wasn't able to see my

connection status as 'connected'. My LAN connector wasn't showing the blinking lights that it normally does. The same modem and that same LAN cable are working absolutely fine on my seven-year-old HCL PC. So now I can't connect to the internet through my laptop, but I'm mailing you from my HCL PC which is a task in itself.

Yusuf Goriawala

Thanks for writing in. Essentially, this seems like a straightforward case of the LAN card drivers going bad. You can download them from <http://bit.ly/Jdrivers>. However, first uninstall the old drivers. Then, restart the system, install the new drivers, restart the system again and attempt to connect to the internet. We're sure this will solve the connectivity problem.

## Extracting audio from VOB

I have a DVD video file and I want to strip only the audio from it. It's a VOB file. Please suggest how I can do it. And with which software?

Mufaddal

While there are many, Besweet is a good software to try out. Download it from this link: <http://bit.ly/vobconvert>. Click on input to choose the vob file. Choose the bitrate for the final mp3 and go. It should extract the audio and transcode it to MP3 in the same directory. There is also an option for batch conversions.

## Too hot to handle games

I have a Dell Studio 1555 laptop with the following configura-

tion: Intel Core 2 Duo P8700 2.53 GHz, 4 GB Dual Channel DDR2 SDRAM, 320 GB 7200 RPM hard drive, ATI Mobility Radeon HD 4570 512MB Graphics Card. Windows 7 Home Premium 64 bit Original.

I am having trouble while playing certain games on my laptop. Recently while playing *Half Life 2*, my laptop shut down for no apparent reason after just 25 minutes. When I tried to check my laptop, I found out that the lower surfaces were way too hot. Besides having a 9 cell battery that elevated my laptop off the surface and an external laptop cooler (Cooler Master Notepal X Lite), I am still having this problem whenever I play any game even at the lowest possible settings.

Am I playing a game that is not meant for my laptop?

Amit

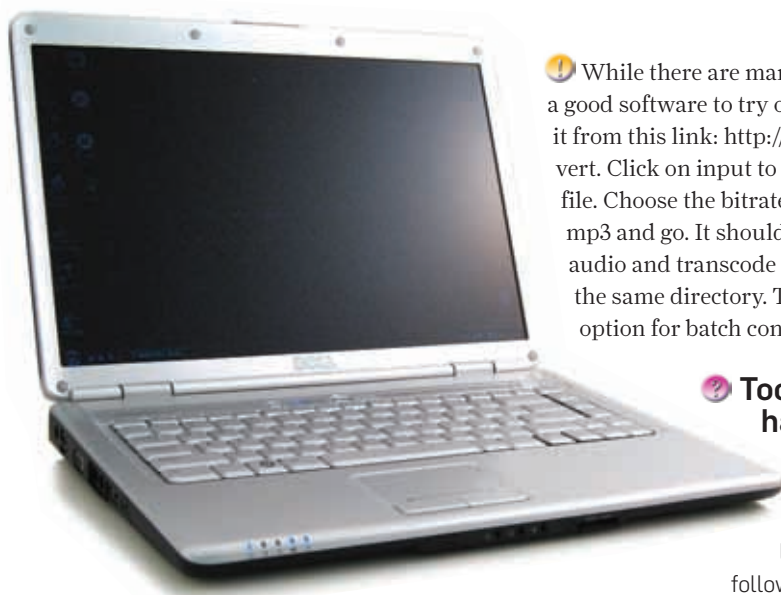
The laptop's sudden shutdown symptom points to an overheating problem. While the laptop specs may not be very powerful (the only real bottleneck is the slightly low spec graphics card), it shouldn't overheat the laptop. We suggest you check out two things:

1. Is the cooling fan in the laptop working properly? If yes, then move to point 2.
2. Are all cooling vents clear and not choked by dust which may have accumulated over time?

If both of the above mentioned points are ticked successfully, you'll need to check for any ATI graphics card driver updates and updates/patches for Windows 7. If that doesn't solve the problem either, then a trip to the service centre may be in order, else you risk damaging the laptop's internals due to the extreme heat.

## Restoring autoplay

I have an old Seagate laptop hard disk, for which I bought an old cheap case. The hard





## Possible Quake reboot

id considering a Quake reboot in a move to go back in time

## Xoom gets Android update

Motorola Xoom gets Android 3.1 update, which will allow MicroSD card support outside US

Q&A

disk had two partitions. To make them one, I entered into the Computer Management Utility, deleted them and formatted the hard disk into one single partition. Now it has a single partition and I can do all the copy, move and paste work with it. But when I connect it to my laptop using a USB data cable, it doesn't undergo Autoplay. Is it a major problem? I don't feel so. But still, is there any way by which I can restore the Autoplay feature for it?

My system specs: Intel Pentium Dual Core 1.86 MHz  
1 MB L2 cache, 1.5 GB RAM,  
256 MB VIA On-board video controller,  
Windows XP Professional SP2, 80 GB HDD,  
Realtek HD audio controller, VIA Rhine Fast Ethernet Adapter.

Steven Kedari

Does AutoPlay work with other media? Please check the AutoPlay setting in the Control Panel. Since you say you have an XP system, this utility from Microsoft should fix the bug if it's at the OS level: <http://bit.ly/autoplaysolve> If the problem is only with this particular drive it is possibly a problem created by the previous formatting of the hard drive. First, we suggest that you back up your hard drive and then format it once more. Right-click on the drive in My Computer, Format, select NTFS, Default allocation size, uncheck Quick Format and start the Format. This should solve the problem.

### Unbootable ISO file

I am unable to boot the .iso file of ubuntu 11.04 from usb. I used Universal USB installer 1.8.5.1 but it shows this error "No UI or configuration file found". Then I used UnetBootin-Win-549, but it was also useless. Please help me overcome this problem.

Anshuman Kumar

Ubuntu 11.04 includes its own tool for creating a bootable USB drive from a disc. Use some software such as

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WinCDEmu or OSFMount etc to mount your iso image as a virtual CD drive. On the disk you'll find an application called usb-creator.exe; insert a pen drive and run this application. Select the drive you want to install Ubuntu to and click on "Make startup disk".

You'll also have an option to reserve some amount of space on the pen drive for your personal files. This way you can use your pen drive as a normal Ubuntu install. Otherwise, every time you shut down, any changes you make will be discarded.

### Exclusive access to admin rights

I created a batch file to kill a particular program from running. It works fine and whenever the user opens that application it ends. But the problem is that even a non-admin user can stop that process by deleting all the processes from task manager. How do I stop a non-admin user from ending that process? I made my scrip like this:-

I created the following files:-

```
1) start.bat
copy wintask.bat c:\windows\
system32
copy wintask.vbs c:\windows\
system32
start ./z.reg
2) wintask.bat
echo off
:LABEL
```

```
ping -n 5 127.0.0.1
>NUL
taskkill /im hl.exe
GOTO LABEL
exit
```

I want to know how to make this an admin process so that non-admin users can't stop this from randomly deleting all the processes from Task Manager.

Kanchan Pandey

Using this software, <http://bit.ly/digitkk>, you can set your batch file to always run as an admin. Also this approach is more efficient for blocking

programs: <http://bit.ly/digitkl>.

### Configuring wvdial in BackTrack

I am having issues with Backtrack 5. I use a Tata Photon+ to access internet. In backtrack 4 there was wvdial to use it. But in backtrack 5 there's no wvdial as it is in beta stage. I can't download it all over again just to get a wvdial. I can't access internet by any other means. So I would love if you guys helped me out in installing wvdial offline. Backtrack 5 is based entirely on Ubuntu. Thanks in advance.

Kaustubh Yadav

Since BackTrack is based on Ubuntu 10.04 Lucid Lynx, you can download wvdial from here: <http://packages.ubuntu.com/lucid/wvdial>

You can download it anywhere, say a cybercafe. Take it on a pen drive and install it offline on your own computer. That page also lists the dependencies of wvdial, so ensure that those are installed. They seem to be quite basic dependencies, so it's quite likely that you already have them installed. In any case, download any dependencies as well.

On your own computer, you can simply double-click the deb file to install. If that's not supported in BackTrack for some reason, you can install the package from the command line as:  
`dpkg -i package.deb.`

## Linux kernel 3.0 coming soon

Linus Torvalds, creator of Linux has declared that the next version of the Linux Kernel will be 3.0 – ending the 15-year long v2 cycle

## New OSS compiler

PatScale's EKOPath 4 Compiler Suite, which used to cost nearly \$2,000 has been open-sourced

# Five Linux distros for your ageing computer

Kshitij Sobti

[kshitij.sobti@thinkdigit.com](mailto:kshitij.sobti@thinkdigit.com)

**T**he immense modularity of Linux makes it possible for one to run on hardware that has long been out of date. Often a computer even a few years old will be able to run the latest Linux distro without problems, and Linux is usually a breath of fresh life for such computers.

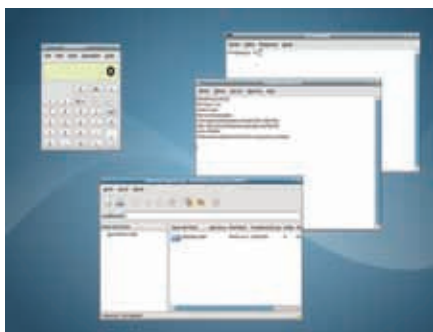
However there are computers lying in the more dusty corners of our garages, which these newer Linux distros will refuse to run on.

While it is possible to run an older Linux version or even an older Windows version, often the best approach is to opt for a distribution designed specifically with older computers in mind. While there may be other distros that are just light enough to work on older machines, we take a look at five of them.

## Xubuntu and Lubuntu

Xubuntu is an official Ubuntu version that uses the XFCE desktop environment instead of the Gnome / Unity used by Ubuntu. Xubuntu is significantly lighter, requiring a quarter of the resources of its counterpart Ubuntu. While Ubuntu requires at least 1 GB of RAM, XFCE can make do with just 256 MB.

Xubuntu replaces LibreOffice used in the latest version of Ubuntu with Abiword



Productivity suites won't hamper your work



Xubuntu is the lighter variant of Ubuntu

(a word processor), and Gnumeric (a spreadsheet application). These application do not have as many features, but are compatible with the same file formats, and are considerably lighter.

Since the OS is Ubuntu-based, it will run any Ubuntu application. Although it is important to note that the applications you run might demand greater resources.

Xubuntu includes Firefox, however you will be better off installing a lighter browser such as Midori which has lower memory requirements.

Lubuntu, like Xubuntu is an (now official) derivative of Ubuntu which uses the LXDE desktop environment. It has even lower system requirements, yielding a usable system at just 128 MB RAM.

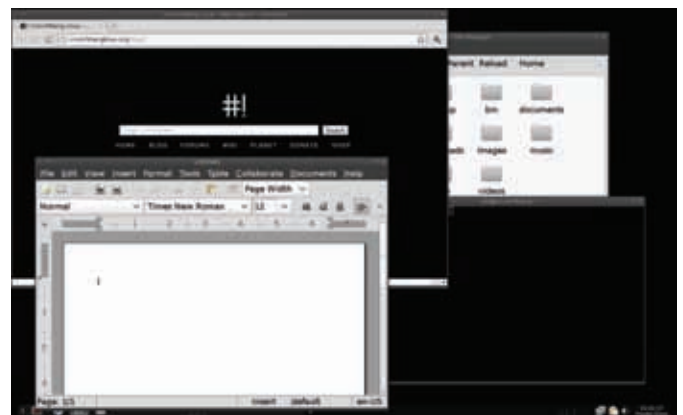
## CrunchBang

CrunchBang or #! is a Debian-based Linux OS that emphasises simplicity and speed. It uses a very minimalistic window manager called Openbox — there is an Xfce version available as well — that is even lighter than Xfce. The interface is bare, having only the essentials, a desktop switcher cum taskbar,

and no applications menu. This makes a great choice for netbooks as well.

Despite the light interface it has an impressive number of applications. Thanks to the included VLC player one can play nearly any media format, including DVDs. Flash and MP3 support are also included by default so you can use it for playing media in proprietary formats out of the box. It even includes the powerful GIMP image editor out of the box. CrunchBang uses the open-source version of Chrome, the Chromium browser. Like Xubuntu, it uses AbiWord and Gnumeric instead of LibreOffice.

CrunchBang also has very low system requirements. Technically it is possible to install on a system with



CrunchBang 10 has a minimalist interface

as little as 64 MB of RAM, but such a system would not be very usable.

## Zenwalk Linux

Zenwalk tries to cater to a wide range of users, and hence offers multiple versions, all of which are lightweight. The five versions are: Standard, Core, Live, Gnome and Openbox. The Standard one uses the XFCE desktop environment; Core comes with only a command line interface, which the user can then build on; the Live version is similar to the standard version but designed to run off a CD. The Gnome and Openbox editions use the Gnome desktop environment and



## Adobe AIR 2.7 drops Linux

Adobe AIR, an SDK for creating cross-platform apps using Flash or HTML has just lost a platform – it won't be available on Linux anymore

## Future Ubuntu ISOs to be hybrid

Future versions of Ubuntu will be released as hybrid ISO files that work as both CD and pendrive images

Open Source



Zenwalk 7 only installs one version of an application

Openbox window manager respectively.

One of the important principles of Zenwalk is to avoid duplication. As such, it comes with only one software application for a given purpose — which is to say it doesn't install two image editors, media players etc, you are still free to install them later.

Zenwalk can run on systems as old as a Pentium II with 128 MB of RAM, which is quite a feat considering that it includes mostly modern software and a recent stable kernel.

## Zenix

Zenix is modern distro that is lightweight yet quite beautiful in its simplicity. The distro is based on, and is fully compatible with Debian 6. In fact it uses the same repositories, thus making it possible to install any of the thousands of applications available for Debian.

Zenix itself takes as little as 60 MB of you RAM, making it fast even when running with as little as 128 MB RAM to begin with. Like some of the other distros on this list, Zenix does away with heavy software, opting for lightweight alterna-

tives instead. Zenix even uses the lightest window managers, Openbox, and Awesome.

## antiX

antiX is a distro designed to run on the meekest of hardware, and is capable of running even on a Pentium II 266 MHz computer with a mere 64 MB of RAM! This distro is based on Debian testing and SimplyMEPIS, and is a rolling distro, so there are no major releases, just a constant trickle of improvements.

antiX uses a recent kernel, and comes in

three flavours, a full CD distro, a base distro of just 360 MB, and a core distro without a GUI.

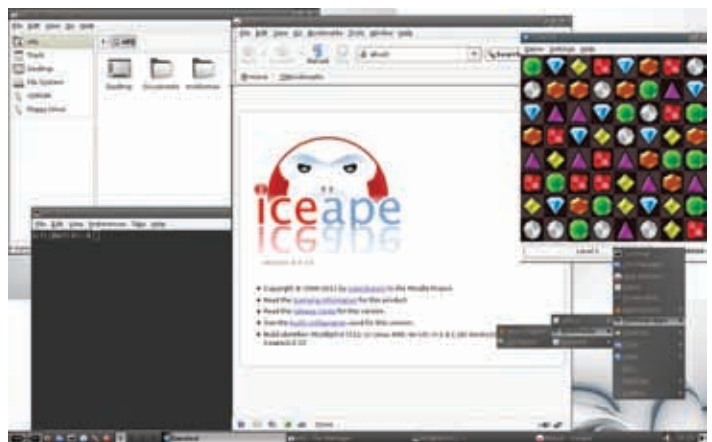
Like the other Linux distros above, antiX replaces the heavier desktop environments with IceWM and Fluxbox, both of which are presented as options while booting from the live install disk. If you want a more full-featured desktop envi-

## ULTRALIGHT DISTROS

There are many distros for those seeking lighter or more specialised distribution than the five listed here. Distro like Slitaz, which is a mere 30 MB and offers a complete Openbox-based GUI environment, with a task manager, applications menu etc, and includes a proper browser (Midroi), file manager, package management tool etc.


TinyCore Linux is even smaller, just 10 MB to download! The 10 MB includes a usable GUI and some tools. TinyCore runs right from the RAM, but can store permanent data on the hard drive. It can install and run application right from the internet. Other examples are Damn Small Linux (50 MB) and Puppy Linux (130 MB).

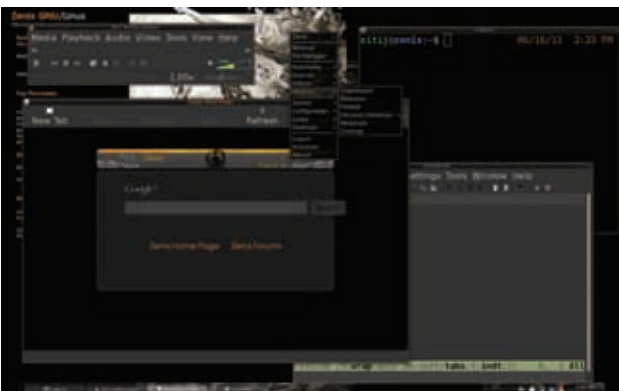
These distros are special in that they are not simply major distributions repackaged, but greatly optimised independent distributions. If all you need to do is create a computer to download files or as a firewall, etc., these distros offer a great base.



antiX will run on your PC, no matter how old your configuration is!

ronment, antiX also includes an installer that simplifies installing Gnome, KDE, Xfce, and LXDE.

The software selection on antiX is also quite modern and diverse. Instead of Firefox / Iceweasel (Iceweasel is the Debian version of Firefox), antiX includes IceApe (rebranded version of SeaMonkey for Debian systems) which is a suite containing a browser, an email client, a chat application and a web page creator. For severely limited systems, the Dillo browser is also available, which does not run JavaScript. 



Zenix 2.0 is lightweight, yet quite appealing

### Let there be light

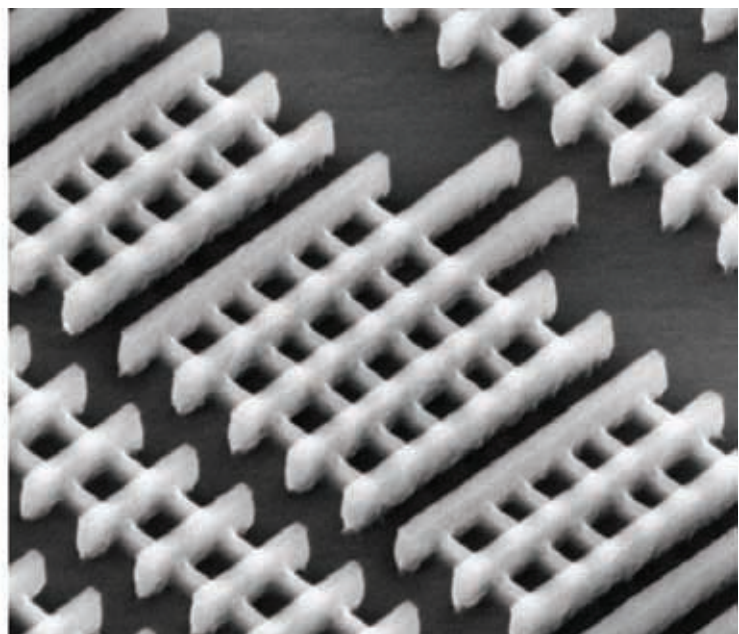
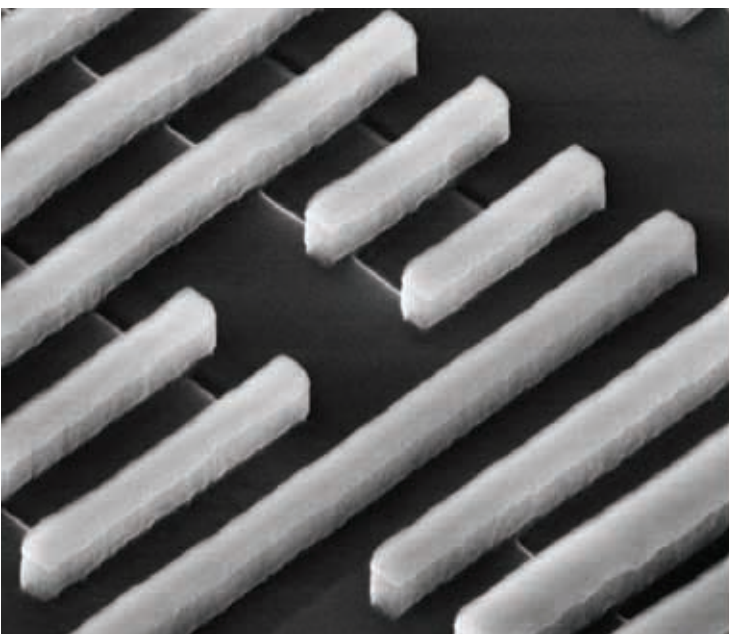
A 22nm transistor can switch on/off over a 100 billion times per sec. You would need 2,000 years to flick a light switch on and off that many times

### Teeny tiny

A 22nm tri-gate transistor's gates are so small, you could fit more than 4,000 of them across the width of a human hair

# Two's company and three's Moore!

At first glance it might seem Intel has hopped aboard the increasingly popular 3D bandwagon, but on closer scrutiny this isn't just a buzzword to encourage hype. We take a look at yet another 3D technology...this one happily far away from the realm of displays.



Michael Browne  
[michael.browne@thinkdigit.com](mailto:michael.browne@thinkdigit.com)

In the beginning of May, Intel made public what is now being believed to be the most significant advances in microprocessor technology, and what industry old timers are claiming “reinvents the semiconductor”. While we’re pretty familiar with PR agencies’ overstating of facts, what we media folk term politely as “purple prose”, the concept as unveiled by Intel seems to hold more than a passable amount of water.

The fact is this is no secret. It has been nearly 10 years since rumours first surfaced about Intel working on some revolutionary sort of transistor, and till

then, small, seemingly inconspicuous news tidbits emerged, but these were rather insignificant to the technological advances that were being unveiled over the years. After all, seeing-is-believing, and there was nothing to see. Until now that is. Some have also joked that this development was to ensure their beloved Gordon E. Moore’s famous words (aka Moore’s Law) held weight just a bit longer.

In fact, Mr. Moore himself had something more to say on the occasion of the 3D transistor announcement – “For years we have seen limits to how small transistors can get. This change in the basic structure is a truly revolutionary approach, and one that should allow Moore’s Law, and the historic pace of innovation, to continue”

The first processors to utilise these 3D or Tri-Gate transistors in lieu of the traditional planar (2D) transistors will be Ivy Bridge, the codename for Intel’s upcoming 22nm processor family, due for market release sometime in 2012. This announcement is veritably huge, because it is not simply a die shrink, or the presence of a proprietary addition like Quick Sync, or Fast Caching, but represents a complete change of the building block of any integrated circuit – the transistor.

### TRANSISTORS: the traditional way

Since the birth of the transistor in 1947, and William Shockley’s bipolar junction transistor three years later, the humble



### Fun fact 3

A 22nm CPU runs over 4,000 times as fast as Intel's first microprocessor, and each transistor uses about 5,000 times less energy.

### Fun fact 4

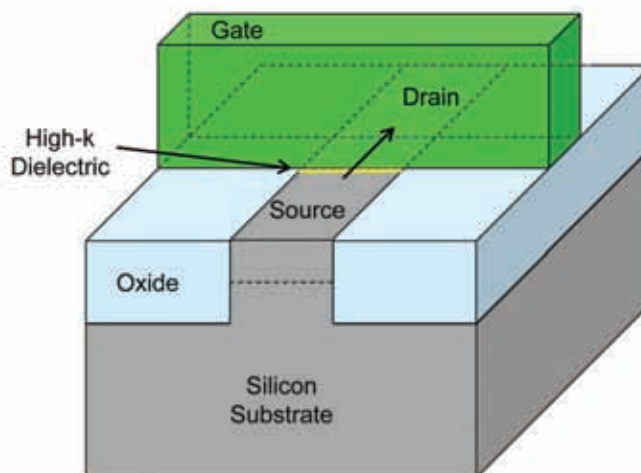
If a typical house shrunk as transistors have, you'd need a microscope to see it. To see a 22nm feature with the naked eye, you'd have to enlarge a chip to be larger than a house.

Feature

transistor has evolved and become smaller and smaller as integrated circuits required drastic size reductions. This is necessary for many reasons – more power is being demanded in increasingly smaller packages. 8 years ago, cellphones had very basic processors that were a couple of cuts above embedded processors, since their functionality was very limited. Today, cellphones are processing powerhouses, with dual core processors running at previously un-thought of speeds. More performance means more transistors, and the package also needs to be smaller creating a myriad of problems – thermal dissipation, current leakage, and even manufacturing problems. To those who don't know, think of a transistor as a very fast electrical switch with three terminals. As with a circuit, when it's switched on, current flows signifying a 1 in binary, and when switched off, current ceases to flow, signifying a 0.

Therefore in off position, the transistor's source is supplied with a charge. This source is a conductive portion of a silicon wafer. However, the channel that is a link between the source and drain acts as an insulator preventing electrons from flowing through it and the computer reads the result as a 0. For the transistor to turn on, a charge is applied to the gate that pulls electrons towards it and on to the channel that becomes conductive as a result, creating a clear electrical circuit between source and drain. This is read by a computer as a 1. One of the problems as you go on shrinking the design is as components that are supposed to conduct and insulate in turn become smaller, they tend to become less effective as insulation, as current leakage becomes more of an issue. This current leakage means that there is a current flow even when the

## Traditional Planar Transistor



Traditional 2-D planar transistors form a conducting channel in the silicon region under the gate electrode when in the "on" state

circuit is in an open (off) state. This leads to a much smaller gap between voltages in on and off state and this can lead to errors in the system detecting between an on and an off. For Intel, the gate insulator became so thin that there were problems with current leakage, and this was around the time when we saw the infamous Pentium 4 processors that were renowned as miniature heaters.

Intel managed to partially mitigate this by continuously using new and improved materials – strained silicon, a hafnium-based insulator, high-K metal gates – chances are you've heard of at least some of these exotic sounding handles, but all used for very similar purposes – enabling better and more precise control on the on and off states, and prevention of current leakages and voltage retention within the silicon substrate itself. Therefore, there are physical

limits and material limits to how small transistors can get, and ultimately how powerful the resultant processor can get. With current leakage comes inefficiency and heating, and these only compound the problem.

Rationally, there are two ways to solve this problem. One is to obviously let through more electrons, while the second is to reduce the leakage current. To get more electrons through, one needs to make the channel more conductive and therefore increase the volts supplied to it. However, power consumption also increases. The second method is to increase the surface area of the conductive material – because a larger charged surface area would attract more electrons and therefore transmit more current. And this is exactly what Intel did with the Tri-gate transistor – made



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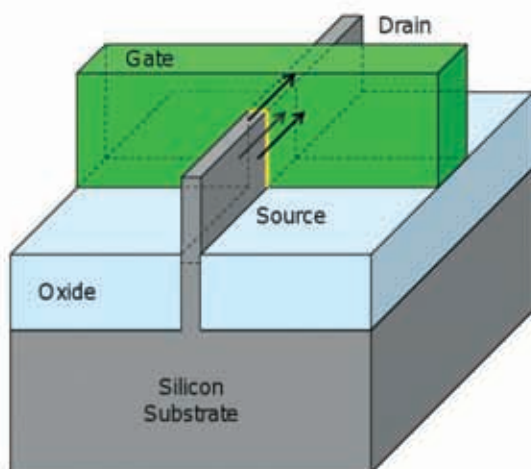
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## Out numbered!

Intel factories produce over 5 billion transistors every second. That's 150,000,000,000,000,000 transistors per year, the equivalent of over 20 million transistors for every man, woman and child on earth.

More than 6 million 22-nm tri-gate transistors could fit into a single full stop.

# 22nm Tri-Gate Transistor



3-D Tri-Gate transistors form conducting channels on the three side of a vertical fin structure, providing "fully depleted" operation. Transistors have now entered the third dimension!

it larger by expanding its Z-axis.

## 3D TRANSISTORS: When more is Moore, err more

Paul Otellini, Intel's President & CEO says: "Intel's scientists and engineers have once again reinvented the transistor, this time utilizing the third dimension. Amazing, world-shaping devices will be created from this capability as we advance Moore's Law into new realms."

Intel refers to their Tri-gate transistor

a "fully depleted" one. As you can see from the diagram above, there is a large increase in surface area of the gate that is in contact with the conductive surface that is also called an "inversion layer", because it can conduct and insulate. On account of the greater surface area and better current flow, there is also a clearer disparity between on and off states of the transistor, and therefore, the transistor can now be built to switch on and off even faster. This has a directly favourable

impact on clock speeds, which is something we've seen largely stagnate over the past 2 years, with only fractional increments.

This also brings about power savings. Applying less voltage to the gate will reduce the conductivity of the inversion layer, but owing to the increased surface area it'll still carry across the same number (or even more) electrons. Even better, now that Intel has used this finned design, the size of the fin can be increased in the future. For now though, Intel's new design can reap the benefits of higher clock speeds and power savings and these are not mutually exclusive.

## What does this mean?

Intel claims these tri-gate transistors in their upcoming 22nm Ivy Bridge processors can switch between on and off 18 to 37 per cent faster than Sandy Bridge (32nm) processors. That number can directly equate to increased clock speeds. In terms of power saving, Intel mentions a figure in the range of 50 per cent, which is huge. This has large implications on not just desktop and notebook processors. Think ARM competition, think Intel in handhelds and smartphones, and while there's no guarantee that this advance will see them there, but it's surely a big milestone on the way and one that widens the gap between them and the competition. **d**

### We had a short chat with R. Ravi-chandran, Director-Sales, Intel South Asia and put forth a few generic questions:

**Q:** Is this going to revolutionise CPU architectures – dramatically more cache, higher clock speeds to the tune of 4+ GHz for quad cores?

**A:** Intel's 3-D Tri-Gate transistors enable chips to operate at lower voltage with lower leakage, providing an unprecedented combination of improved performance and energy efficiency compared to previous state-of-the-art transistors. These capabilities give chip designers the flexibility to choose transistors targeted for low power or high performance, depending on the application. The performance can be achieved fundamentally

by CPU architecture, in combination with cache/architecture/size, and clock speed. For example moving to 22nm on Tri-gate Transistors will increase performance approximately by about 37% and active power reduction by about 50%.

**Q:** How is a Tri-gate transistor exciting for a consumer? Processors are a back-end device, and viewed as generally boring. I mean you buy a laptop, not a processor. In a line, why should people get excited?

**A:** Yes, you buy a laptop and it is primarily powered by a CPU – Central Processing Unit. Intel's 3-D Tri-Gate transistors enable CPUs to operate at lower voltage with lower leakage, providing an unprecedented combination

of improved performance and energy efficiency compared to previous state-of-the-art transistors, that will translate to end user needs like new sleeker form factors, increased battery life etc.

**Q:** Are we going to see dramatically cheaper options in the entry-level segment?

**A:** Intel traditionally introduces a new process on the core business products (PCs and servers) that have typically driven the majority of our silicon volume and capacity, allowing quick ramp and high utilisation of the fabs. As we look forward to future process generations, we will evaluate the silicon volume and capacity situation depending on the market conditions and customer needs.



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### Vikram Chauhan says....



Vikram Chauhan  
(IT Manager)  
Olive Health Care  
Daman (Gujarat)

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# How mobile networks work

*What really happens when a call is made from one mobile network to another? Instead of boring infographics, we try and explain it through the game of football instead...*



Imagine a call being initiated, just like a goalie looking to pass the ball to his player



When the number is dialled, the phone sends the request to the cell tower it's currently connected to – much like the goalie passing the ball to his defender to take forwards.



The call is now switched to a mobile switching centre (MSC). If the call is for another user in the same home network, the steps are retraced to the base station of the other user. This is like reaching the goal mouth of the opponents' goal and back passing all the way back to your own goal line.



The call request is forwarded to the base transceiver station (BTS) from the tower. This is like Xavi making a pinpoint pass through the midfield to another Barcelona player.



From the BTS, the call is connected to the base station controller (BSC), which allots the call a frequency channel to communicate over. This is akin to a football team keeping their shape, and making sure they stay in their positions (or their allotted "frequency").



If the call is for a user on another network (another operator) the call is passed from the MSC to a gateway MSC that switches the call to the appropriate operator's MSC. Think of it as losing possession to the other team.



Here's where football stops making sense in the equation. Instead of play turning around, imagine if both teams wanted to attack the same goal... The call is carried forward from MSC to BSC to BTS and all the way to the base station of the called party's location.



There's also a home location register (HLR) that each operator maintains, which knows which phone is where (or latched on to which base station). Also, an authentication centre (AuC) checks whether the subscriber being called has the required authorisation and credentials to receive calls. So if you haven't paid your bill or furnished proper documents, the AuC is the one who gives you the red card – like a referee does.



When all goes well, the correct subscriber is connected to, and you hear ringing at your end, as the networks finally connect the two phones – it's like a forward taking a shot at the goal.



Of course it usually turns out to be a tele-marketeer, trying to sell you something you don't really want or need. So it's usually the mobile operator and the marketing companies that celebrate most of the calls that get through!



The called party hears his phone ring. Think of them as the opponent's goalie. If the call goes unanswered or is rejected, it's like a goalkeeper's save, and you start from scratch all over again.



When the call is answered, it's like a goal being scored, and the celebrations begin with a "Hello!"







# The impossible frontier

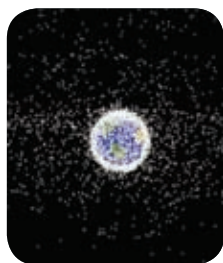
The final frontier may be the most exciting, and a trillion, trillion, trillion (*ad nauseam*) times larger than anything we've ever explored, but can we?

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

Those of us from the Trekkie generation might have spent all our lives dreaming about going into space, and travelling to a galaxy far, far away. But space travel isn't even remotely close to as easy as popular sci-fi has made us believe.

## SPACE JUNK

Although we've spoken a little about it before, we still have people asking how a tiny speck of dust or shrapnel that's the size of a pin can really harm us, let alone a spaceship. The problem is that we think of these things in very earth-bound terms. Those of us who have seen a car accident, even low speed ones, will know how easily metals buckle under stresses of a collision.



However, it's best if you think of a little drop of water – falling from a shower, you can't even feel it much, however, when falling from the sky, you feel a raindrop pricking you more. When you're riding a bike, the drops can sting like hell. Now speed up the raindrop to orbital speeds, and the rain drop will not sting, it will go through you, leaving a hole.

## THE SHEER DISTANCE

To get an idea of the enormity of the great black void consider this: On a lucky day like 25th of August 2003, when one of our nearest planetary neighbour Mars was the closest that it had ever been in the last 60,000 years, the distance was still 56 million kilometers. But that's just a nearby rock. The real good stuff lies much farther; in other solar systems and other galaxies. Going to those celestial bodies would be actual 'exploration'. Our



nearest star, Proxima Centauri is about 4.3 light years away. In regular units that's a smudge under 43 trillion kilometers! Let's write it in numbers for you to marvel at the zeros - 43,000,000,000,000. If we were to miraculously solve the other issues of space travel and decided to undertake this journey using the Saturn V rockets we used to get to the moon, how long would it take? We did the math and found out for you – close to a staggering 1,94,927 years!

## FRAGILE LITTLE HUMANS

While we may have mastered our earthly domain (just about) space is a very hostile environment. To sustain human life in space, a very controlled environment is needed. We need oxygen, water, and a near endless supply of food. To set up self contained ecosystem in a space vessel will be near impossible. Think of the soil, arti-



### 105 DAYS IN SPACE

An experiment called Mars 500, will test how human body will react to prolonged stays in a spacecraft, confined astronauts for 100 days. Here's a first hand account from the participants, who will be done with this only in November 2011!  
<http://goo.gl/1eQne>

### PREPARE TO FEEL SMALL

HD Timelapse footage of the VLT (Very Large Telescope) at the Atacama desert, Chile shows you a spectacular view of the know universe. The music and the spectacular visual display will not just move you, but will also make you wonder  
<http://bit.ly/m6Y2YN>

### SPACESHIP TWO

When the world's most flamboyant businessman decides to make a spacecraft, you take note. Richard Branson, founder Virgin group, discusses SpaceShip Two, Virgin Galactic's newest vessel and the world's first commercial spacecraft.  
<http://goo.gl/irLhT>

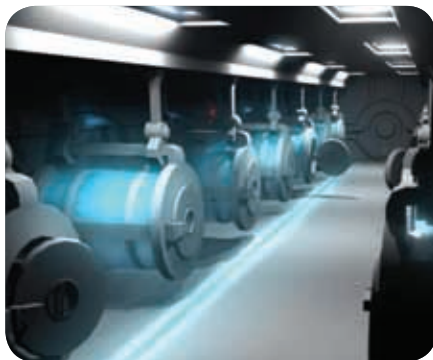
### ZERO GRAVITY IN SIN CITY

For \$5,000 you can experience zero gravity in Las Vegas. And no we aren't talking about substance abuse. Commercial weightless flights take passengers aboard a modified Boeing 727 to experience about a fleeting glimpse of weightlessness  
<http://goo.gl/3xDpB>

cial light, air and water filtration systems; it's mind boggling. Add to it, the effects of Zero G on the human body. Over prolonged periods of microgravity, astronauts have suffered loss of bone density, decreased muscle strength and even difficulty in breathing. Over time astronauts simply put, become clumsy. Imagine what effects that'll have on the success of a mission. Also, while the ship's hull can protect a crew from the sub-zero temperatures outside, it can't protect them much from cosmic radiation. There is a whole spectrum of radiation out there which our bodies will not react kindly to. In short the endless vacuum will keep reminding those on board that they have no business being there.

## SPEED

The fastest that anything can travel in the known universe is at the speed of light ( $3 \times 10^8$  m/s). If we eventually build a spacecraft that can indeed travel at that speed, it will still take hundreds (and even thousands) of years to reach places of significance. That's several lifetimes in human terms. How do we overcome this? Proposed solutions to both the distance, time and life-support problems include hypersleep or cryogenic freezing of the human body i.e. putting the body in a state of suspended animation. All cell functions are reduced



to a minimum level and the body is then revived when the destination is reached. The other solution is actually having generations of humans breed and procreate on board a ship. That is of course if postural instability from Zero G and rays of cosmic radiation don't render them infertile first! Maintaining a functioning society will also be problematic. Imagine the revolts, and the hippies trying to disrupt a mission!

## THE VALUE WE ATTACH TO HUMAN LIFE

A side effect of the human condition, is that we are creatures that value life! A hive mind on the other hand wouldn't think twice about sacrificing the life of a few drones for the greater good of the whole. If humans are ever to start taking steps towards the great abyss above, be sure we will face many failed missions and loss of life. The two biggest space exploration disasters (Challenger in 1986 and Columbia in 2003) collectively claimed the lives of fourteen astronauts. A small price to pay? Not many think so...

## PANDORUM

As a result of being confined to a fixed place sailors on long voyages at sea often showed symptoms of a peculiar kind of lunacy called Cabin Fever. The symptoms of this disorder included irrational behaviour, restlessness, frustration, uncontrollable laughter and even a desire to jump overboard. Of course if they did jump overboard these wayward sailors were rescued and put in the brig. In space you don't have that option. A 2009 movie called Pandorum explores this concept which is



a very likely possibility on space voyages that last many generations.

## THE EXPENSE

Even if all the world's countries forget their silly squabbles (over who owns a strip of land or which politician should resign) we would still not have the resources to build something that can carry people to the nearest solar system in over a hundred years. To give you an idea of how expensive space flight can be consider this fact: a shuttle launch today costs \$1.3 billion. It has been argued that if every square inch of cargo carried by space shuttles converted miraculously to gold on its return journey, the mission would still lose money.

## HOW WILL WE DO IT THEN?

Considering all the problems we've listed so far you wouldn't be wrong to think the era of manned space exploration came



to an end with mankind landing on the moon. The next leaps, which are exponentially larger, are not within our foreseeable reach. And so we have no option than to turn to our own creations – machines and robots – in our effort to reach for the stars. The comparatively lower cost and success of the two Mars rover missions are a clear indicator of the way forward. Even if we consider hypersleep for populating far away planets, robots will be our caretakers while we dream of life amongst the stars. Mankind has no option but to engage in deep space exploration by proxy, for a long time to come. **d**



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# The future of professional social networking

Read on to find out how corporate social media will change in the future.

Infancia Cardozo  
 infancia.cardozo@thinkdigit.com

**B**efore the growth of online networking this past decade, personal networking was the only way to expand your horizons. Rubbing elbows, attending public meetings and associating with strategic people used to be one of the easiest ways to take you to your chosen destination and grow bigger in your chosen profession.

Skip to the future: you walk into a meeting, subway station or airplane and see profile information about other people in the area, depending on privacy settings (of course!) – all made possible by mobile internet connectivity. You can set filters according to your criteria and if you find someone interesting who shares your interests, you can look up their profile and contact them.

Or consider this. You go to a party and see the picture and first name of everyone there with an iPhone – although they'd be strangers, you already share common ground with them! You could take the next step and initiate what could go on to be a long-lasting professional relationship. Once mutual friendship is established, you could stay updated and follow the progress of those within your circle of fellow professionals. This way, entrepreneurs could meet investors or bankers. In case you doubt the extent to which personal interaction has subsided in the recent past, ask an average professional when was the last time they went to the bank and met the cashier to draw some cash for buying that new cell phone. With online transactions

and services such as credit/debit cards, automated teller machines seem to have obviated the need for personal interaction. You simply need to log in to your online banking account and transfer money via the transaction of your choice.

## Current trends

The current scenario is a harbinger of things to come. Trends are in and out quicker than the seasons change. Currently though, we can see an inclination towards the following:

► **Collective knowledge sharing:** This is potent and powerful, and social media is making this knowledge easier to spread. LinkedIn's industry-specific forums are gaining popularity by the day, a fact that is evident in its growing numbers.

Twitter is another growing avenue for sharing of knowledge. Although internet users have the inclination, either due to lack of time or sheer laziness, more and more of them “consult” friends on networks such as Twitter for quick opinions, and reviews on choices they need to make. The key advantage such networks offer is the quick turn around time. In most cases, feedback and opinion is often instantaneous. This has the added benefit of cutting costs on surveys and polls.

► **Social gaming and branding:** Brand integrations with existing gaming platforms, as well as brands creating specific games to promote themselves is now as common as they get. Web sites such as FourSquare enable you to cash in on your check-ins by giving you





## Autopilot on Volkswagen cars

Volkswagen has proposed a new autopilot technology for its cars using a range of technologies from lasers to ultrasonic sensors.

## Facebook bars Cadbury

Facebook bars the India pages of Cadbury and F&M citing violations of their laws by posting contests on their walls.

coupons or freebies for local businesses in the vicinity of your recent visit.

► **Mobile socialising:** The proliferation of smartphones and their host of applications, affordable data plans, inbuilt web browsers and mobile-ready web sites are reasons for why you see more of your friends posting updates from their BlackBerrys and iPhones.

► **Recruitment, background checks, and freelancing:** Increasingly, companies are using these networks to find the most suitable candidates, and are directly contacting these passive applicants with unadvertised job opportunities, bypassing costly recruitment companies. With 29 per cent of the global workforce already employing this method, we'll soon have social media replacing HR and recruitment firms.

► **Marketing activities of companies:** An increasing number of Indian companies are using social media as an effective business tool, with 83 per cent firms in the country agreeing that without social media activity, marketing strategies cannot be successful, according to a survey by Regus. The global figure for the same is 74 per cent of companies. The last year has seen a rise in Indian companies using social networks, blogs, microblogs and forums to win new business. Internationally even, the rising awareness among businesses has seen social networking evolve from a nice-to-have to a necessity. Two-fifths (39 per cent) of firms globally and almost half in India (49 per cent) devote up to 20 per cent of their marketing budget to business social networking activity, as per the survey. Twitter, the ninth most popular site in the world according to three-month Alexa traffic rankings, is one of the most frequented site for this purpose.

## Back to the future

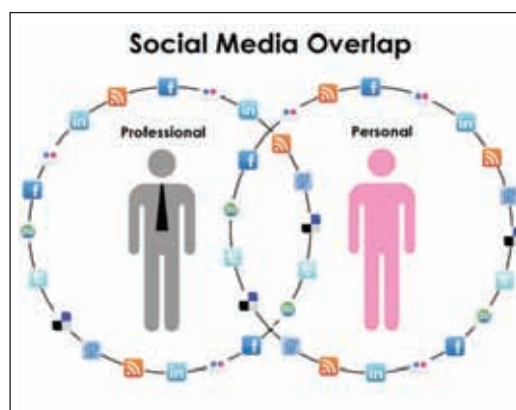
By 2014, social networking services will replace e-mail as the primary vehicle for interpersonal communications for 20 per cent of business users. "The rigid distinction between email and social networks will erode. Email will take on many social attributes, such as contact brokering while social networks will develop richer email capabilities," according to



Future mobile web social media

Matt Cain, research vice president at Gartner. He added, "While email is already almost fully penetrated in the corporate space, we expect to see steep growth rates for sales of premises – and cloud-based social networking services."

Ten years from now, mobiles (or portable devices) will be the world's primary connection tool to the internet. A recent study by Strategy Analytics, a global research and consulting firm indicates that the number of people using their cell phones to access the web has quadrupled over the past four years. A large portion of this increased online time is spent on social media web sites. As the number of phones in the world climbs to three billion, Gartner expects more users to spend significant time on the collaborative tools on these devices. In fact, for some parts of the world, these apps are expected to be the first or only applications they've ever used. These tools will enable users to



Personal vs. professional networking

## THREE USEFUL LINKEDIN FEATURES

**Improve your Google PageRank :** Customise your LinkedIn profile URL. To do this, go to your "Edit Profile" page. Use a combination of your first name and last name. For example, <http://in.linkedin.com/in/firstname>. This way, not only will your visibility on web searches increase, but it also makes it easier to link to your profile in your email signature or on your business card.

**Map your network :** InMaps helps you to map your network with an interactive visual representation. It represents a map of your professional universe that helps you see how all your connections are related to each other. It's a great way to understand the relationships between you and your entire set of LinkedIn connections. You can better leverage your professional network to help pass along job opportunities, seek professional advice, gather insights and more. Your InMap can also be displayed on your profile enabling the members in your network to see the entire set of connections.

**Company Pages :** LinkedIn company pages help bring a brand to life by showcasing standout products and services to millions of professionals turning to its networks for help in making critical business decisions every day. Get to know more about the company by looking at the unique data from the LinkedIn network. Company pages also give key statistics on the demographics of the company's current employees, including your connections. Statistics of these employees include years if experience, educational degrees acquired, etc.

handle far more conversations within a given amount of time than their desktop PCs or laptops mostly due to ease of use. As iPhone impacted user interface design on the desktop, the experience in mobile phone collaboration will dramatically affect PC applications, many of which are derivatives of decades-old platforms.

Another trend expected to be seen in the future is being paid to use professional networks. With brands steadily moving into the social media space, a day will soon come when brands will allow you to be reimbursed or paid for promoting their brands for simply using their space.

Going forward, the lines between business networking and personal networking will be so blurry that it will be difficult to tell them apart. **[4]**



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## Windows 8 and HTML5

Windows 8 will allow developers to create applications using web standard technologies such as HTML, CSS, and JavaScript

## Firefox 5 released

Firefox 5, the first version of Firefox to be released under the new rapid release process is now available with support for CSS animations

Developer corner



Kshitij Sobti

kshtij.sobti@thinkdigit.com

Previously even simple animations in HTML required complex JavaScript code, and most complex animations needed Flash. Of course JavaScript is still incredibly useful if there has to be any form of interactivity, but new CSS3 features take a lot of the pain away. Let's look at two CSS3 modules – Transitions and Animation.

### CSS transitions

The “:hover” selector in CSS already made it possible to make a page layout dynamic without requiring any JavaScript. Essentially, the “:hover” selector can be used to define the CSS styling of an element when a mouse hovers over it. It can be used to change the font size, the font / background colour, the border size / colour / type etc.

Try this, create an HTML file with just the following in it:

```
<!DOCTYPE html>
<html>
<head>
<title>Playing with CSS3</title>
<style type="text/css">
#div1 {
background-color: red;
}

#div2 {
border: solid thin black;
}

#div1:hover {
background-color: green;
}

#div2:hover {
border: dashed thick black;
```

```

}
#div3:hover {
font-size: 28pt;
}
</style></head>
<body>
<div id="div1">Background
colour sample</div>
<div id="div2">Border sample</div>
<div id="div3">Font sample</div>
</body>
</html>
```

If you save this in an HTML file (or use the files provided on this month's DVD, in the Deploy section), you'll see three rows. The first row is written in black on a red background, the second has a border, and the final one is just plain text. On moving your mouse over any row the formatting changes. The first row's background becomes green, the second row's border style changes and the third row's font size increases. You may notice that this change is rather jerky.

Change the CSS style for “div1” in the original file to:

```
#div1 {
background-color: red;
-moz-transition-duration:
3s;
-webkit-transition-duration:
3s;
-o-transition-duration: 3s;
transition-duration: 3s;
}
```

Now, when you hover your mouse over the first line, the colour will smoothly go from red to green. You'll notice we have “transition-duration” multiple times with different prefixes. To know why this is

CSS3 has made the web a much more dynamic place with support for transitions and animations. Let's take a look at these two new features.

needed, see the box *Vendor prefixes in CSS* on Page 66.

In this example, all we gave was the duration of the transition, i.e. three seconds, and the browser automatically animated all changed properties – those that are possible to animate obviously. A large number of CSS properties can be included in this transition, and it's even possible to specify which properties to change, and durations and easing functions for each.

Let's look at another small example. Here, on mouse hover we'll change the font and background colour, and add a shadow. We'll animate the background colour change over two seconds and the shadow over 500 milliseconds, but we won't animate the font colour. Here's the relevant part of the code (without the HTML structure):

```
HTML:
<div id="div1">Just a sample sentence</div>

CSS:
#div1 {
background-color: rgb(204,
204, 204);
transition-property: box-
shadow, background-color;
transition-duration: 500ms,
2s;
}

#div1:hover {
box-shadow: 3px 3px 4px 1px
black;
color: rgb(255, 255, 255);
background-color: rgb(102,
102, 102);
}
```

Please take note that this code as it is won't work! You'll need to add a prefix for each browser you want to use this on. So for Chrome, copy the “transition-property” and “transition-duration” lines and add “-webkit-” like before. We've left them out in this example and the ones that will follow to avoid redundancy.

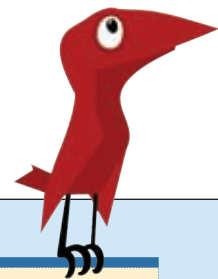


## Firefox Add-on SDK released

The first version of Firefox Add-on SDK, which allows developers to create Firefox add-ons using web technologies, has been released

## CSS 2.1 now a standard

After many years of work, CSS 2.1 has been standardised, along with the CSS3 Color module



After “transition-property” we have a comma-separated list of properties that we wish to animate. After “transition-duration”, we’re providing the transition durations for each specified property in the same order as the properties. If we had specified just one duration, it would be used for all properties.

There are two more properties of transitions:

- **transition-delay:** You can use this to specify a delay before the animation is triggered.
- **transition-timing-function:** This function is used to calculate intermediate values between the two transition points. Predefined ones are ease, linear, ease-in, ease-out, ease-in-out. Or you can specify your own via cubic-bezier (a, b, c, d) where a, b, c, d are numbers. Transitions need not be triggered only on hover. If the CSS styles of an element change under other conditions (using JavaScript), clicking for example, they will be animated if a transition is specified.

## CSS animations

Transitions and Animations share a lot of similar concepts, so let’s first look at the common elements. Just like transitions, animations have a duration (“animation-duration”), a delay (“animation-delay”) and a timing function (“animation-timing-function”).

Animations have two components: first, a description of the animation and second, a set of keyframes that define how the animation occurs over time.

Animations are executed immediately on all elements matching their CSS selector. This might not be desirable if (for example) you wish to apply an animation when someone clicks on a Play button. For that, you’ll need to use JavaScript to apply the animated class when required.

Here’s how you can specify an animation on a div with an id of “animated”:

```
CSS:
#animated {
  animation-name: test-animat-
tion;
  animation-duration: 4s;
  animation-delay: 3s;
  animation-iteration-count:
10;
  animation-direction: alter-
```

## VENDOR PREFIXES IN CSS

A standard is only useful if it’s implemented. However, standards are often implemented even before they’re fully defined. Sometimes, there are differences in how they’re defined in different browsers. As such, new CSS features under development or in the process of standardisation are implemented with vendor prefixes.

Each browser engine uses a different prefix: Mozilla’s Gecko engine in Firefox uses a prefix of “-moz-”, Opera uses the “-o-” prefix, and Microsoft’s Internet Explorer uses the “-ms-” prefix. Since Safari and Chrome use the same engine (WebKit), their prefix is also the same “-webkit-”. Initially, to use the same CSS feature on multiple browsers, you’ll need to define the same property multiple times – once for each browser. However, eventually the prefix will be dropped, and you’ll be able to use the same feature on all browsers without a prefix. Since prefixes will be eventually dropped, it’s a good idea to define the property without a prefix as well, to ensure it continues working even when the prefix is dropped.

```
name;
}
```

Here we’re specifying an animation name, duration of four seconds, and a delay of three seconds. Via the iteration count we’re specifying that the animation has to run 10 times. The animation-direction property is set to “alternate” to specify that the animation must reverse when completed. Thus, the animation will go forward, and in the subsequent iteration will play backwards, and so on.

This, of course, has said nothing of what the animation itself will look like. That we specify using the “@keyframes” keyword as follows:

```
CSS:
@keyframes test-animation {
  from {
    width: 10px;
    height: 4px;
  }
  25% {
    width: 50px;
    height: 4px;
  }
  to {
    width: 50px;
    height: 200px;
  }
}
```

That is, @keyframes followed by the name of the animation, here “test-animation”.

These set of keyframes will accomplish the following:

- In the beginning, the height and width of the div will be set to four pixels, and 10 pixels respectively.
- From the beginning to 25 percent of the way through the animation, i.e. after 1 second, the width will increase to 50 pixels, but the height will remain the same.

- From 25 percent till the end of the animation, the width will remain the same, but the height will increase to 200 pixels. Now let’s create a small animation of a red square moving between two points:

```
CSS:
#animated {
  animation-name: test-animat-
tion;
  animation-duration: 4s;
  animation-iteration-count:
10;
  animation-direction: alter-
nate;
  animation-timing-function:
linear;
  background-color: red;
  border: thin solid black;
  width: 20px;
  height 20px;
  position: absolute;
}
@keyframes test-animation {
  from {
    left: 0px;
  }
  50% {
    left: 300px;
    width: 50px;
  }
  to {
    left: 600px;
  }
}
```

This will bounce the square between 0px and 600px, while increasing the width to 50px in the middle.

CSS Animation like transitions, is still developing as a standard, so in all examples we’ve given here you should add a prefix, for each browser. You can use them on WebKit browsers and Firefox.

Animations are used in abundance on the web, and it’s only a matter of time before

# Optimizing Business Performance

## With SAP® Crystal Solutions

### CEOs Need Precise Business Intelligence to Run the Company Well

But Too Often Face an Ocean of Data Instead

Business intelligence provides CEOs with timely, critical knowledge so they can make the most informed decisions for the business whether for day-to-day operations or for strategic planning.

Senior managers need accurate information to be aware of the business performance. Information must be extracted from data floating in the systems across many departments of a company. The information must be presented in a concise yet comprehensive manner highlighting critical information for examination and deliberation by the management.

The management today not only must run their businesses well on a day-to-day basis, they must be preemptive in exploring what-if scenarios of situations. In a complex environment where partners and suppliers are increasingly interrelated, any contingencies in one area of business could have far-reaching consequences that effect other parts of the company. The recent disasters in Japan, for example, have disrupted global supply lines, production, and sales for many companies. Some companies that were ill-prepared for such disruptions have found themselves at the brink of failure.

### Difficulties in Getting Good Management Information

The rapid development of IT has resulted in companies quickly rolling out new information systems dedicated for specialized purposes in different parts of the company over the years – often with little regard to integrating these systems.

- Problems Extracting Data from Silos
- Slow, Laborious Collection Process
- Incomprehensible Numbers

### What CEOs Require

To keep up with the rapid pace of business management today, CEOs and their senior executives need a more responsive and nimble business intelligence infrastructure. Like:

- Automatic Data Access
- Information on Demand
- Easy-to-Understand Presentation
- Automated Reports Produced with Templates
- Easy-to-Use Interactivity

### Information CEOs Need, When They Need It, in the Right Format

The SAP® Crystal solutions are powerful software that will give an ideal overview of their company, with timely and accurate information about the business presented in a graphical and easy-to-grasp way. The software provides on-demand, actionable

information that the senior management of a company can use to optimize business performance, and an interactive dashboard with the pertinent information and business modeling built in to study risks to the business using what-if scenarios.

With **SAP Crystal Reports Designer software**, data from the different databases can be readily tapped for collation, reporting, analysis, distribution, and sharing. Information from any object linking and embedding database (OLE DB) or open database connectivity (ODBC) data source (for example, Microsoft SQL, Oracle, MySQL, or IBM DB2) can be accessed without coding.

The **SAP Crystal Dashboard Design software** packages the information into personalized graphical reports that are easy to understand. The reports contain all the critical information necessary for the management to effectively drive the company.

The interactive user interface for the dashboards employs sliders, gauges, and dials that enable the CEO and senior executives to visualize and manipulate parameters included in the report. There are over 250 built-in components such as charts, maps, dials, gauges, and other visualization components. Built-in maps are also available for geographical presentation and analysis of information.

The **SAP Crystal Server software** manages the distribution of reports and dashboards and helps ensure that the information is secure, so that recipients view only the data they have the rights to access – whether it is inside the company firewall or over the Internet. The comprehensive range of security management reduces the cost of ownership by providing fine-grain control over every aspect of rights and access control for the reports.

The reports can be scheduled for automated delivery. SAP Crystal Server frees you from the tedious, time-consuming task of manually distributing reports to multiple recipients.

### Why Should You Consider SAP® Crystal Solutions?

Ask yourself these questions:

- Do you need to deliver compelling and visually stunning reports to your users?
- Do you need your reports to be delivered online and on schedule?
- Do you want these reports to be developed with less training?
- Do you need these reports to be live and interactive and allow the user to select parameters, drill down to details, and link to other reports?
- Do you need to quickly develop live dashboards without coding?

If the answer to any of them is yes, find out how SAP® Crystal solutions can help you today. Visit [www.sap.com/sapcrystal](http://www.sap.com/sapcrystal)



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SAP Crystal Solutions (advertorial)

**New breakthrough research**

The Chalmers University of Technology, Sweden will help reduce optical amplifier noise to a record low

**More from the cloud**

Simply called Best Buy Music Cloud, it requires you to upload your own music and have iTunes.

# Of Motherboards and the military...

**In a freewheeling chat over coffee with Jack Cheng, we got the lowdown on everything from the latest Z68 chipset to how motherboards are actually made**

Siddharth Parwatay  
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**d Tell us a bit about Z68; improvements, what's different in your implementations?**

In our Z68 series the major highlight of course is based on special features from Intel; whether it's swappable graphics, or Smart Response technology. For our Z68 boards we also took some of the best things from P67 as well. For example the ASUS UEFI bios is a little better than competitors. Our competition has simply put just an application and claims it to be a BIOS. Who is going to use this? After you boot into Windows why would you change these settings? And even if you do, you will require a restart, so you see the irony there. With these hybrid EFI implementations you can only install OS from DVD drive connected to the native SATA port. USB flash installation is a no go. USB optical drive will fail too.

Another new thing is smart response. In order to use smart response you have to have spindle hard drive and SSD of course. Many reviewers tend to use any hard drive and any SSD, and complain about no performance improvement. Being a pure software implementation, it's necessary for the performance of the SSD to be at least double of the spindle HDD.

Switchable graphics is the next area. Normally while encoding your discrete card will be at 100 percent load. But by using integrated graphics it will create 10% of the CPU load and no load on the graphic card. Rendering wise I have to say, Intel rendering is good but it's no match with high end NVIDIA



Jack Cheng, is a member of the ASUS HQ motherboard team. He is a motherboard expert and the writer of all ASUS motherboard media reviewer guides.

card. But with internal graphics you save power and you can actually do encoding while you play Warcraft.

I just outlined the difference between d-Mode and i-Mode. So on our high end boards we don't provide the i-Mode at all. For two reasons. One is we don't see any need and two, because they have way too many features, we cannot fit any more. I personally use d-Mode. The only purpose I see of i-Mode is I can disable lucid and run 6 monitors while enable lucid any-time and play my games on one monitor.

**d Here's a scenario. Suppose you're rendering something and you're using i-Graphics to render but using the d-Port, is there a performance drop?**

There is not going to be a performance drop in terms of GPU. Even if there is, it'll be very minor. All the integrated pipelines are inside the CPU, you will see some impact on CPU performance as CPU packets will have to wait.

**d Of course no one would want to do it, but out of curiosity what if you do the inverse? Have the Discreet card do the rendering or encoding and push it through the i port? I've never tried it (laughs)**

**d What are the various steps involved in bringing a motherboard to market.**

Intel has a roadmap of when a chipset is going to be announced and when it's going to be available to motherboard manufacturers. Even before we get a reference board we have to think about things like, "Intel is giving us this, what can we add on from there?". We have an innovation team who thinks of what to add on, and a team that decides whether those innovations have actual applications. If there are no applications, they are rejected. We also keep an eye out for reports from reviewers and users about features from previous generation boards.

**d What about competition?**

Of course. We study every generation from competitors, but rather than copy, we try to improve upon the good things.

**d How drastic a performance difference can a user experience, if he goes for a ROG board as opposed to a standard board with overclocking features?**

Without overclocking everything is going to be the same. Same chipset, same everything. However, overclocking is where the difference comes across. Generally speaking with the best components you can get a 10% performance boost on overclocking with Sandybridge. And stability for gaming. Our tough series goes through temperature tests, stress tests, while gaming boards go through torture tests!

**d Speaking of which when motherboard manufacturers say "military" grade is it a marketing term?**

No our military components are actually used by the US army. It's not a marketing term. These components have to go through even more rigorous tests chamber tests like electric shock, vibration tests. Entire boards have to endure the tests not just parts on the board individually. Others are just claiming to be military only recently. **d**



## Cinebaap

On purchase of select models of Philips Home Theatre systems, Philips offers unlimited movies for 12 months from BIGFlix, with one free DVD

## Open Invention Network

Philips is a founding member of the Open Invention Network, which licences its patents royalty free

Industry Connect

# Changing trends in digital consumption

## We spoke to Gunjan Srivastava from Philips Consumer Lifestyle about everything from audio to new strategies

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**d** Philips has always been associated with audio. Can you briefly tell us about your 'Obsession with Sound' campaign?

You're right, sound has always been a crucial part of the Philips heritage, and its continued obsession with producing authentic sound has made it so well respected among sound lovers.

We're obsessed with delivering authentic sound and have developed technologies and innovations that deliver the best sound to the listener.

Philips offers a complete range of home audio products such as home theatres, sound bars, docking stations, home audio systems and on-the-go products like GoGear MP3 and MP4 players, sports range headphones, notebook accessories and other accessories. The Philips people who develop the audio and video products put effort into creating a range of products designed to let you experience sound as the artists intended it.

'Obsessed with Sound' features the stories of Philips' designers and engineers behind the Philips 2010 home and audio collection.



Gunjan Srivastava, Director - AVM, Philips Consumer Lifestyle India

Hear about how Julien Bergere and his team experimented and broke the rules of speaker design to develop the Philips SoundSphere Speakers in the new Hi-Fi Micro System?

**d** As a trend, we're witnessing a shift in how media is consumed; take the HMP 3000 product we saw recently. Do you see any other trends in the digital entertainment space? And what products can we see from Philips in the future that will be in line with it?

Yes, there's been a notable change in the way media content is being consumed and how the digital entertainment space is revolutionizing.

There has also been mushrooming of digital stores and applications to buy

and synchronize music and other data. In this space, Philips has collaborated with Songbird to use its software. Philips Songbird helps sync digital content on Philips GoGears. It's an innovative and easy to use media player which allows users to discover, play and sync their media.

**d** What is Philips' take on outsourcing in the manufacturing sector?

What product segments do you plan to outsource and how do you ensure product quality is maintained?

We do outsource some of our manufacturing categories in India. All our co-makers are our strategic partners and we ensure that they follow and maintain process and quality standards as laid down by Philips. We have a dedicated in-house team at Philips that selects, manages and monitors the our co-makers and their performance.

**d** How significant is India as a market in the audio/video segment?

Philips Audio Video Multimedia (AVM) category contributes the most to the overall consumer lifestyle business in India. In AVM, we continued our leadership position in DVD for 12 consecutive months, closing the year with a market share of 24 percent in India.

**d** We've seen integrated audio solutions from Altec Lansing, Harmon Kardon, JBL, Dynaudio, Wave, etc. Why don't we see Philips speaker systems in laptops?

This is an interesting market but there are no firm plans for this. **d**



# Ching's Secret

Instant, Hakka & Pad Thai Noodles,  
Soups, Sauces & Miracle Masala

Ching's Khao, Baki Bhool Jao



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**R**ecently, we paid a long overdue visit to a friend who posts introductions to his family. He proudly showed us his new 4 Mbps Airtel broadband connection. During our visit, we saw his parents taking turns at the PC. Even his older brother wanted to have a go, his (much slower) data card and netbook forgotten. Upon asking his pained reply was that now that tasks like watching videos on YouTube, downloading music and playing games were a snap, everyone wanted to have a go, and the only time he got on his PC was when everyone went to bed, after 11.30 pm. Do you face a similar situation? Or, do you live

alone, but have multiple gadgets vying for some 4 Mbps love?

A wireless router may not cure your family's data glut, but it will help you share a single internet connection. You could be downloading content on your PC, surfing on your notebook, as well as updating your phone over a single Internet connection wirelessly, so that you can move around your house amidst it all. Or, you could stream a movie from your PC in your bedroom to your TV in the hall. That's not all – a router will provide an additional layer of security for all the devices connected wirelessly to it, preventing unwanted access and potential hackers.

This year, we see an emerging trend for small routers with support for connecting to 3G data

cards. While none of the routers had data cards slots built in, some had a USB port that was only meant for a data card, and doesn't work with regular thumb drives or external HDDs. Sharing a single 3G connection wirelessly might not seem a big deal at the moment, given the relatively poor 3G coverage in India, but as this changes, such devices will surely gain popularity. Another rising trend is the inclusion of a USB media slot to connect to external drives, for media streaming. The 802.11n standard is responsible for this change, because now, given the extra bandwidth, it is possible to comfortably stream even full HD 1080p content, from a PC to a notebook, to your HDTV and not to mention setting up a wireless media server without a NAS drive.

### **ADSL: WHERE RJ11 AND RJ45 MEET**

These routers have inbuilt modems and their WAN port is the RJ11 type that is the same as your landline telephone cable. Basically an ADSL router is for you if your ISP provides your connection via a telephone line. If your internet interface is RJ45 (LAN) based you will be better served by a regular router whose WAN port is also RJ45. ADSL routers are becoming a little rare, and most manufacturers will have only one or two models, most of them without any of the advanced features such as USB port(s), and dual simultaneous band. We received four ADSL routers and they were all basic models, although all supported the latest 802.11n protocol. Since

# Share without a Care

With faster broadband plans, and more and more people getting hooked to social networking and the internet, routers are making a strong comeback. In this test, we pit 30 of the best routers against each other, with the sole intention of finding you the right one



## Slim Asus U36 gets better hardware

The 19mm thin 13-inch U36 ultraportable will soon run on a standard voltage Core i5 processor and still last up to 11.5 hours on a single charge.

**Router test**



Dlink DSL2750U

the price range varied from ₹1,699 to ₹2,550, these were pretty easy to slot into a single category.

The Buffalo WBMH-HP-GN impressed us with its compact dimensions and attractive looks in stark contrast to the rather bulky and plain looking Digisol DG-BG4011N. The Dlink DSL2750U was the only one that didn't elicit any initial reactions owing to its rather generic look – a beige box with a single antenna. One of the issues with the Buffalo WBMH-HP-GN is the placement of the reset button on the bottom of the router. With the stand in place, the reset button gets blocked. Buffalo's interface is a little intimidating to a newbie, and while Dlink's interface looks simple at first, when one gets into the sub menus it is every bit as complicated. The SMC SMC7901WBRA2 looked nice, and is very well built, but had no indicative lights of any sort. It also featured a single LAN port.

In terms of performance, none of these ADSL routers really impressed. The Digisol DG-BG4011N was, by far, the most disappointing. It failed quite a few tests in zone three, and while moving between zone two and three, could not maintain wireless coverage to our test notebook. While there wasn't much sense in awarding a winner amongst just three devices, we realise that many of you will be looking for an ADSL router. If so, the Dlink DSL2750U should be your best bet, it's really cheap, and does a fair job. We're awarding it our Digit Best Buy.

### UP TO ₹2,500: ENTRY TO A WIRELESS HOME

Surprisingly we found this category quite hotly contested, and some very decent options emerged. Normally, good wireless routers are priced at the 4,000-Rupee mark, but it seems competition has hammered MRPs into shape. There were six routers in this category – two from Linksys (Cisco), and one each from Belkin, Buffalo, Dlink and Netgear. Unsurprisingly, the only router supporting the older 802.11g protocol was in this category the Netgear WGR614. Normally, you'd be tempted to dismiss a G-router as a fossil, but this model held its own.

### Looks and features

The Dlink DIR-524 was a simple looking black box, with a single

antenna, while both the Linksys WRT120N and E1000 have the same futuristic tapering shape with a wide halo-like rim on the top that is reminiscent of something out of a George Lucas film. Both these routers, like all other Linksys devices do not have antennas – Linksys relies on internal antennae to do the job of transmitting wireless signals. One thing we noticed with the Linksys WRT120N as with other entry-level Linksys routers was that any firmware changes take 10 to 15 seconds to apply. The E2000 and E3000 are faster, with no message like "please wait for 10 sec". Also rather peculiarly when transferring data the WRT120N makes a slight sound, like as if a small fan inside were speeding up, though we doubt there would be a fan in the small housing. This is only when data is being transferred/streamed wirelessly and not while performing low bandwidth tasks like browsing. Both the WRT120N and E1000 get quite hot during operation, though not alarmingly so.

Like all Buffalo routers, the WCR-HP-GN was really slim, though it has a grey colour, as opposed to their de facto black. Also, the antenna was a pole type one and long, in contrast to the typical flat, shorter antennae seen on most of their routers. The Netgear WGR614 is their typical design with a white plastic body

and transparent plastic trim around three sides, and a slightly curvy body with a single antenna. Belkin's Basic was a small router but follows the same design as the other Belkin routers, with a single LED on the front capable of multiple colours conveying all



Belkin Basic

you need to know. While it's cute, it's also little more than a simple looking grey box and with the base being part of the unit, one cannot set this up flat on a table nor wall mount it. Belkin has chosen a menu system for all their routers and we must say it's a positive move – everything looks much better laid out and a lot more intuitive and definitely more newbie friendly.

### Performance

The Linksys WRT120N showed an interesting spike in data

# Staying Connected...

**DIGISOL™**



## No online multiplayer for GRID

Codemasters has shut down online gameplay of its GRID franchise, as a third party didn't renew its contract to host the servers.

## Kinect SDK for Windows out

Microsoft has released Kinect SDK for Windows developers. It's still in beta, free to download and requires Windows 7.

## HOW WE TESTED

We divided the routers into 3 types:

1) ADSL routers

2) Regular routers

3) Routers with 3G supporting USB ports

For the purposes of testing, each router was connected to one notebook via a wired connection, and to the other notebook via its wireless adapter. File transfers, media streaming and such was done from the notebook connected wirelessly. All media and data files were placed on the primary laptop connected to the routers via LAN. This way, we eliminated any bottlenecks from the router to the data, thereby testing only the connection between the router and the notebook connected wirelessly. Obviously, the adapter on the secondary notebook would also be a bottleneck, but there is no way around this. Also remember that we measure our scores in megabytes per second and not megabits. The 802.11n rating specifies 300 mbps, or 300 megabits per second. When we measure a score of 5 MBps (megabytes per second), we mean 5 x 8 or 40 mbps, since one byte equals eight bits.

The primary notebook consisted of a Core i5 480M CPU, 4 GB of RAM, and a 500 GB hard drive via a CAT 6 cable. The secondary (wirelessly connected) notebook had a Core i5 480M, 3 GB of RAM, and a 320 GB hard drive. Each router was reset to its factory settings before testing. We disabled DHCP on each of the routers and assigned each notebook adapter a static IP, which we changed to match the default IP range of the router. Then we disabled wireless security. We forced the routers to 802.11n, except for those that didn't support the protocol. If a transfer rate was mentioned, we set it to its maximum value. Wireless signal strength was set to 100 per cent, and if the router supported dual simultaneous band, this feature was enabled with the same network SSID. In Windows 7, we used the "home network" setting, to enable data and media sharing.

As usual the secondary notebook was moved through three zones, in increasing magnitude of signal attenuation. Zone 1 was a snap, with the notebook placed within 6 feet of the router and an 80 per cent line of sight. For zone 2 we moved the notebook so as to get a single thin cement pillar and 3 wooden partitions between the router and the secondary notebook. For zone 3, we moved the notebook to the first floor, (the router was one storey below), with the same lateral gap between them as in zone 2, although now there was an entire cement + steel roof with mezzanine that was at least 2 feet thick. Thus zone 3 was the most stringent of our zones, and naturally we assigned greater weights to scores in this zone. The approximate distance between router and notebook in zone two was 20 feet, and in zone three was 30 feet.

Our benchmarks consisted of Performance Mark 7's network test, whereby data is streamed between the two notebooks. Obviously, the wireless network is a lot slower than the LAN connection, and the network adapter on the secondary laptop is constant, so the difference in speeds can be purely attributed to the different routers used. For our real world tests, we transferred data between both notebooks. The sequential test involves a single 50 MB .RAR file, whereas the non-sequential test consists of multiple small files, of varying sizes and types that total up to 50 MB. Finally, we streamed a movie wirelessly in each of the three zones and assigned a subjective score on 10 based on how each router performed. 8.75 and above out of 10 meant there was basically no issue with playback, even with play/pausing, and skipping through the movie file. We tried skipping forward and backward. A score of 7.5 to 8.5 meant there was problem during skipping with some minor audio sync issues and video taking a second or so to resume after a skip. A score of below 7.5 meant the video took up to 3 seconds to resume with some audio clipping, while a score below 5 meant that the experience was quite poor. Routers that failed to play the file or lost connection to the wireless network got a 0.

throughput in zone two over zone one, but in zone three it lost signal completely and wasn't able to complete the Performance Mark 7 test. It also failed our real world transfer. Its sibling, the E1000 was slower in zone one and two, but managed to complete the test in zone three as well. Incidentally, the Linksys E1000 performed flawlessly at streaming video in zone one. The most surprise performer, however, turned out to be Netgear's older 802.11g supporting WGR614. With good scores throughout zones, it aced the video streaming tests, shaming many faster and costlier routers.

Despite its decent looks and rather large antenna, the Buffalo WCR-HP-GN performed poorly. It failed the file transfer in zone three, and even in the other two zones, speeds were snail-like. In stark comparison, the tiny Belkin Basic was quite a speed demon. With speeds of 3.6 MBps in the

sequential transfer in zone three and 3.27 MBps in the non-sequential test the Belkin Basic shames a lot of the other costlier routers. The only place it lost out was in the movie tests – it did well, but when skipping through the video, the audio dropped for a couple of seconds before kicking in.

If you're shopping for a basic router it's hard to look past the Belkin Basic – for the price of ₹2,399, the performance was anything but basic – it outperformed some routers costing twice as much. It wins our Best Buy award, a unanimous decision that its performance numbers amply support.

### BETWEEN ₹2,501 AND ₹5,000: LESS FOR MORE?

This category consisted of nine routers, three from SMC, two from Belkin and one each from ASUS, Buffalo, Netgear and ZyXEL. Most of these routers

featured USB ports, some of them for exclusively for use with 3G data cards, the others for media sharing. Routers with the media sharing feature are interesting options, for any media attached to them can be accessed like a shared device over the network, sort of like a NAS drive. Any media files added to the public folder of the drive can be streamed wirelessly to a PC or a notebook. Content can also be blocked, and most routers will also allow sharing of this drive online, as an FTP. Generally, drives with USB ports used to be priced over the 5,000-Rupee mark, but as with all things computer, they've become more affordable.

### Looks and features

The Belkin Surf and Share look similar, but the Surf is identical in size to the Basic, while the Share is slightly larger router, similar to the Belkin Play. Other than that,

the Share has a single USB port. Within the routers firmware, another difference becomes visible – the Share is faster than the Surf, and while the Surf takes up to 20 seconds to apply a setting, whereas the Share takes only 6 seconds. The Netgear WNR2200 looks smart. Its got a nice stand that integrates well into the router giving the appearance of a single piece, and the router can be wall mounted as well as being laid flat on a table. There are dedicated buttons to turn off wireless radio and enable WPS. It has a single USB port that can be used for media and works with a thumb drive as well as an external HDD.

The ASUS WL-330N3G was the tiniest router in the entire test. In fact, it can fit into your pocket. The single USB port is meant only for 3G data cards and doesn't support hard drives. The SMC SMCWBR14S-3GN looks identical to the SMCWBR14S-

## Wordpress.org hacked!

After attacking Wordpress.com, hackers have broken into Wordpress.org's code and plugin section, compromising security of the free CMS.

## Siemens debuts hybrid aircraft

Siemens introduced the first serial hybrid electric aircraft at the Paris Air Show

Router test

N3 but has a USB port for media sharing. While simple looking, these routers have rather functional LED indicators on the front, but no buttons or switches of any sort, not even for WPS. The ZyXEL NGB-419N has a very different menu layout compared to the other ZyXEL router we tested. Also there is no setting for changing the protocol between B/G and N – this setting is not even visible. It also prompts for a new password the moment one enters the router firmware, though this isn't necessarily bad, rather it's a plus, because many people forget to change the default password, thereby leaving

But the router that just begs for attention with its rather unique broad antennae is the Buffalo WZR-HP-G300NH. These antennae will fold inwards to rest atop the router but when raised give the appearance of some space age device. They're not removable though this isn't an issue since they don't protrude when folded. Besides the AOSS security button (Air-station One touch Secure System), which is Buffalo's equivalent of WPS but is a little more secure owing to the creation and exchange of a 64-bit WEP key that is secret, unlike a predetermined key that WPS uses.

in our transfer tests, it suffered during video playback, where our 1080p copy of Avatar took up to 2 seconds longer to cache after we skipped through the file.

The most stable performer throughout the zones was the Buffalo WZR-HP-G300NH that managed over 1.5 megabytes per second in zone three and over 5 megabytes per second in zone one across both sequential and non-sequential transfers. The Netgear also performed well in zone one, but in zone two and three, it's clear that signal attenuation is killing its data transmission rate. The fastest overall router in this group was the ZyXEL NGB-419N.

But the fastest router was also a bit costlier at ₹4,400 than the cheapest one in this group, the SMC SMCWBR14S-N3 that offers 80 per cent of the performance at ₹2,950 – making it much better value for money, and the winner of our Best Buy award.

## BETWEEN ₹5,001 AND ₹8,000: WHEN SPEED IS THE NEED

Routers within this price range typically boast of advanced features like USB ports for media streaming, and dual simultaneous band – a technique that creates two different wireless networks, on two different frequencies, typically 2.4 GHz and 5 GHz. This category was sparsely populated – 5 routers, two from TPLink – a company we've not seen before, and one each from ASUS, Linksys and Dlink.

## Looks and features

Both TPLink routers are very attractive, with a piano white finish, black border on three sides and the brand name nicely embossed on the top. While the TL-MR3420 features a single USB port for 3G cards, the TL-WR1043ND has a more common media-streaming function off its USB port. The former is also smaller, and features two



SMC SMCWBR14S-N3

their networks vulnerable. The interface is radically different and each item under a menu is well laid out and the menu options quite self-explanatory. Externally, it is nice looking – a white coloured router with bright, large green indicator LEDs. There is a wireless off button on the rear, something other routers miss.

## Performance

In zone one and zone two, the ZyXEL NGB-419N blows everything else out of the water. However, it dips in zone three, betraying a lack of signal strength and antenna coverage. While the Belkin Share outdoes its cheaper sibling, the Share in zone three

## Contact sheet

Brand	Phone	Email	Website
D-link	+91-22-2659 5700	divya.shetty@dlink.co.in	www.dlink.co.in
Linksys	1-800-419 5797	consumersales-india@cisco.com	www.linksysbycisco.com
Belkin	+91-124-489 8800	indiamarketingsupport@belkin.com	www.belkin.com/in
Netgear	+91-11-4120 7446	sales.india@netgear.com	www.netgear.com
Asus	1-800-209 0365	reachus@asus.com	www.asus.in
SMC	+91-22-6741 9133	sales@smc-india.com	www.smc-asia.com
Buffalo		info-india@melcoinc.co.jp	www.buffalotech.com
TP-Link	1802094168	sales.in@tp-link.com	www.tp-link.com
DIGISOL	+91-22-3061 6666	sales@digisol.com	www.digisol.com
ZyXEL		Sales-sales@zyxel.in	

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## Nokia demonstrates WP7

Nokia demonstrated its first WP7 device code named Sea Ray. It comes with Mango update, an 8MP camera with Carl Zeiss optics and Gorilla Glass

## 'High profile' on Facebook

Reed Hastings, Chairman and CEO of Netflix has joined Facebook's Board of Directors. Are we expecting a future Facebook with movies on demand?

antennae, while the larger TL-WR1043ND has three. Both routers are built exceptionally well, and feel rugged enough to survive a drop.

The ASUS RT-N16 is a large router that is also quite good looking with its off white colour and is well built to boot. It has 2 USB ports, and a small WPS button that looks like a reset button the rear - not the most intuitive setup for securing your network, but at least the feature is there. The Linksys E2000 is a nice black colour with the top bezel sporting a grey colour. It's as small as the WRT120N and E1000, but feels heavier and better built. It also doesn't heat up as much. It



TPLink TL-MR3420

was the only router in this group to miss out on a USB port. The Dlink DIR-685 looks nice, and reminds us of the TPLink routers, but it isn't as well built.

ASUS has a very nice firmware interface - all the basic menus like the USB media port, bandwidth management and such are segregated. And all the traditional LAN and wireless settings are under advanced settings. Clicking an option opens a drop down style menu with a lot of sub options. The menus are quite intuitive but the help menu with explanations is located underneath. TPLink surprised us with their router interface - perhaps one of the best laid out ones to date. There is a lot of fine-grained control available, but not at the cost of usability and the moment you select an option, a useful

window on the side explains everything you need to know about it. Linksys' interface is the same as we've seen over the past - it's well laid out with a lot of options and looks very professional, but some of the other routers have more newbie-friendly interfaces.

## Performance

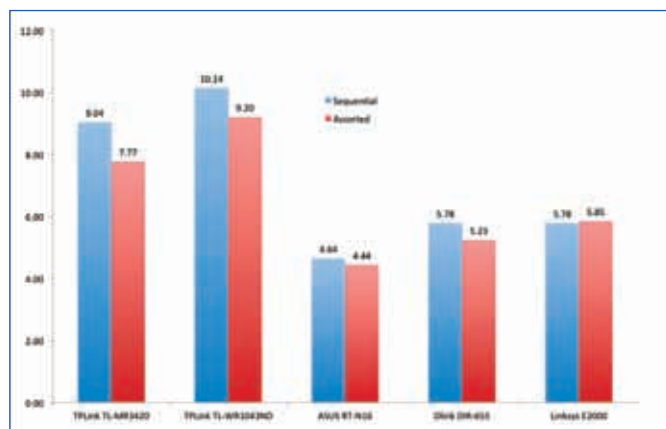
While none of these routers supported dual simultaneous band transfers, or any such tricks to extract maximum bandwidth, the fastest router bar none was in this category. In fact, the second fastest router also made its home here. With speeds of around 3.5 megabytes per second in zone three, the TPLink TL-MR3420 blazed through our tests. In zone one, video playback was flawlessly smooth. Try as we did, we couldn't get a single glitch in video playback. In zone three as well it performed admirably, with a 1.5 second delay between video resuming after a skip. Its sibling the TL-WR1043ND lagged slightly behind, but still comfortably ahead of the others.

The TPLink TL-MR3420 won our Best Performer award for its sterling performance across zones and different tests. If you're looking for the fastest router around, this is surely your best bet. The fact that it has a USB port for 3G data cards and a compact form are bonuses. As it turns out,

this router was also the cheapest in this group, and thus it has an unbeatable bang for buck quotient. It wins our Best Buy award too. If you need a router with a USB port for media sharing, look no further than its slightly costlier sibling, the TL-WR1043ND that performed nearly as well for around 600 bucks more.

## ABOVE ₹8,000: COSTLY CLUTTER-CUTTERS

When shopping for a router in the price range, one must remember that you're essentially buying a device that has a few more features that may or may not be useful to you. Media sharing is a given, heck even cheaper routers feature this. Dual simultaneous band transmission becomes a selling point, however, the bandwidth over both frequencies cannot be clubbed. This is only for use with clients of a similar frequency, for example you could set your notebooks adapter to connect to the 2.4 GHz channel, while you stream a video to your other notebook using the 5 GHz channel. A single adapter cannot connect to both networks at the same time, however two different devices can definitely get full bandwidth, since the router has two wireless radios instead of one. This category consisted of 6 devices - one each from ASUS, Belkin, Dlink, Linksys, Netgear and ZyXEL.



Zone 1 transfers

## Looks and features

Needless to say some the routers in this category were some of the most feature rich ones we've seen, while others were really funky looking. Take ASUS' RT-N56U - a dual simultaneous band router that is flat with a nice diamond-like texture on the front that causes light reflections on its glossy surface. The router is quite slim, but when viewed from the front looks flat, and the embedded activity LEDs too have a nice sparkling effect going. The Linksys E3000 was by far the largest and sturdiest of the Linksys routers and has a nice dark blue bezel running around the otherwise black body. Dlink's DIR-685 has a heavy-duty metal stand.

It's thick for it has a 2.5-inch notebook drive. This is a really nifty feature since the router



TPLink TL-MR3420

also has 2 USB ports, so it can connect up to three drives. The LCD display on the front is another first, and looks better than the one on the Belkin N1 Vision. Dlink's interface is not the easiest to intuitively understand. Despite very mediocre performance, we still love this router for two reasons: firstly, when we first saw this router a couple of years ago, we figured everyone would jump on to the hard drive-torrent-router band-



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	JULY 2011 ADSL Routers				Routers up to ₹2,500				
Brand	Dlink	Digisol	SMC	Buffalo	Dlink	Linksys	Buffalo	Netgear	
Model No	DSL2750U	DG-BG4011N	SMC7901W-BRA2	WBM-R-HP-GN	DIR-524	WRT120	WCR-HP-GN	WGR614	
Price (Rs)	1699	1850	2100	2550	1699	1750	1750	2187	
Plus (+)	Well Built	Well priced	Well built	Compact	Well priced	Looks neat, affordable	Neat looks	Decent performer	
Minus (-)	None in particular	Simple looking, slow	Only 1 LAN port	Slightly expensive	Slow performer	Poor antenna coverage	Very poor performer	No support for wireless N	
Features (Out of 20)	15	15	15.1	15	15	15	15	15	
Build and Ergonomics (Out of 10)	6.12	7.52	6.39	6.39	6.28	6.24	6.41	6.39	
Performance (Out of 70)	25.50	18.42	25.80	24.50	28.83	30.96	13.02	28.78	
Grand Totals (Out of 100)	46.62	40.94	47.29	45.89	50.11	52.20	34.43	50.17	
Features									
Protocols Supported (802.11 a / b / g / Draft n / Draft 2)	802.11n	802.11g	802.11g	802.11n	802.11n	802.11n	802.11n	802.11g	
Type Of WAN Port (Ethernet / RJ11 / USB)	RJ11	RJ11	Ethernet	RJ11	Ethernet	Ethernet	Ethernet	Ethernet	
No Of RJ45 (LAN) Ports	4	4	1	4	4	4	4	4	
No Of USB Ports	0	0	0	0	0	0	0	0	
Device/firmware Features									
Dual simultaneous band (Y / N)	N	N	N	N	N	N	N	N	
Power / Connectivity / LAN port Activity Indicators (Y/N)	Y / Y / Y	Y / Y / Y	N / N / N	Y / Y / Y	Y / Y / Y	Y / Y / Y	Y / Y / Y	Y / Y / Y	
Security Indicator / Hardware Security button (Y / N)	Y / Y	Y / Y	N / N	Y / Y	N / N	Y / Y	Y / Y	N / N	
Wall Mountable (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y	
External storage									
3G / CDMA / data card feature	N	N	Y	N	N	N	N	N	
Security									
Encryption / Firewall	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise	
LAN I/P Based Site Blocking (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y	
Wireless Isolation (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y	
Port Mapping (Forwarding)	Y	Y	Y	Y	Y	Y	Y	Y	
Build and Interface usability (So 10)									
Build Quality	8	7.25	8	7.25	7.25	7.25	7.5	7.5	
Ease of Installation	7	7.25	7.5	8	7.5	8	8	8	
Firmware Interface	7.5	7.25	7	7.75	7.5	7.5	7.75	7.75	
Device Configurable Settings	7	7	7.25	7.5	7.25	8	7.5	8	
Performance									
Zone 1 (50 MB File transfer)									
Sequential (in MBps)	10.35	3.85	2.58	4.36	5.92	11.56	2.73	2.64	
Non-sequential files (in MBps)	10.14	8.57	2.37	4.18	5.65	9.94	2.64	2.76	
Zone 2 (50 MB File transfer)									
Sequential (in MBps)	5.71	4.11	2.56	4.60	5.46	10.35	0.69	2.27	
Non-sequential files (in MBps)	5.52	3.23	2.29	3.68	4.87	6.63	1.44	2.45	
Zone 3 (50 MB File transfer)									
Sequential (in MBps)	0.29	0.00	1.68	0.37	0.55	0.00	0.00	1.67	
Non-sequential files (in MBps)	0.32	0.00	1.53	0.34	1.00	0.00	0.00	1.36	
Passmark Performance 7 score (in MBps)									
Zone 1	6.76	6.69	2.60	2.59	4.44	6.00	4.51	2.76	
Zone 2	1.53	7.17	2.61	2.11	5.33	7.77	2.73	1.98	
Zone 3	0.33	0.00	1.83	0.43	1.29	0.00	0.00	2.09	
Video Streaming (HD 1080p) (So 10)									
Zone 1	6.75	8.5	8	8.5	7.75	7.75	7.75	8.5	
Zone 2	7	7	7	7	8	7.25	6.75	8.25	
Zone 3	4	1	4.5	4	6	4	1	7.75	



JULY 2011

JULY 2011

## Routers between ₹2,501 and ₹5,000

	Belkin	Linksys	SMC	Belkin	Netgear	Belkin	ZyXEL	Buffalo	SMC	ASUS	SMC
	Basic	E1000	SMCWBR14S-N3	Surf	WNR2200	Share	NGB-419N	WZR-HP-G300NH	SMCWBR14S-3GN	WL-330N3G	SMCWBR11S-3GN
	2399	2500	2950	3099	3990	4299	4400	4500	4500	4500	4500
	Very fast, compact	Looks nice	Well built	Well built, compact	Looks nice	Well built, intuitive menus	Nice looks, good menu system	Looks very sleek	Well built	Ultra compact	Decent build quality
	Plain looking	Very slow	Could have been faster	Mediocre transfer rates	Fails to perform well	Lacks performance	Lacks USB port	Performance could be better	Very poor performer	No LAN ports	Poor performance
	13.3	15	15	13.3	15.8	14.1	15	15.8	15.8	15.9	15.9
	6.39	6.39	6.28	6.39	6.45	6.39	6.42	6.45	6.28	6.84	6.18
	43.92	21.64	29.71	28.43	29.54	31.71	34.08	31.30	15.81	23.90	21.83
	63.61	43.03	50.99	48.12	51.79	52.20	55.50	53.55	37.89	46.64	43.91
	802.11n	802.11n	802.11n	802.11n	802.11n	802.11n	802.11n	802.11n	802.11n	802.11n	802.11n
	Ethernet	Ethernet	Ethernet	Ethernet	Ethernet	Ethernet	Ethernet	Ethernet	Ethernet	Ethernet	Ethernet
	4	4	4	4	4	4	4	4	4	0	1
	0	0	0	0	1	1	0	1	1	1	1
	N	N	N	N	N	N	N	N	N	N	N
	Y/N/N	Y/Y/Y	Y/Y/Y	Y/N/N	Y/Y/Y	Y/N/N	Y/Y/Y	Y/Y/Y	Y/Y/Y	Y/Y/Y	N
	N/Y	Y/Y	Y/Y	N/Y	Y/Y	N/Y	Y/N	Y/Y	Y/N	N/N	N/Y
	N	Y	Y	N	Y	N	Y	Y	Y	Y	Y
	N	N	N	N	N	N	N	N	N	Y	Y
	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise
	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	7.5	7.25	7.25	7.5	7.5	7.5	7.5	7.25	7.25	7	7.25
	7.25	8	8	7.25	8	7.25	8	8	8	7	7.5
	8	7.5	7.5	8	7.75	8	8	7.75	7.5	8	7.5
	8	8	7.25	8	8	8	7	7.5	7.25	7.75	7.25
	7.20	3.74	5.85	5.12	8.28	4.52	12.12	5.52	5.46	4.48	3.50
	6.90	2.08	5.40	4.40	7.77	3.98	7.89	5.02	4.52	4.11	3.38
	7.20	3.13	5.58	3.09	3.03	5.29	6.90	4.87	2.31	3.03	2.58
	6.14	2.42	4.78	2.58	2.37	2.63	6.63	3.85	2.12	2.73	2.27
	3.60	0.88	0.83	1.42	0.83	3.05	0.30	1.60	0.00	0.80	0.68
	3.27	0.35	0.81	1.72	1.31	1.31	1.27	1.83	0.00	0.67	0.65
	5.48	3.89	4.79	4.43	6.49	4.19	6.70	4.48	4.50	4.80	4.43
	5.20	2.93	4.55	3.47	3.27	3.93	4.14	4.94	4.39	4.08	4.14
	2.82	1.81	1.42	1.65	1.26	2.98	1.54	1.33	0.38	1.31	1.26
	8.25	9	8.75	8.25	9.25	8.25	8.5	8.5	8.75	7.5	7.5
	7.5	8.25	8	7.25	8	7.25	7.5	7.5	7	7	6.75
	7.25	4	7.5	7.25	7.75	6	7	6.75	0	6.5	5.75





	JULY 2011	JULY 2011	Routers between ₹5,001 and ₹8,000			JULY 2011		
Brand	TPLink	TPLink	ASUS	Dlink	Linksys	Belkin	Linksys	
Model No	TL-MR3420	TL-WR1043ND	RT-N16	DIR-655	E2000	Play	E3000	
Price (Rs)	5399	5999	6000	6299	6500	8199	8500	
Plus (+)	Very good build and performance	Very good performance and menu	Large and handsome looking	Nicely built	Looks good	Very good performer	Great looks	
Minus (-)	None in particular	Its cheaper sibling outperforms it	Slightly expensive	Mediocre performance	We expected better performance	Mediocre looks	Expensive, poor performer	
Features (Out of 20)	16.6	15.8	16.6	15.8	15	15.5	16.4	
Build and Ergonomics (Out of 10)	7.39	6.65	6.63	6.3	6.44	6.39	6.44	
Performance (Out of 70)	48.27	46.07	38.52	30.50	33.87	41.67	21.53	
Grand Totals (Out of 100)	72.26	68.52	61.75	52.60	55.31	63.56	44.37	
Features								
Protocols Supported (802.11 a / b / g / Draft n / Draft 2)	802.11n	802.11n	802.11n	802.11n	802.11n	802.11n	802.11n	
Type Of WAN Port (Ethernet / RJ11 / USB)	Ethernet	Ethernet	Ethernet	Ethernet	Ethernet	Ethernet	Ethernet	
No Of RJ45 (LAN) Ports	4	4	4	4	4	4	4	
No Of USB Ports	1	1	2	1	0	2	1	
Device/firmware Features								
Dual simultaneous band (Y / N)	N	N	N	N	N	Y	Y	
Power / Connectivity / LAN port Activity Indicators (Y/N)	Y / Y / Y	Y / Y / Y	Y / Y / Y	Y / Y / Y	Y / Y / Y	Y / N / N	Y / Y / Y	
Security Indicator / Hardware Security button (Y / N)	N / Y	N / Y	Y / Y	N / N	Y / Y	N / Y	Y / Y	
Wall Mountable (Y/N)	Y	Y	Y	Y	Y	N	Y	
External storage								
3G / CDMA / data card feature	Y	N	N	N	N	N	N	
Security								
Encryption / Firewall	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise	
LAN I/P Based Site Blocking (Y/N)	Y	Y	Y	Y	Y	Y	Y	
Wireless Isolation (Y/N)	Y	Y	Y	Y	Y	Y	Y	
Port Mapping (Forwarding)	Y	Y	Y	Y	Y	Y	Y	
Build and Interface usability (So 10)								
Build Quality	8	8	8	7.5	7.5	7.5	7.75	
Ease of Installation	8	8	8	7.5	8	7.25	8	
Firmware Interface	8.75	8.75	8.25	7.5	7.5	8	7.5	
Device Configurable Settings	7.75	7.75	8	7.5	8	8	8	
Performance								
Zone 1 (50 MB File transfer)								
Sequential (in MBps)	9.04	10.14	4.64	5.78	5.78	4.28	4.28	
Non-sequential files (in MBps)	7.77	9.20	4.44	5.23	5.85	4.36	4.44	
Zone 2 (50 MB File transfer)								
Sequential (in MBps)	8.88	8.88	4.40	4.14	4.48	5.18	2.36	
Non-sequential files (in MBps)	6.54	7.20	4.64	3.74	3.94	3.74	2.13	
Zone 3 (50 MB File transfer)								
Sequential (in MBps)	3.58	3.43	3.31	1.57	1.59	4.60	0.82	
Non-sequential files (in MBps)	3.36	2.38	3.03	1.55	2.03	3.79	1.13	
Passmark Performance 7 score (in MBps)								
Zone 1	8.09	7.14	5.01	4.56	5.20	4.34	4.32	
Zone 2	6.59	4.56	5.17	3.68	3.85	3.57	3.48	
Zone 3	3.40	3.87	3.68	1.40	2.66	3.40	0.03	
Video Streaming (HD 1080p) (So 10)								
Zone 1	9.25	9	7.75	8.5	9.25	8.25	8.5	
Zone 2	7.5	8	7.25	7.75	8.75	7	7.25	
Zone 3	7.25	6.75	6.25	7.5	7	7	4	

## Routers above ₹8,000

JULY 2011

ASUS	ZyXEL	Netgear	Dlink
RT-N56U	NGB-460N	WNDR3700	DIR-685
8500	9600	10915	12399
Stunning looking	Looks nice, good menus	Great build quality	2.5" HDD bay, LCD display
Performance doesn't match looks	Expensive	Very poor performer, overpriced	Poor performance
16.2	15	16.4	16.6
6.28	6.24	6.41	7.52
31.92	37.42	23.19	25.25
54.40	58.66	46.00	49.37
802.11n	802.11n	802.11n	802.11n
Ethernet	Ethernet	Ethernet	Ethernet
4	4	4	4
2	0	1	2
Y	N	Y	N
Y / Y / Y	Y / Y / Y	Y / Y / Y	Y / Y / Y
Y / N	Y / Y	Y / Y	Y / N
N	Y	Y	Y
N	N	N	N
WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise	WPA 2 personal, WPA 2 Enterprise
Y	Y	Y	Y
Y	Y	Y	Y
Y	Y	Y	Y
7.25	7.5	7.5	7.75
7.5	7.5	8	8
8	8	7.75	7.5
8	8	8	7.5
3.74	8.28	11.83	5.29
4.44	9.94	8.15	5.34
3.50	6.37	4.18	2.31
3.60	5.65	6.29	2.52
1.86	3.31	0.00	1.09
1.98	1.18	0.00	1.17
4.65	11.23	5.87	3.81
4.78	5.35	3.06	2.72
2.04	0.02	0.20	0.83
8.75	9	8.75	8.5
7.75	7.5	7.5	7.25
7.5	5	1	7

wagon, but they didn't and this is still unique. Secondly, it's actually almost a router only on second thought – you can use it as a torrent download box, a photo frame, and add customised widget-like apps to display weather, Flickr photos, Tweets, and much more. However, since we didn't award any

BEST BUY  
**digit**  
JULY 2011



Belkin Play

points for all these extra features – because we're testing routers, not gizmos – it seemed only fair to give this router our coveted Editor's Pick award. After all, to remain unique two years after launch is almost unheard of in the tech world!

The most plain-jane router in terms of features was the ZyXEL NGB-460N – it didn't feature a USB port, neither did it have dual radios. What ZyXEL did get right was the firmware interface that was quite a pleasure to use – simple and well laid out with nice explanations for each setting. Netgear's WNDR3700 is a large router that is nonetheless attractive looking with its neat stand and transparent plastic bezel over the embedded LEDs.

## Performance

Sadly, one cannot test the combined speed of both radios on dual simultaneous routers else we'd break some records.

Equally sadly, with the exception of the Belkin Play, none of these routers were really consistent throughout the zones. Take the Netgear WNDR3700 for example – a brilliant score of 11.83 megabytes per second in zone one, and then failing in zone three. Or the mighty Linksys E3000 that barely managed to transfer one megabyte per second in zone three. The cheaper TPLink routers in the previous category blow away these heavy hitters in terms of sheer performance. However, it is true that if one utilises both wireless radios, you do get two relatively steady parallel streams of the same speed, however, it is not the same stream. ZyXEL's NGB-460N was the next most consistent after the Belkin Play, but the Best Buy award goes to the Belkin Play – consistent scores, 2 USB ports and at a price of ₹8,199 (MRP) which was the lowest in this category.

## CLOSING THOUGHTS

If anything, this test proved quite interesting. For one, the costliest routers weren't the fastest. Two – it's not everyday that a newcomer impresses, and TPLink, a Chinese brand that does a lot of business in Hong Kong did just that. But if anything this test reiterated our belief in the fickle nature of wireless networks. The fact that an 802.11g router can close in and surpass an 802.11n one showcases either the failure of a new protocol, or the very nature of fluctuating and attenuation-prone wireless signals, and poor quality antennas.

The latest crop of routers that have been announced feature maximum theoretical speeds up to 450 megabits per second. We'll have to wait and see if those can live up to expectations. Let's meet back here again, next time, to find out? **[1]**

**Tried & tested**

## **\$10,000 for 1 MB**

In 1956, an IBM team led by Rey Johnson shipped the first hard drive in a RAMAC 305 system which held 5MB of data using 50 24-inch platters

## **<http://goo.gl/VTW6l>**

Tired of the "Low Disk Space" message. Here's a cool utility to help you visualise your disk usage in a colour coded map

# Digital Storehouses

With storage getting cheaper by the day how do you really differentiate between the various offerings? Which HDD or SSD is the best for your needs? We tested over 20 internal storage devices to give you the answers



Nimish Sawant

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**“6**40K is more memory than anyone will ever need.” This is the quote that a lot of people attribute with Microsoft founder Bill Gates. Of course it is a rumour. But how much memory is enough? There's only one answer to that – the more you have, the more you will need. With applications, games, multimedia getting bulkier by the day, there really is no satiation as far as storage goes.

This year's storage comparison has seen some high capacity drives, including 3 tera byte drives for which drive manufacturers have come up with ways to overcome the 2.19 TB limit. Laptop drives have got a shot in the arm with 750 GB storage becoming common. Solid State Drives (SSDs) have become comparatively cheaper, but when compared with traditional hard drives, are still no match when it comes to cost per gigabyte.

We got around 17 hard drives – both desktop and laptop drives along with five

SSDs from brands such as Seagate, Western Digital, Hitachi for hard drives and Kingston, Apacer, ADATA and Transcend for SSDs.

### **DESKTOP HARD DISKS**

Just like an amoeba feeds itself by engulfing particles around it, the various players in the hard disk market are being engulfed by stronger and larger players. Five years back, there were a lot of manufacturers, but then in 2006 Maxtor was acquired by Seagate and this March witnessed Western Digital buying out Hitachi Storage.

This space is now left with only two main competitors: Western Digital (WD) and Seagate.

WD has a demarcation in its desktop drives such as Caviar Black – performance drives and Caviar Green – power saving drives and comparatively slower. Seagate has a similar segmentation in the form of Barracuda XT which are the performance drives and the Barracuda LP which are low power drives.

The big change we saw this year was the introduction of 3TB drives. WD uses an advanced 4K sector, that



## Corsair's latest launch

Corsair launched P3 128 GB SSD which claims 400 MB/s read and 280 MB/s write speeds and supporting SATA III for a retail price of ₹14,000

## Kingston's HyperX SSDs

Kingston is expected to launch their HyperX line of SSDs housing the SandForce SF-2281 controller in capacities of 120GB and 240GB

Hard Drives Test



replaces traditional 512-byte hard drive sec-



With a 10,000 RPM spindle speed, it was difficult for other drives to beat the WD Velociraptor 600GB which fetched it the Best Performer

tors with 4 Kilobyte sectors, in its WD10EARS 3 TB drive whereas Seagate and Hitachi have used the traditional 512-byte sector for their 3 TB drives. These drives overcome the 2.19 TB limit (read more on this in the World View section of the January 2011 issue) by using a software (Seagate and Hitachi) or by using a host bus adaptor (in WD).

We got around five drives from WD, three from Seagate and one from Hitachi. We wonder why WD sent us the same models as last year: Caviar Black 1 TB and Caviar Green 1 TB. The only logical explanation we see is sales. Also the prices have dropped significantly making performance drives within reach.

WD Velociraptor WD6000HLHX (600GB) is double the capacity from its last iteration and has three 200 GB platters spinning at 10,000 RPM. It is SATA 6 Gbps compatible but do not expect a drastic jump in the real world scenario. In terms of performance, the Velociraptor pretty much ruled them all, but we found the data transfer scores

of the 3TB drives to be quite impressive. All of them use a 64MB of cache memory as opposed to 32 MB used in the Velociraptor. But more on them later.

WD WD1001FALS (1TB) is your Caviar Black edition performance drive and a very old one at that. Its performance was found to be slower than Seagate ST31000528AS (1TB) despite the same rotational speed and cache buffer. The difference between these two is the platters, where the Caviar Black 1 TB uses three platters, the Seagate one is more dense at 2 x 500GB platters.

Among the low power drives we got WD10EADS and WD10EARS (both 1TB) along with Seagate ST2000DL003 (2 TB). The only difference between the two WD drives is the cache buffer which gives the WD10EARS a slight edge over the other drive. Also the Caviar Green drives use an algorithm to determine the spindle speed which can be anywhere between 5400 - 7200 RPM. The Seagate 2 TB drive has a fixed rotational speed of 5900 RPM and we notice that this drive was faster than the other two green edition drives.



WD7500BPKT won the Best Buy for its great price to performance ratio among the Laptop HDDs

## HOW WE TESTED

We decided to separate the hard drives based on their categories such as Internal HDDs, Laptop HDDs and SSDs. We did not demarcate the drives within these categories based on capacity and technology used as ultimately a user will go for a drive based on his or her needs. Higher performance drives will tend to be priced higher than the large capacity value drives.

While testing hard drives and SSDs we have to make sure that there is no bottlenecking anywhere. To ensure this, we used two 600 GB Velociraptors in RAID 0 mode, which gave us excellent write speeds, so that it could take on even the fastest SSD to be tested. Our test rig is as shown in the box:

### TEST RIG

**Processor:** Intel Core i7-980X

**Motherboard:** ASUS Rampage III Black Edition

**RAM:** 2x2GB Corsair Dominator 1333MHz

**Operating System:** Windows 7 Ultimate

**OS Drive:** Intel SSDSA2SH080G1GN (80 GB)

**RAID 0 combination:** 2 x 600GB WD Velociraptor (SATA 3, 32 MB cache)

**Graphics Card:** Galaxy GTX 460

**Monitor:** BenQ E2200HD

**Power Supply:** Corsair HX 620W

Clean installs were done on each of the platforms and two partitions were created on the RAID 0 array. All extra Windows functions that can potentially slow down access, such as System Restore, File Indexing and a few unused services were disabled. The synthetic benchmarks were installed on the Intel SSD where as the real life file transfer benchmarks were installed on the primary RAID 0 partition. We used HD Tune Pro 4.0.1 for testing the Average Read / Write and Read Burst speeds as well as SiSoft Sandra 2011. Both these benchmarks require unformatted drives to perform write testing. After completing these tests, we formatted the test drives and created two partitions of equal size. For our Real world tests we used an 8 GB RAR file to simulate sequential operation to the disk and a folder of size 8 GB having various types of files of varying sizes to simulate a random or non sequential operation. These files were copied to and from the RAID 0 array to the drive under tests. We also performed these tests intra-drive which involves copying from one partition to the other except for SSDs. Finally we used Adobe Photoshop CS2 to test the amount of time taken to load a 1 GB image. Both the image and the scratch disk were kept on test drives on the same partition, effectively stimulating file access.

As hard drives are all about performance, we did not have any weightage for features, as there are none so to speak. Ultimately everything boils down to transfer speeds and pricing.

Finally coming to the 3TB warriors. As Seagate and Hitachi use the legacy 512-byte sector, it is comparatively easier for you to use these drives even if your OS is Windows XP and

in order to utilise the complete 3 TB all you have to do is install their respective drivers. With the WD 3 TB drive you will not be able to access the full capacity if you are using Win-

CATEGORIES	DESKTOP HARD DRIVES							
Brand	Western Digital	Western Digital	Western Digital	Western Digital	Seagate	Seagate	Hitachi	
Model Name	Velociraptor	Caviar Black	Caviar Green	Caviar Green	Barracuda 7200.12	Barracuda LP	Deskstar	
Model Number	WD6000HLHX	WD1001FALS	WD10EADS	WD10EARS	ST31000528AS	ST2000DL003	HDS723030A-LA640	
Price (₹)	11,650	4,400	2,900	2,900	3,500	5,000	16,000	
Cost Per GB (₹)	20.84	4.72	3.11	3.11	3.76	2.69	5.73	
Grand Total (Out of 100)	74.86	52.1	44.19	44.68	59.78	62.52	71.9	
Performance (Out of 100)	74.86	52.1	44.19	44.68	59.78	62.52	71.9	
Features								
HDD capacity (GB)	558.91	931.51	931.51	931.51	931.51	1858.23	2794.52	
Interface	SATA 3	SATA 2	SATA 2	SATA 2	SATA 2	SATA 3	SATA 3	
Rotational Speed (RPM)	10000	7200	Intellipower	Intellipower	7200	5900	7200	
Buffer Size (MB)	32	32	32	64	32	64	64	
Performance								
HD Tune Pro 4.01								
Average Read / Write (MB/s)	150.2 / 140.6	102.3 / 101.7	89 / 89.4	101 / 94.3	126.6 / 122.3	133.5 / 129.4	154.4 / 152.9	
Read Burst Speed (MBps)	288.2	185.9	200.4	197.1	185.1	246.6	347.1	
Random Access (1MB) Operations per sec (IOPS)								
Read / Write	64 / 80	40 / 51	32 / 40	27 / 16	42 / 48	36 / 31	41 / 52	
Random Access (1MB) Access Time (in ms)								
Read / Write	15 / 12	24 / 19	30 / 24	36 / 59	23 / 20	27 / 31	24 / 18	
SiSoft Sandra 2010								
Drive Index, Read (MB/s)	129.12	88.27	72.83	79	105	106.64	125	
Access Time, read (ms)	6.8	11.83	14.1	10.41	14	17.12	15.31	
Drive Index, Write (MB/s)	130.55	89.57	74.66	79.9	107.32	107.65	145.9	
Access time, write (ms)	2.43	3.87	5.68	19.7	4.5	0.21	3	
Real World Tests (higher is better)								
File Write 8 GB Single File (MB/s)	148.94	102.4	86.23	99.5	120.47	132.12	132.12	
File Write Test Assorted 8 GB File (MB/s)	97.52	74.06	65.01	52.85	89.04	78.76	94.16	
Read Test Single 8 GB File (MB/s)	151.74	101.13	88.08	99.91	122.26	130.03	134.29	
Read Test Assorted 8 GB File (MB/s)	107.78	76.56	65.54	75.15	91.02	95.25	117.02	
Intra Drive Sequential (Read/Write) (MB/s)	42.01	30.8	23.47	25.05	33.57	32	62.06	
Intra Drive Assorted (Read/Write) (MB/s)	44.51	32.89	25.52	25.36	38.28	38.28	51.84	
PhotoShop CS2 (in secs) (lower the better)	37.79	41.4	53.55	64.21	44.66	45.42	27.87	

dows XP, but with a Host bus adaptor (that comes bundled) you can do that on a machine running Windows Vista and up. Also the WD 3 TB drive is a green edition, so as expected we did not get scores as high as the other two 3 TB drives. But will the Black edition of WD 3 TB beat the other two?

We will have to wait and watch for that one.

### Verdict

With a spindle speed of 10,000 RPM, it is not possible for any other drive to beat the Velociraptor and it won our Best Performer. However, the scores from Seagate and Hitachi

3 TB drives were quite impressive. Seagate's Barracuda LP ST2000DL003 was adjudged the Best Buy due to its extremely low cost per GB and a decent overall performance. Hitachi Deskstar 3 TB won the Editor's Pick as it was the second best performer and the fastest amongst all 7200 RPM drives.

### LAPTOP DRIVES

We received around eight drives in this segment from Seagate, WD and Hitachi, with 750GB being the maximum capacity. There was a good mix of drives here. From the high performance Black editions, to the value oriented drives to one hybrid drive. You no longer have to

LAPTOP HARD DRIVES										
Seagate	Western Digital	Hitachi	Western Digital	Western Digital	Western Digital	Seagate	Seagate	Seagate	Western Digital	
Barracuda XT	Caviar Green	Travelstar Z7K320	Scorpio Black	Scorpio Black	Scorpio Blue	Momentus	Momentus XT	Momentus 7200.4	Scorpio Blue	
ST-33000651AS	WD30EZRS	HT-S723232A7A364	WD7500BPKT	WD5000BEKT	WD5000BEVT	ST9750420AS	ST-95005620AS	ST9500420AS	WD7500BPVT	
14,500	8,000	3,225	5,450	3,300	2,850	6,000	6,500	4,000	4,350	
5.19	2.86	10.82	7.8	7.09	6.12	8.59	13.96	8.59	6.23	
70.51	54.7	52.25	54.12	49.56	40.77	51.64	50.78	44.73	41.14	
70.51	54.7	52.25	54.12	49.56	40.77	51.64	50.78	44.73	41.14	
2794.52	2794.52	298.09	698.54	465.76	465.76	698.64	465.76	465.76	698.64	
SATA 3	SATA 2	SATA 2	SATA 2	SATA 2	SATA 2	SATA 2	SATA 2	SATA 2	SATA 2	
7200	Intellipower	7200	7200	7200	5400	7200	7200	7200	5400	
64	64	16	16	16	8	16	32	16	8	
150.1 / 145.8	122.8 / 112.5	111.4 / 105.4	121.4 / 109.96	104.1 / 97.7	81.8 / 80.7	116.4 / 110.4	105.4 / 100.4	101.1 / 91.6	88.8 / 81	
275.5	202.1	195.4	197.4	182.4	176.6	169.2	192.5	121.2	115.4	
36 / 52	29 / 25	34 / 34	30 / 27	35 / 46	30 / 30	36 / 21	31 / 36	31 / 35	24 / 18	
27 / 19	33 / 38	28 / 24	32 / 36	27 / 21	32 / 33	27 / 46	32 / 27	31 / 28	40 / 55	
123.85	100.68	91	99	84.79	65.33	94	85	83.45	73.56	
18.58	14.65	14.38	15.8	14.76	16.13	15	16.72	17.11	14.41	
120.21	103.17	104.37	100.18	86	65.21	96.37	112.5	82.11	73.63	
3	8.83	4.3	5.73	6	5	1249	16.15	6.78	15.57	
145.58	122.26	110.7	118.72	99.91	80.31	103.69	94.16	93.09	85.33	
113.77	67.7	64.5	69.42	70.01	48.18	74.47	81.92	57.69	54.61	
146.28	120.47	109.22	118.04	102.4	80.31	113.77	96.37	99.91	87.54	
107.78	86.23	82.74	88.08	76.56	60.68	81.11	70.01	71.85	66.54	
37.4	40.96	40.55	40.75	25.92	15.75	31.5	38.1	23.04	30.01	
49.95	35.31	29.89	33.03	29.15	43.72	31.24	33.3	27.03	24.45	
<b>41.42</b>	<b>55.54</b>	<b>39.4</b>	<b>39.47</b>	<b>48.56</b>	<b>53.17</b>	<b>49.47</b>	<b>58.45</b>	<b>56.46</b>	<b>55.33</b>	

stay content with laptops having low storage with these drives.

We get to see demarcation with WD having Scorpio Blue which are the large capacity value drives and Scorpio Black which are the performance drives. Seagate has an interesting series of drives belonging to the Momentus XT range. It is basically a hybrid laptop drive, ie. Seagate has taken their older 7200.4

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Hitachi (Travelstar)	91 22 4085 9627	jeetu.bhatia@neoteric.co.in	www.neoteric.co.in



Brand	Kingston	Kingston	Transcend	Apacer	ADATA
Model Name	SSDNow V+ 100	SSDNow V 100	NA	Turbo II Series	500 Series Turbo
Model Number	SVP100S2	SV100S2	TS32GSSD25S-M	AS602	S596
Price (₹)	13,990	11,490	5,000	7,861	4,444
Cost Per GB (₹)	117.33	96.36	167.67	140.63	149.03
Grand Total (Out of 100)	85.25	77.88	44.63	60.49	56.42
Performance (Out of 100)	85.25	77.88	44.63	60.49	56.42
<b>Features</b>					
Capacity (GB, unformatted)	119.24	119.24	29.82	55.9	29.82
Interface	SATA 2	SATA 2	SATA 2	SATA 2	SATA 2, USB 2.0
Trim Support	Y	Y	N	Y	Y
Controller	Toshiba T6UG1XBG	Toshiba JMF 618	JMicron JMF602B	SandForce SF-1200 series	Jmicron JMF612
Buffer Size (MB)	128	64	NA	NA	128
<b>Performance</b>					
<b>HD Tune Pro 4.01</b>					
Average Read (MB/s)	202.5	212.1	144.5	168.5	219.7
Average Write (MB/s)	177.8	130.5	39.7	186.4	55.9
Read Burst Speed (MB/s)	227.8	105.1	111.2	186.5	163.9
Random Access (1MB) Operations per sec (in IOPS)					
Read / Write	235 / 140	206 / 152	177 / 3	245 / 141	213 / 9
Random Access (1MB) Average Access Time (in ms)					
Read / Write	4.2 / 7.1	4.8 / 6.6	5.6 / 265	4.1 / 7.1	4.7 / 102
<b>SiSoft Sandra 2010</b>					
Drive Index, Read (MB/s)	227	245.59	199.16	253.1	237.17
Access Time, read (in microseconds)	87	244	543	168	112
Drive Index, Write (MB/s)	231	212	68.76	117	62.75
Access time, write (in microseconds)	46	70	74	116	10
<b>Real World Tests (higher is better)</b>					
File Write 8 GB Single File (MB/s)	152.29	154.12	71.23	52.51	61.13
File Write Test Assorted 8 GB File (MB/s)	134.29	87.15	17.73	46.81	20.12
Read Test Single 8 GB File (MB/s)	210.05	227.98	157.71	178.74	208.44
Read Test Assorted 8 GB File (MB/s)	138.84	145.71	120.47	122.26	138.75
PhotoShop CS2 (in secs, lower is better)	24.23	24.11	91	25.92	65.77

drives and added a 4GB SLC NAND flash to the drive, so you have a 7200 RPM drive with 4 GB of flash. This capacity may seem little, but it places your most commonly used files on flash so that you can access them faster. It all depends on your usage patterns. Quite an interesting change from the performance versus value battle.

Among the 750 GB drives, the Scorpio Black WD7500BPKT

was the best except in 8 GB Assorted file write test where the Seagate ST9750420AS scored higher. Both these drives house a two platter design with 375GB per platter. The only other drive which was giving consistently good scores was the Hitachi Travelstar Z7K320 which was particularly impressive in the 8 GB File write test, but we found its pricing to be a little on the higher side for 320 gigs.

The Scorpio Blue series of drives WD5000BEVT (500 GB) and WD7500BPKT (750 GB) are ideal for those looking at value propositions and are OK with lower performance. They both have a lower spindle speed and 8 MB cache buffer, but pricing is where it gets attractive.

### Verdict

Western Digital WD7500BPKT won the Best Buy thanks to its

highest overall score. Although Hitachi Travelstar Z7K320 came a close second, but its cost per GB was considerably higher than the WD Black edition. WD5000BEVT gives the best cost per GB but its performance score is the lowest amongst competitors. The hybrid Seagate Momentus XT secured the Editor's Pick for its innovation of having an on-board SSD, this despite its high cost per GB.

## iPad tops tablet traffic online

According to comScore, iPad and iPad2 together account for over 89 percent of tablet internet use globally and 97 percent in the US

## Archos enters Honeycomb bandwagon

Archos has unveiled its 80 G9 and 101 G9 Android 3.1 tablets housing a 1.5GHz ARM Cortex A9 processor, support for Flash and 3G ready

Hard Drives Test

### SOLID STATE DRIVES

Solid State Drives (SSDs) have been around for a while now and even though they cannot match upto traditional hard drives in terms of cost per GB, their importance cannot be undermined. Thankfully capacities are increasing and prices are dropping.

But there are certain things that need consideration before purchasing an SSD such as TRIM support, better controllers and use case scenarios. SSDs are known to have great read speeds, but the same cannot be said about write speeds. Sequential write speed is also affected by the capacity of the drive because higher density drives have large number of NAND flash chips which allows the controller to access more storage simultaneously.

Another point worth noting is that even though flash memory lasts longer than traditional magnetic recording, an SSD can only handle a finite number of write operations, beyond which the integrity of the data is questionable.

SSD controllers are very important in an SSD as they basically manage the flow of data between the NAND flash chips and the computer, controlling of writing methods, etc. Speaking of which the Transcend TS32GSSD25S-M houses the older JMicron JMF602B



Kingston SSDNow V+100 won the Best Performer for its fabulous Read and Write speeds

controller which is known for issues like stuttering. Although the box rates speeds of upto 260 MB/s (read we are assuming as nothing is mentioned) our testing showed read speeds around 150 MB/s. Random write speed was quite appalling at 17 MB/s. ADATA S596 performed marginally better thanks to the upgraded JMicron JMF612 controller, giving much higher read speeds, but the write speeds were still around 60MB/s for sequential write and around 20

MB/s for random write. While the Transcend 32GB drive is not recommended due to the older controller and absence of TRIM support, the ADATA S596 drive can be considered by those looking at faster application loading.

Apacer AS206 housing the SandForce SF1200 controller gave better write performance than the ADATA and Transcend SSDs.

Kingston SSDNow V100 and V+100 were the only SSDs that left us impressed. Although the V100 is an older SSD, the newer V+100 gave improved

write speeds for both sequential and random writes (over 40 percent improvement).

### Verdict

There was no competition among the SSDs really, with the Kingstons scoring in performance. Kingston SSDNow V+100 was judged as the Best Performer as well as the Best Buy. It got a Best Buy despite a high price of ₹119 per GB as all the other competing drives had a negative price to performance ratio. If we had to still recommend an SSD apart from Kingston, we would stick with Apacer. **d**

### RAID 0 PERFORMANCE IMPROVEMENT

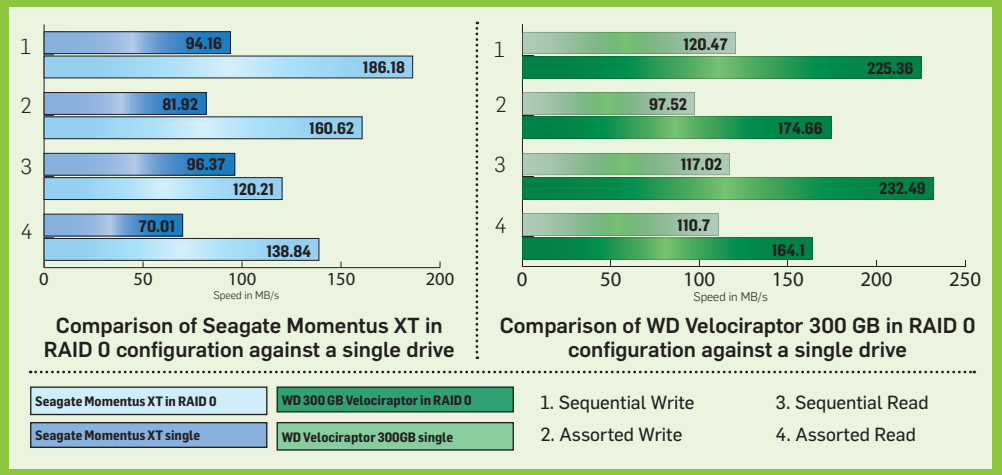
We had set out to include RAID 0 readings as well in our testing, but despite a detailed mail explaining the testing procedure, only Seagate sent us two units of most of their drives. We still went ahead with performing RAID 0 on two drives, the WD Velociraptor WD3000HLFS (300GB) and Seagate Momentus

Before we analyse the scores, a quick primer on RAID 0. RAID is the acronym for Redundant Array of Inexpensive Disks, which combines two (or more) hard drives to form one single drive. This may result in superior performance or greater reliability or both. We decided to do RAID 0 as we wanted to check the speed boost that one can derive with this configuration. RAID 0 uses a method called Striping, wherein a single chunk of data is split into two and sent equally to both the drives. For instance in the data stream 100110, this is how the data will be split among drive A and drive B: ABABAB such that drive A has 101 and drive B has 010. As a result of this performance improves, as what would otherwise have taken 6 steps for a single drive is done in only 3 steps for two drives working in parallel. But there is a cost behind this gain in performance: if one drive fails, your data is lost, as the other drive only has the other half of the data, which doesn't have any meaning. The advantages are higher performance and increased capacity.

RAID 1 configuration makes use of Mirroring. Coming back to our data stream (100110), in RAID 1, both drive A and drive B will have the complete string 100110 ie. In place of 6 steps for a single drive it will take 12 steps for two drives. This means that if one of the drive fails, the other drive will still have all the data.

There are more RAID configurations which require more than two drives which we will discuss some other time.

Coming to our performance scores, here are the charts. The idea behind this exercise was to explain, how you can achieve great speeds by having two inexpensive drives in RAID 0. Of course, do not forget to get the crucial data backed up.



**Tried & tested**

### **Thing-O-Matic takes 3D Prints**

For \$1,199, MakerBot's "Thing-O-Matic" lets you create detailed, real plastic objects with pinpoint accuracy in three dimensions. That's right, print tangible 3D shapes.

### **Printing high-quality photos**

While plain matte paper is fine for printing text documents, for photo prints always use a glossy paper. It makes photo prints look much better, with eye-popping and vivid colors.

# Picture Perfect

If you had up to ₹10,000 to spend on a photo printer, which one should you buy? Read on to find out







## Kyocera Mita India Pvt. Ltd launches range of MFPs

Dubbed as "Smart MFPs", these machines simplify regular office document processing and are easy to use. It has all standard features and there is no need to spend additionally on expensive options.

Photo Printer Test

Jayesh Shinde

[jayesh.shinde@thinkdigit.com](mailto:jayesh.shinde@thinkdigit.com)

Single function printers are slowly being eclipsed by multi function devices. But photo-only printers still find use in many households and office environments, where the need to feel and experience a good old photo print still runs fresh.

In the following pages, we compare six photo printers from Canon, Epson and HP – getting MFDs was easy, but procuring photo printers from brands proved difficult. These printers are a mix of home and office printers, some have absolutely no added features apart from physical buttons and a USB connectivity cable, while others have duplex-printing, Wi-Fi support and Ethernet connectivity to boast. Some come with just two cartridges, while others have as many as six – one particular printer came with no cartridges at all, but something called an “ink tank system”. Not only do these printers print photographs, but they’re also useful for occasional document printing.

So without much ado, let’s take a look at the following photo printers:

### HP Deskjet Ink Advantage K109a

The HP Deskjet Ink Advantage K109a is a port-

able inkjet printer that starts off our comparison test. The printer is nicely packed in a petite box, secured with styro-foam – if there’s one thing this comparison brought to light and emphasised beyond a shred of doubt, is the superior packaging of HP printers. Both the HP printers in this comparison were packed better than printers from the other two brands – just for readers who are concerned about damages incurred by products during transportation.

Moving along from the packaging, the HP Deskjet Ink Advantage K109a is really light and has a low physical footprint. It is ideal for use in office cubicles or business places cramped for space. The K109a has an attractive sprite across its top lid which sets it apart from the rest of the printers in this shootout which are mostly dull, black monoliths. The printer comes with two cartridges – one for color and one for black.

The Deskjet Ink Advantage K109a is easy to setup, drivers can be downloaded off HP’s support web site, in case you don’t feel like popping in the printer’s software disc. One thing is readily visible as you start printing photos off the HP Ink Advantage K109a, it’s tray is small and it can’t keep A4 prints from falling over. And if that wasn’t enough, the printer spits them out unashamedly, instead of gently dropping the papers down.



HP Deskjet Ink Advantage K109a  
Price ₹4,699

## HOW WE TESTED

All printers in this comparison were tested on the same rig. As this was a photo printer test, we tested the printers using three test photographs. Photo 1 had a section dedicated as a human portrait of two sisters. Photo 2 is another Adobe RGB sample photo with vivid colors and various shades of black to properly ascertain black levels in prints. Photo



3 is a photo we use for all our printer tests, which covers a wide gamut of objects, patterns, faces etc. We also included one mixed document print test to check all the printers, as you would also use the photo printer to print documents. We only used A4 sized paper for our tests – photos were printed on a standard single-side glossy paper, while mixed documents (comprising of text and photos) were printed on regular plain paper.



For comparative analysis, we identified 6-7 regions in each photograph and assigned a score on 10 to each region as compared to other printers. An average of this score was assigned as the overall print quality score in the log sheet. This was done so as to cover all aspects of the printout rather than be biased by one particular aspect of the printout.

Apart from printer performance, we also gave points to features offered. Those having extra connectivity options such as memory card support, Wi-Fi, and network had an edge over others. Ease of installation, build quality and printer setup was also evaluated for each printer.

## World's fastest A4 desktop printer

The Machjet LPP1060N is twice as fast as a regular printer, capable of outputting a 1600x800 print at 60 pages per minute - without burning the page!

## Massive BitCoin selloff

The first completely digital currency suffered a massive selloff due to a compromised account with rates going from 17 dollars to a cent!

The print quality, of photos printed on the K109a, was largely good, with prints churned out pretty quickly. All through the three test images - Photo 1, 2, 3 - we felt the K109a played second fiddle to the OfficeJet 6000 or the Canon Pixma iP4870, whether it was the quality of printed photos or the time taken to print them. Even for mixed document printing, the printer took the longest time to print the document with the third best print quality - that isn't exactly stellar performance. However, this is the cheapest, most portable printer in the comparison - without any frills.

### HP OfficeJet 6000 - e609a

The OfficeJet 6000 e609a series printer is a touch larger than the K109a. With intended usage beyond just home users, the OfficeJet comes with extra features - like a LAN port, for sharing the printer in an office environment and duplex printing support. It also has CMYK cartridge slot, with slim cartridges (C,M,Y,K) that are installed by popping the hood of the printer - cartridge installation, much like the K109a, is easy peasy.

Driver installer is heavy from the web - over 200MB - and it's good that HP has included a detailed manual and driver CD. It also has proprietary HP software which lets you monitor the cartridge's ink levels, update drivers, etc, right

from your computer. The printer is easy to setup and get started with. It's a dreary mass of black with nice, prominent buttons that are good to click on. The printer also has additional features such as Wi-Fi and Ethernet printing support, which gives it extra points in our comparison table.

The OfficeJet 6000 e609a is physically larger than the K109a, and takes up larger desk area. Its tray is similar to the K109a, but thankfully it's a touch longer. Output prints barely fit into the tray's area, although paper doesn't really spill over - the OfficeJet 6000, unlike the K109a, doesn't spit out the prints either, which helps keep the paper in the tray.

In terms of performance, the HP OfficeJet 6000 e609a was one of the star attractions. Not only did it rake in one of the highest points in terms of pure performance (time taken and quality of prints), it's also one of the most feature-rich printers in this comparison test - remember, photo-only printers are severely curtailed, stripped down boxes in



Epson L100  
Price ₹9,999

the features department compared to their MFD brethren. Colour, detail, and black levels were much better in our test photo prints on the OfficeJet 6000 e609a compared to the HP K109a. However, mixed document printing isn't great at fast document mode, and the printer falls short of expectations. Overall, this is a great buy if you need a feature-rich, quality photo printer at an attractive price.

### Epson L100

The Epson L100 comes with a tall claim of being the world's first original ink tank system printer. It has a tiny 14MB driver installer that is very convenient to download and setup off Epson's web site.



HP OfficeJet 6000 - e609a  
Price ₹4,999

The L100 is a glossy black monolith mass with a back-loading paper tray and a front output tray. The output tray is detachable and flimsy in build quality. Overall, the Epson L100's build quality isn't as great as the two

HP printers. Its cartridge compartment sits exposed to the left of the printer (C,M,Y,K) - these are vertical columns, compartmentalized sections, made of white plastic. One can easily see ink levels from the side, no need for a software to see it on your desktop screen - which we feel is a rather a convenient addition.

Epson also provides refill ink bottles for all four colors with the printer. But we witnessed they weren't packaged well, as a couple of ink bottles were squished and one had leaked ink - the problem we found was its packaging, it wasn't in styrofoam (like the two HP printers) but only hard cardboard paper, and as such not sufficiently reinforced to absorb shocks and jolts during transportation.

After wasting a lot of time figuring out why the ink bottles weren't firing away to print copies of images, we noticed that merely installing the driver from the website is insufficient to get this printer working. You have to enter the serial number of the ink bottles during setup (through CD) to start using the printer... and wait for 20 mins (according to the manual) to heat up the inks enough. Although we under-

## Apple Releases Updated Printer Drivers

If your Epson and Lexmark printers aren't working on your Mac, turn on software updates to apply the latest drivers from Apple.

## Trains running at 300mph

Japanese Maglev trains will now be running at 313 mph after approval of a new route

**Photo Printer Test**

stand why Epson has taken this approach – to urge users to buy legitimate ink, it is still a waste of time compared to the easy plug-n-play cartridge approach of the HP printers.

Once fired up, it's evident the Epson L100's more noisy than the two HP printers, definitely. We also bemoan the gargantuan amount of time the printer took to churn out prints, compared to the HP printers – 10 minutes 24 seconds for a test print against the HP e609a's 2 minutes 21 seconds. However, it must be said that the L100 consistently gave high-quality image prints throughout our casual and test benchmarks. Color quality was very good – a touch too oversaturated, gradients, shadows, reflection, the printer tackled every scenario admirably well. For future redesigns of the L100, we think if Epson can bring down the time taken to print copies significantly, it will find takers for this printer with its unique ink deployment system.

### Epson Stylus Photo T60

Part of Epson's Stylus Photo series, the Epson T60 is the largest photo printer in this comparison. It's a big black chunk of glossy plastic, the T60, and fittingly the biggest, bulkiest printer in the comparison. Keeping it on an office desk cramped for space isn't easy, for it's both wider and taller than the other Epson, Canon, and HP printers in the fray. Actually, it's a bit of a disappointment when you learn this is only a single-function printer, given its bulk. While setting it up and connecting it to the wall socket, we realized the printer's power point is hard to access from the front. This is because the

power adapter (hidden inside the printer) has a port that is concealed along an edge on the back, and it's difficult to play with compared to the other printers.

On the plus side, the Epson Stylus Photo T60's front has three buttons – Power on, Ink level indicator, and cancel print jobs. The ink level indicator blinks red whenever a cartridge is low – this is good, no separate program installation is required – unlike the HP printers. The T60 uses six cartridges to churn out photo prints – Cyan, Magenta, Yellow, Black, Light Cyan and Light Magenta. Swapping cartridges isn't difficult at all.

We also realised, since we tried evaluating each printer vendor's support section on their respective product websites, that the Epson T60's drivers for Windows 7 64-bit edition were not present on Epson's India web site – we had to download the relevant drivers from Epson's Singapore web site. We hope Epson India looks into the matter and fixes their support software issues.

When we got down to testing the Epson T60, we realised the printer vibrates while printing. In fact the vibration is so unnatural that it's hard to miss – the other printers also vibrated with varying degree, but nothing so appreciable as the T60's amplitude. The printer vibrates the most in Draft mode, and a little less in mixed and photo mode.

The T60 deploys a back-loading tray for paper inlet,

## PORTABLE PHOTO PRINTERS

### EPSON PICTUREMATE PM235



Epson PictureMate PM235

Price ₹9,999

If you are a travelling photographer or someone who needs to carry a printer on their photo expeditions, only a portable photo printer will make sense for your needs. These printers are small and portable, easy-to-carry, but at the same time, they're sophisticated printing machines. The Epson PictureMate PM235 is one such portable printing solution.

The PictureMate PM235 is so in tune with its user's needs that it supports PC-less printing – you can insert your camera's memory card in the PM235's slots. It comes with its own battery pack. The tiny, cute-looking PM235 also has a 2.5-inch LCD screen for PC-less printing – you can decide what type of print you want, what paper, how many prints, etc., right through this screen and its accompanying command buttons, which are very easy to use.

The printer has a single slot-loading printer cartridge that gives very good 6-inch by 4-inch photo prints. The entire unit is very well built, there's a handle to hold the printer comfortably. It has collapsible front output tray, whereas 6-inch by 4-inch papers are fed through the top.

with prints coming out and dropping in the front tray. In fact, the printer's front output tray appears to be small at first – like the HP Deskjet Ink Advantage K109a and Officejet 6000 e609a – but has extendable plastic fins that are curved upwards. This keeps the printed output paper in stack and prevents it from spilling over. The tray

build quality is good and doesn't feel flimsy.

In terms of photo printing performance, the T60 was both good and bad. It was good in terms of overall print quality – warm colours, crisp outlines, good gradient levels, etc. But there were a few hiccups – shadows and reflections weren't reproduced as well as



Epson Stylus Photo T60

Price ₹9,999



Brand	Canon	HP	HP	Epson	Epson	Epson
<b>Model</b>	Pixma iP4870	Deskjet Ink Advantage K109a	Officejet 6000 e609a	Stylus Photo T60	ME Office 82WD	L100
<b>Price (in ₹)</b>	8,155	4,699	4,999	9,999	7,499	8,999
<b>Grand Total</b>	52.32	49.44	60.12	47.38	56.14	40.19
<b>Features</b>	4.25	6.82	14.89	0.78	14.95	1.53
<b>Performance</b>	48.07	42.62	45.23	46.6	41.19	38.66
<b>Features</b>						
Maximum print resolution (dpi)	9600x2400	4800x1200	4800x1200	5760x1440	5760x1440	5760x1440
Power Saving Mode (Y/N)	N	N	N	N	N	N
Duplex printing (Y/N)	Y	N	Y	N	Y	N
Ink Saving Mode (Y/N)	N	N	N	N	N	N
Number of Cartridges Used	5	2	4	6	4	4
Cartridge Colours	CMYK, Black	Colour, Black	CMYK	CMYK, Light Cyan, Light Magenta	CMYK	CMYK
Scanner (Y/N)	0	0	0	0	0	0
Print Memory	NA	NA	32MB	NA	NA	NA
<b>Connectivity</b>						
USB 2.0 (Y/N)	Y	Y	Y	Y	Y	Y
Network printing support (Y/N)	N	N	Y	N	Y	N
WiFi support (Y/N)	N	Y	Y	N	Y	N
<b>Performance</b>						
Photo 1 (Quality) / 10	6.42	6.08	6.75	6.83	6.08	6.92
Photo 1 (Time) sec	101.1	187.5	141.1	226.8	279.2	623.8
Photo 2 (Quality) / 10	7.25	6.67	6.08	7.33	6.08	6.83
Photo 2 (Time) sec	97.1	183	134.5	218.7	269.3	594.1
Photo 3 (Quality) / 10	7.7	6.9	6.1	7.6	6.4	7.6
Photo 3 (Time) sec	106.9	198	153.2	250.4	306.4	685.3
Mixed Document (Quality) / 10	5.93	5.36	4.57	5.71	5.21	5.00
Mixed Document (Time) sec	67.9	81.4	41.5	17.3	36.4	80.5
<b>Miscellaneous</b>						
Bundled Cables	Power cable, USB cable	Power cord, Power adapter, USB cable	Power cable, USB cable	Power cable, USB cable, LAN cable	Power cable, USB cable	Power cable, USB cable
Software Supplied	Canon Utilities	HP Solution Centre	HP Solution Centre	Epson Easy Photo EX	Epson Easy Photo	Epson Easy Photo
Dimensions (W x D x H)(mm)	431 x 297 x 153	453 x 207 x 172	458 x 389 x 164	450 x 289 x 187	445 x 330 x 154	487 x 228 x 135
Weight (Kg)	5.7	2.73	4.8	5.5	4.5	2.8
<b>Build Quality</b>						
Body	6	7	7.5	7	7.5	6.5
Folding / Hinges	6	7	7	8	7.5	7
Tray Quality	5	6.5	7	7.5	7	6.5
Buttons	6.5	7	7.5	6.5	7	7.5
<b>Ease of Use</b>						
Hardware Connections	7	7.5	7.5	6	7	7.5
Cartridge Installation	8	7.5	7.5	7	7.5	6
Paper loading	5	6.5	7	8	7	7.5
Software User Interface	7	7.5	7.5	7.5	7.5	7.5

## City of Heroes now free

The game will be renamed as City of Heroes Freedom and offer free-to-play models this August

## iPhone rumours

Rumours are abound that the next iPhone will feature an A5 processor and an 8MP camera, and release in September

## Photo Printer Test

some other printers, and font clarity wasn't good. Font clarity became even more fuzzy at fast draft printing mode for mixed documents. Coupled with its average performance and high asking price, the T60 doesn't win any awards in this comparison.

### Epson ME Office 82WD

This is the best of all three Epson printers in our comparison test, the ME Office 82WD. It is also by far the sturdiest of all three Epson printers, as well. The printer feels nice and solid on the outside, and it has a well-built inlet paper tray, situated below the flap for the output paper – we know the description makes the two trays sound like they're squeezed for space but that's not the case practically, they're quite roomy.

The printer is non-glossy, with a matte black finish all around – this keeps fingerprint smudges at bay, if you're partic-

buttons. The printer's top is flat – like an MFD's – and its "bonnet" needs lifting to reveal the cartridge bay and other print mechanism within the 82WD. The printer uses four Epson cartridges – Cyan, Magenta, Yellow and Black – for printing.

The 82WD performed admirably well – photo printing was very good, with detailed colors, gradient, adequate saturation and sharpness across all three test photos. Mixed document print at best quality took just over 30 seconds, which is pretty good. In fact, the Epson 82WD has the second best combination of features and performance at its price, behind the HP Officejet 6000 e609a, getting the coveted Editor's Pick award in this comparison.

### Canon Pixma iP4870

This printer isn't as large as the Epson T60, but it's definitely a worthy contender for number 2 as far as form factors go. The



Epson ME 82 WD  
Price ₹7,499

ular picky about your printer's external looks. The ME Office 82WD's front left panel has power, cancel print, low ink level indicator, and Wi-Fi and Ethernet print buttons – the dialpad is placed conveniently with comfortable clickable

Pixma iP4870 has two trays for loading paper – the bottom cassette and the back-loading tray. The back-loading tray is erected by lifting a small flap on top of the iP4870, while the common output tray opens down at the front of the printer.



Canon Pixma iP4870  
Price ₹8,155

The cassette is used for printing on plain paper where as the back-loading tray is strictly for photo papers only.

We had a hard time feeding paper from the Pixma iP4870's front cassette, which chugs along a groove at the bottom of the printer. First of all, the cassette is way too short to accommodate A4 paper. Secondly, if you try to fit the paper inside the tray and push the tray inside the printer, the paper gets squeezed and extends outside the printer from its underside – the paper's end fails to catch the tightly placed wheel and pop into the printing bay. It is with great difficulty and careful manoeuvring that we managed to take mixed document prints from the Pixma iP4870's front cassette.

No such problems were encountered while printing photos from the back-loading tray. In fact, the Pixma is one of the fastest printers to spew out quality photo prints in record time, compared to the other HP and Epson printers in this comparison. A photo print's speed to quality ratio

is also the best. In fact, once you look at the quality of photos (and mixed documents) printed by the Canon Pixma iP4870, it's very easy to forget its front cassette woes. The photo prints reproduced skin tones and glow extremely well, and saturation levels were just right. Gradients were smooth, reflections and shadows were believable, and the overall photos were crisp. Mixed documents also fared very well on the Pixma iP4870.

Visiting Canon's site's download section to the get printer drivers was easy. The site had clear download sections, and a step-by-step process guiding you along. Good experience. Setting it up the printer was nice and easy, no problems whatsoever. Slotting in cartridges had a nice touch – if a cartridge is inserted rightly at the corresponding colour code, it blinks red, a good visual indicator that all is well. The Canon Pixma iP4870 deservedly takes Best Performer crown in the comparison for its overall unmatched photo quality. **d**

# Bazaar

mini <sup>QUICK</sup> INSIGHTS FROM INDEPTH TESTS

The Digit Test Centre receives hundreds of products every month. Each of these products is put through a series of tests, and are finally given a verdict. The final score is arrived at after considering a number of factors and evaluating them in terms of features, performance, value for money, build quality, and in the case of software even ease of use.

For better understanding of our ratings, here's a quick guide to our overall score

1.0 - 3.0 - Extremely poor product. Keep away!

3.5 - 5.0 - Strictly OK. Not recommended

5.5 - 6.5 - Decent product. Go for it, but there may be better products.

7.0 - 8.5 - Very good product. Highly recommended.

9.0-10.0 - Ground-breaking product. We've never seen anything like it before. A definite must buy!



## Apple's server OS

Apple's Mac OSX Lion for desktop and server will arrive in the Mac App Store in July, available as 'download only'

### HEADSET



**Philips SHB6110**

Price: ₹3,990

### LAPTOP



**Lenovo Z570**

Price: ₹32,700

### SPECIFICATIONS

Form factor: Supra Aural  
Frequency Range: 14 – 24,000 Hz  
Compatible with: Mobile Phone, PC,  
Bluetooth adapter, MP3 player

CPU .....Intel Core i3-2310M  
RAM.....3 GB  
Graphics .....NVIDIA GeForce GT520M  
HDD.....640 GB

### TEST CENTRE RATINGS (All Scores out of 10)

**Features.....7.0**

Bluetooth headset housing 32 mm neodymium speakers. Adjustable soft rubber hooks around earloops.

**Performance .....6.5**

Decent bass for a BT headset. Adjusting volume, changing tracks, redialling is a breeze. Call clarity is good.

**Build quality .....6.5**

Strong plastic assembly. Buttons have good contours and feedback which enhance blind operation.

**Value for money .....5.0**

Recommended for under ₹3,000.

**Features.....7.0**

USB cum E-SATA port, 3 other USB ports, HDMI port. Excellent for casual gaming.

**Performance .....7.0**

Not standout by any stretch; at par with other notebooks at this price.

**Build quality .....7.5**

Well-built notebook with brushed metal on the inside. Chassis has some flex. Nicely spaced keypad, but keys are tiny.

**Value for money .....7.5**

If you're looking for a reasonably powerful multimedia notebook, the Z570 will satisfy.

### WE SAY

6.0

Philips SHB6110 provides decent call clarity and pleasant audio quality. Bass was mild and not boomy, mids were quite pronounced. It's great for casual listening and with specified battery life of 14 hours, is a good travel companion. However, don't expect audiophile grade quality. Volume level could've been higher considering the not-so-great sound isolation. Another factor that puts one off is the absence of forwarding / rewinding a particular track.

7.0

Yet another entrant into the desktop replacement arena. It's becoming a busy sector with higher-end graphics solutions getting ever cheaper, thereby finding their way into the sub-₹40,000 notebook category. If you're looking for something in this price range, and don't mind a relatively large notebook (15.6 inches), we find the Lenovo Z570 a pretty solid offering.

#### ALSO SEE:

- 1) **Acer Aspire 4820T**  
March 2011
- 2) **ASUS P52F**  
March 2011
- 3) **Acer 5742G**  
March 2011



## Microsoft upgrades Live Skydrive

Skydrive now has faster access, a better interface and photo viewer

## Nokia confirms Symbian Anna update

Nokia will ship N8, E7, C7 and C6-01 pre-loaded with the OS in July

Bazaar mini

### HARD DRIVE



**Iomega USB 3.0 64 GB**

**SSD Flash drive**

Price: ₹11,000

### SPEAKERS



**Creative T12 Wireless**

Price: ₹5,499

### SCANNER



**Portronics Scanny 3**

Price : ₹6,499

### CAMERA



**Kodak Easyshare Mini M200**

Price : ₹5,299

### SPECIFICATIONS

NAND Flash Type ..... MLC NAND Flash  
Interface ..... USB 3.0, USB 2.0  
Hardware Encryption ..... Yes  
Weight ..... 113 gms

Power.....9 watts RMS per channel  
Frequency Response..... 45Hz – 17kHz  
SNR .....75 dB  
Weight ..... 589 gms

Paper Sizes supported: A4, A5, 5R, 4R, 3R; Resolution: High (600dpi), Low (300 dpi); File Format: JPEG; Interface: USB 2.0, Bluetooth

Resolution.....10 MP  
Sensor Type ..... CCD  
Optical Zoom.....3x  
Screen ..... 2.5 inch, 230,000 dots

### TEST CENTRE RATINGS (All Scores out of 10)

**Features.....7.5**

Is a USB 3.0 with an in-built AES encryption utility which lets you lock your drive with a password.

**Performance .....6.5**

Despite being an SSD USB 3.0 flash drive the speeds were slow. Sequential Read / Write: 86.23 / 73.14 MB/s; Assorted Read / Write: 75.15 / 68.84 MB/s.

**Build quality .....8.5**

Has a strong aluminium finish and is resistant to water drops thanks to an in-built padding at the edges.

**Value for money.....3.0**

Very expensive for a mere 64 GB. Not recommended at this price.

**Features.....7.0**

Can play media from a phone or media player over Bluetooth. Two speakers connect to each other through a 3.5mm jack.

**Performance .....7.0**

Pairing them with an Android phone over Bluetooth was quick. response was nice.

**Build quality .....7.5**

Its drivers are exposed. The unit's power brick is hidden within the speakers.

**Value for money.....7.5**

These aren't the most cost-effective audio solution.

**Features.....7.0**

Scanny 3 is a portable scanner which supports Bluetooth connectivity along with the traditional transferring of images via a micro USB cable.

**Performance .....7.5**

It offers high resolution scanning at 600dpi and low res scanning at 300 dpi.

**Build Quality.....7.5**

Sturdy build with buttons which have good tactility. Easy to carry around due to light weight.

**Value for money.....6.5**

Scanny products are worth their money.

**Features.....7.0**

Compact point-and-shoot camera with a Share button to share your photos to various social networking sites such as Facebook, Twitter, Flickr, etc.

**Performance .....5.5**

Great for casual shooting outdoors; indoor shots were noisy. Macro shots lack detail and images are blurry.

**Build Quality.....5.0**

The all-plastic body makes it light and easy to carry around.

**Value for money.....6.5**

The offer price of ₹5,299 is quite decent for this entry-level camera.

### WE SAY

6.0

Portable SSD drives is an interesting product category, but they should have speeds which will make them stand out. Sadly, with the Iomega drive that wasn't the case as we found it to be quite slower than the Kingston HyperX USB 3.0 64 GB flash drive. Also, the pricing of the Iomega drive is way too high – almost double of the Kingston drive – for its capacity and performance. Inbuilt encryption is one edge Iomega has over the Kingston drive, but when it comes to sheer speed, the Kingston drive is ahead.

7.0

These are Bluetooth-enabled stereo speakers with a tiny form factor for home and office use. Both, the left and right speakers feature a single driver, however, bass is produced through a unique backward firing design. They're surprisingly loud for their compact size and while the bass may not be very accurate, it's again unexpectedly meaty. The mid-range is accentuated while extreme highs are dampened.

7.0

Portronics' Scanny is an innovative product and they've been improving their feature set with every iteration. This one is very similar to Scanny 1 and adds Bluetooth support so you don't have to bother with wires. Due to the digital screen you can't preview the photos before sending them over Bluetooth, so it's best for instant scanning and sending. Ideal for travelling professionals and students, who may want to quickly scan documents and share them. Portability makes this product all the more attractive. Unlike Scanny 2, here you have to ensure a steady hand for a flawless output.

6.5

The M200 is ideal for those highly active social media enthusiasts who want to quickly share all their photographs on these various platforms. It makes sharing photos on the net a quick process, but you need to be connected to use the Share functionality. High quality prints is not this camera's forte as was seen in indoor photographs which showed lots of noise. It doesn't offer enough manual functionality except the various scene modes. The bundled 4 GB SDHC card sweetens the deal.

## Google updates search filter

Google announced a version 2.2 of Panda at the SMX conference

## How bad is cybersecurity?

Check the stats here -  
<http://zd.net/mp6w5l>

## LAPTOP



## Zenith Rhodium

Price: ₹15,000

## MOUSE



## Microsoft Arc Touch

Price: ₹3,600

## SCANNER



## Epson ME 900WD

Price: ₹13,999

## ANTIVIRUS



## Kaspersky Mobile Security 9

Price : ₹599

## SPECIFICATIONS

Screen ..... 13.3-inch, 1366x768 res  
CPU ..... Intel Atom D410 1.66-GHz  
RAM ..... 2 GB  
HDD ..... 160 GB

Connection ..... Wireless  
Design ..... Folding  
Type ..... Ambidextrous  
Battery ..... 2 x 1.5V AAA

Print Resolution ..... 5760 x 1440 dpi  
Interface ..... 2.0  
Wi-Fi Support ..... Yes  
Cartridges ..... CMYK

Type ..... Antivirus, malware protection  
Platform ..... Android  
License ..... 1 year

## TEST CENTRE RATINGS (All Scores out of 10)

## Features ..... 7.0

Standard hardware features, a larger screen and an extra USB port

## Performance ..... 6.5

Despite its larger frame, the Rhodium performed as well as any Intel Atom-based netbook.

## Build quality ..... 5.0

Build quality isn't admirable. The keyboard and touchpad are clunky, and the overall chassis felt unimpressive.

## Value for money ..... 8.0

For the price of a 10-inch netbook, you get a 13-inch machine with a wider keyboard to type on.

## Features ..... 7.0

Stylish folding wireless mouse. Unique touch-enabled scroll bar strip instead of a scroll wheel and Microsoft's BlueTrack technology.

## Performance ..... 7.5

Worked brilliantly on a majority of surfaces and offered good range of over 15 feet.

## Build quality ..... 7.0

Despite its fold-n-lock design there are no creaky hinges.

## Value for money ..... 6.0

This mouse is priced pretty steeply, making it a luxury item. Plenty of cheaper alternatives – some from Microsoft, themselves.

## Features ..... 6.5

A colour inkjet MFD with scanbed, Wi-Fi and network connectivity. Has an SD card slot. Operational panel can swivel.

## Performance ..... 6.0

Slow at printing at highest quality. Quality of the mixed document print was good.

## Build quality ..... 7.0

Compact form factor with sturdy hinges and tray. Swivel mechanism of control panel is good.

## Value for money ..... 5.5

Not the best quality photo prints, but great for office use.

## Features ..... 6.5

Antivirus, privacy control, anti-theft, call and SMS filter. Encryption and parental control features not supported on Android.

## Performance ..... 7.0

Core processes work well - for total scan or scheduled scan.

## Interface ..... 7.0

Easy-to-use interface. Features and options displayed prominently and accompanying text is helpful.

## Value for money ..... 6.0

Right now, KMS 9 doesn't offer anything significantly better than other security suites for smartphones.

## WE SAY

7.5

If you're fed up of the tiny, compromising form factor of a netbook, then the Zenith Rhodium is for you. It's practically a super-sized netbook – running on an Intel Atom processor – in a 13-inch shell. That means a larger screen, bigger keyboard and touchpad, and better usability than any 10-inch netbook. But bear in mind that it performs similar to a netbook, so don't expect to multitask with more than a few apps. It can play 1080p HD files but its screen viewing angles are poor and the accompanying 6-cell battery isn't great. Worth a shot if you want a large-sized netbook at an attractive price.

6.5

The Microsoft Arc Touch is an elegant wireless mouse with a folding design. It's ridiculously easy to set up but difficult to use in the beginning. We fumbled with it for the better part of a day to train our muscle memory, after that, however, the mouse behaved pretty well. The Arc Touch's scroll bar lets you scroll a page like never before with flick and double tap gestures. Its BlueTrack sensor is very good, working flawlessly on a variety of surfaces. At the end of the day, this is still a luxury item as its priced way too high.

6.0

Epson ME 900FWD is great to use in a home or small office environment where Wi-Fi capable laptops can connect to the MFD wirelessly. The SD card slot adds another a connectivity option. The cost per cartridge is ₹358 (235 prints) for a black cartridge and ₹404 (425 prints) for coloured ones, which gives economical cost per print for an inkjet printer. Economy prints are useless whereas quality prints do take comparatively longer than the ME 960FWD and ME 620F in some cases.

6.5

A comprehensive security suite, KMS 9 is easy to set up and run, and it has a simple interface. It also offers a whole host of features beneficial for your smartphone, but it has them customized for different platforms. Apart from standard antivirus, we like its anti-theft module which sends email and SMS alerts with GPS coordinates when a phone is lost. Privacy control also works well. Kaspersky would've sweetened the deal by including encryption and parental control for all platforms. Good buy for Symbian and WinMo phones. Others should wait and watch.

## Silent killers banned

Electric bikes banned in Shenzhen, China, for being 'too silent' – the cause of 15 per cent of accidents

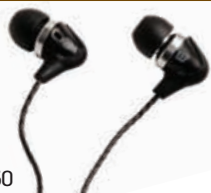
## Watch out Skype!

Google is working on integrating video chat directly into the Chrome browser

Bazaar mini

### HEADPHONES

**Brainwavz Pro Alpha**  
Price: ₹1,950



**JVC HA-FX34 Marshmallow**  
Price: ₹550



**TDK MCB300**  
Price: ₹1,150



**Brainwavz M2**  
Price: ₹2,590



#### SPECIFICATIONS

Sensitivity: 115 dB; Impedance: 20 ohm; Cord length: 1.3m; Frequency response: 10 - 26,000 Hz

Sensitivity: 100 dB; Impedance: 16 ohm; Cord length: 1m; Frequency response: 8 - 23,000 Hz

Sensitivity: 95 dB; Impedance: 32 ohm; Cord length: 1.2m; Frequency response: 20 - 20,000 Hz

Sensitivity 115 dB; Impedance 20 ohm; Cord length 1.3m; Frequency response 10 - 26,000 Hz

#### TEST CENTRE RATINGS (All Scores out of 10)

Features ..... 6.5  
Performance ..... 6.5  
Build Quality ..... 6.5  
Value for money ..... 6.0

Features ..... 5.0  
Performance ..... 5.5  
Build Quality ..... 6.0  
Value for money ..... 7.0

Features ..... 5.0  
Performance ..... 6.0  
Build Quality ..... 6.0  
Value for money ..... 6.0

Features ..... 6.5  
Performance ..... 7.0  
Build Quality ..... 7.0  
Value for money ..... 6.0

#### WE SAY

The sound signature is a lot like the M2 but with an over-accentuated treble section. For similar performance, but with better fit, comfort, isolation and, more neutral sound we'd recommend going for MEElectronics' M6 and at a lesser cost. **6.5**

The Marshmallow was the pipsqueak of the lot with not much range across the spectrum. Though not bad, its performance pales in comparison to any of the IEMs featured here and the M6 from MEElectronics. What makes Marshmallow attractive is the colour options and price. **6.0**

Highly exaggerated lower-mids and mids section make the sound mellow at the cost of clarity. Only piano-driven music sounds decent. The chord was another sore point for us; very flimsy. At this price, we'd urge you to look at other options. **6.0**

Slightly exaggerated bass. Soundstaging was quite good with adequate instrument separation; the most roomy IEMs we've come across so far. Build quality of both housing and cord is good. Had the price been sub 2k buying these would've been a no brainer. **6.5**

### PEN DRIVE



**Silicon Power Blaze B10 32 GB USB 3.0**  
Price: ₹3,250

### MOUSE



**TAG Folding Mouse**  
Price: ₹700

### HARD DRIVE



**Seagate GoFlex Slim STBE320100**  
Price: ₹4,500

### HARD DRIVE



**Silicon Power Stream S10**  
Price: ₹4,750

#### SPECIFICATIONS

Capacity: 32 GB; Interface: USB 3.0; Dimensions: 72.4 x 17.4 x 10.0mm; Weight: 9.5g

Connection Type: Wireless  
Frequency: 2.4 GHz; Range: 10 meter; Warranty: 1 year

Capacity: 320GB; Interface: USB 2.0 and USB 3.0; Warranty: 3 years

Capacity: 750 GB; Interface: USB 3.0/ USB 2.0; Bundled software: SP Widget

#### TEST CENTRE RATINGS (All Scores out of 10)

Features ..... 6.0  
Performance ..... 5.0  
Build Quality ..... 7.0  
Value for money ..... 5.5

Features ..... 5.0  
Performance ..... 6.5  
Build Quality ..... 6.0  
Value for money ..... 7.0

Features ..... 7.0  
Performance ..... 8.5  
Build Quality ..... 7.0  
Value for money ..... 7.0

Features ..... 6.5  
Performance ..... 6.0  
Build Quality ..... 6.5  
Value for money ..... 7.0

#### WE SAY

Silicon Power Blaze is a 32 GB USB 3.0 drive and backward compatible with USB 2.0 and USB 1.1. 32 GB is the highest capacity pen drive we've tested. However, for those looking at performance, the Kingston Data Traveller 16 GB makes better sense. **5.5**

It's exactly like the Microsoft Arc Mouse. The buttons and central scroll-wheel work well. The basic plug-n-play mouse works well on a tabletop within a range of 20 feet. Its foldable panel reduces the mouse's size, making it a portable contender for your laptop while travelling. **6.5**

Makes sense if you're looking at speedy data transfer and a sleek-looking drive. The detachable SATA-to-USB 3.0 adapter means that this drive can be used in SATA brackets found on various Seagate products such as its HD Media players. Great companion to USB 3.0 laptops. **7.5**

For those looking at an affordable high capacity USB 3.0 drive, the Silicon Power S10 comes recommended. Performance junkies are better off with the Seagate GoFlex Slim 320GB drive, but will have to pay a similar amount for less than half the capacity offered by S10. **6.5**



## At last Intel has a real 4 GHz CPU

The recently introduced Xeon E3-1290 runs at 3.6 GHz with four cores, but the chip's turbo boost will scale the clock speed to 4.0 GHz <http://bit.ly/lhlfNs>

## Robots to monitor oceans

Liquid Robotics has solar-powered robots monitoring oceans and marine life for signs of rising oceans and atmosphere warming.

# HTC Sensation

## A mixed sensation!

### Specifications

**Platform:** Android 2.3; **Display:** 4.3-inch, S-LCD, 540 x 960 pixels; **SoC:** Qualcomm MSM8260 1.2 GHz dual core; Adrenon 220 GPU; 768 MB RAM; 1 GB ROM; **Battery:** 1520 mAh; **Weight:** 148 grams

### Contact

**Bright Point India**

**Phone:** 9910821100

**Email:** [nitin.pandita@brightpoint.com](mailto:nitin.pandita@brightpoint.com)

**Web site:** [www.htc.com/in](http://www.htc.com/in)

**Price:** ₹32,700

The Sensation found its way into our labs just three days post its launch, and after having used it we must say two things. One – it's quite a device, and two we're mildly disappointed that HTC chose to cut some corners.

The Sensation is a large phone, but feels smaller than the Galaxy S2 owing to smaller top and bottom bezels. It's heavier and thicker than the S2 though and therefore bulkier, but feels sleeker than the HTC Desire HD. The display is too glossy for our liking, and reflects everything! It's well built and has a thick, snug fit battery cover, but is not a unibody in the truest sense of the term. The chrome mesh earpiece grille

is a flagship device. The four capacitive buttons beneath the display are sufficiently spaced and adequately backlit.

The Sense UI 3 is snappy, and apart from a fresh look, also has a number of useful additions such as the "quick settings" menu available when pulling down the notifications bar. The home screens also cycle through – useful for one-handed operation.

The higher display resolution (540 x 960 pixels) is very welcome – you can see more on the display at once, browsing and reading fine text is a joy – much more so than on the Galaxy S2, where fine text appears aliased and not as crisp as on the Sensation. However, in terms of colour saturation and contrast, the Sensation's display isn't as good as the Incredible S', and is way behind the S2's display.

The keypad is really nice, and is at par with the Galaxy S2 – which is excellent for SMS junkies. The Sensation's spacebar is uncomfortably close to the back key and this leads to typos.

Powered by a Qualcomm MSM8260, the Sensation is as fast as would be expected with a dual core 1.2 GHz CPU. We'd have loved an extra 512 MB of RAM or so, since there's less headroom for multitasking than the Galaxy S2, which has 1 GB of RAM. We should add that the Sensation didn't slow down with even 5 or 6 apps open,

Other than the very sporadic niggle, the Sensation is fast through all its options and menus. We'd rate the S2 as being a little faster, but to be fair, the Sensation's 3D interface is surely more taxing on the hardware. We noticed that web sites flip

and reorient faster than on the Galaxy S2.

This phone doesn't suffer from the death grip that is prevalent in some HTC phones. That being said, holding it around the top half causes the Wi-Fi signal to drop a bar. There also seems to be a slight issue with changes in vocal tones at times, especially when the phone is in areas of mediocre GSM signal coverage. Antenna quality is not the best, and we'd rate it as 10 to 15 per cent worse than the S2, which wasn't perfect either. On-call, the earpiece is loud, as is the speaker, though it is tinny and distorts some voices.

The 8MP clicker is very similar to the one on the Desire HD. It produces good photos in bright light and falls flat indoors, just like other cell phone cameras. Video recording is not as good as on the S2 – the camera is slower, with more lag and visible grain. Battery life is approximately 15-20 percent worse than the Galaxy S2, which is rather mediocre we feel.

The MRP of the Sensation is ₹32,700, which is expensive compared to other HTC Android phones, but then you're getting an extra processor, and with it (hopefully) some future-proofing. It's a good device overall, but HTC has failed to address a couple of existing niggles, whilst introducing a couple of new ones.

If the Galaxy S2 had this display resolution and interface, it'd be perfect, and we'd buy in a heartbeat. Conversely, if the Sensation had the S2's display, its lightweight design and sleek profile, it would truly be a *sensation*, and win our unabashed adoration.

*Michael Browne*



7.5  
10

Features ..... 8.0  
Performance ..... 7.5  
Build Quality ..... 7.5  
Value for money ..... 7.0

is reminiscent of the Desire HD, but shockingly, the front-facing camera is set inside the metal bezel instead of being a flush fit – this looks cheap. There's a slight gap between the metal bezel and the glass of the display – more tackiness, which is shocking for

## Charge your phone with your t-shirt

Orange UK has created a t-shirt that uses sound vibrations to generate an electric charge which you could then use to charge your cellphone.

## Dell intros new storage solutions with Fluid Data Architecture

Dell is expanding its storage solution offerings using its Fluid Data Architecture

Bazaar

# Samsung Galaxy S II

## Breathtakingly brilliant

The Galaxy S II is extremely lightweight and sleek, in spite of its very powerful configuration. Phones such as the Samsung Google Nexus S, the HTC Incredible S and the Sony Ericsson Xperia Arc seemed sleek thus far, but this one just raises the bar.

The 4.3-inch display is accompanied by two touch-based keys, for menu and return. There is a hardware button for home, but what's missing is the traditional search button, common on most Android phones. The rear panel has the 8MP camera, with an LED flash. Below the battery bay cover is a tiny speaker. You will need to grow a fingernail to be able to open this battery cover though - which is disappointing, because you spend 30 grand and have to pry open your phone the same way you would on a cheap, Chinese model.

We would have loved to see an HTC Incredible-esque rubberised back panel, or something with a metal finish, but looking at it from Samsung's perspective, keeping the weight down was a priority.

This is the second phone after the LG Optimus 2X to get the goodness of a dual-core processor. The ARM Cortex A9 (1.2 GHz dual-core processor) is teamed up with the Orion chipset and Mali 400MP GPU. Android 2.3.3 is preloaded, along with Samsung's TouchWiz 4.0 UI.

Besides this, Samsung has preloaded the Galaxy S II with quite a few useful apps: Game Hub, Social Hub, Readers Hub, a full-fledged office suite - Polaris Office, a file explorer/manager and a rejigged task manager.

Its performance is absolutely stunning. The interface is silky smooth, applications open up in a flash and even with multiple apps open in the background, the phone doesn't slow down.

To see how good the gaming performance is, we downloaded GTRacing HD from the Game Hub app. Once the download was done, it was a delight to play this game. Loading times were much less than what we have seen on other devices and the game-play was silky smooth. The frames did not stutter, even after half an hour of continuous racing!

Just to be sure, we ran the Quadrant benchmark on the Galaxy S II, and the results surprised us quite a bit. While we knew that this phone had a considerable advantage over its rivals, we didn't expect humiliation! Check out the image at the bottom to see what we are talking about. And all this was on the stock Android 2.3.3 ROM installed by Samsung, with the usual TouchWiz UI etc.

The 4.3-inch Super AMOLED Plus display (480x800 pixels) is an absolute delight. Switch it on and

the first thing that grabs your attention are the vivid colours jumping out at you. In most cases, setting the brightness at about 30 to 40 per cent is more than enough, indoors as well as in sunlight. Indoors, even at 0 per cent brightness, the display offers excellent visibility.

Coming to the interface, the first thing you'll notice is the lockscreen. You can swipe in any direction to unlock the screen. If you get any calls or messages when the screen is locked, there will be a distinct notification. "What's new?" you ask? If you receive an SMS, and click on the notification on the lock screen, you'll be taken straight to the message. The same goes for missed calls.

Call quality is superb; during our test, the person on the other end remarked that the voice clarity was exceptional. The ear-piece volume is loud and clear, even at 50 per cent, so there's no need to push it any further.

The 8MP camera does a very good job, both with pictures and videos, and the ability to record 1080p HD videos is a huge value-add.

The battery life is quite surprising and lasted about two days.

What Samsung has managed to package together is a dual-core processor, an excellent 4.3-inch display and a brilliant camera, while managing to keep it unbelievably slim and light. While the plasticky feel is a bit of a disappointment, the performance will simply blow you away. This phone will be a reference point for future dual-core Android phones, at least for a little while.

Visbal Mathur



## Specifications

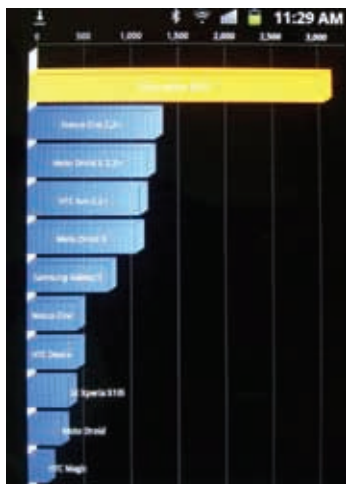
**Network:** Quadband GSM+ 3G; **Processor:** ARM Cortex A9 1.2GHz with Orion chipset and Mali 400MP GPU; **Display:** 4.3-inch Super AMOLED Plus with 480 x 800 resolution; **Memory:** 16 GB internal+ up to 32 GB microSD card; **Camera:** 8 MP, 1080p (30fps) video; **OS:** Android 2.3.3 with TouchWiz 4.0 UI; **Battery:** 1650 mAh

## Contact

**Samsung India**  
**Phone:** 30308282  
**Email:** support.india@samsung.com  
**Price:** ₹32,890

8.0/10

Features.....8.0  
Performance.....8.0  
Build Quality .....6.5  
Value for money .....7.5



## Google buys SageTV

The platform allows people to record live television thanks to support for antenna TV, cable and satellite.  
<http://cnet.co/ixZJtl>

## Microsoft takes on Google

Microsoft plans to expend as much as \$80-100 million to boldly enter what is clearly Google's domain: Search  
<http://bit.ly/3fxJla>

# Acer Iconia Tab A500

## Good user experience, but not quite iconic

**A**ndroid had released the Honeycomb operating system sometime earlier this year as an OS meant

You will notice apps placed in a drawer section on the homepage, which houses related applications. There's Multimedia, Social, eReading and GameZone which are the broad categories and you will have related applications such as audio / video player apps under Multimedia, Lumiread and the Browser under eReading and so on. With the help of a round button housing the plus sign, you can add extra applications under each section.

This functionality is somewhat similar to the Folder function in the iOS, except that in the Honeycomb OS, you do not have the ability to name the folder. Visually though it looks much better than the Folder implementation on the iOS, but then again, it just adds more clicks needed to get into a particular application.

The settings menu is quite exhaustive with an additional option called Dolby Mobile. You'll notice apps placed in a drawer section on the homepage, which houses related applications. There's Multimedia, Social, eReading and GameZone as broad categories.

The Iconia A500 has an LCD screen which was a huge let-down. The picture quality and brightness levels are good, but the colour accuracy is debatable as we found a heavy bluish cast

on the screen. The on-board 5 MP camera is quite okay for casual shooting in outdoor conditions. Shots taken indoors were noisy. Video shooting is poor with jerky videos and there's no option to zoom in or out while live shooting. However, we liked the implementation of camera functionalities in the rotary dial sort of a way. The Acer Iconia Tab A500 lasted a good two days on full charge, with regular surfing on Wi-Fi, watching YouTube videos, push email, listening to music, gaming and reading ebooks.

The onscreen keypad is great to type on in both the landscape and portrait mode. In the landscape mode, you will not be able to type comfortably with your thumb, so you will end up using one hand to hold the tablet and the other to type. Holding the tablet in the portrait mode allows easy typing, but your as the keypad is located in the bottom, balancing the tablet while speedy typing is an issue.

The Acer Iconia Tab A500 has a good underlying software coupled with decent hardware. But we think the display can be improved. The user interface of the Honeycomb OS and its response is great. However, the OS needs a learning curve and isn't as intuitive as the iOS. As far as Android tablets go, this is the best on the market right now thanks to its dual-core processor and operating system. The price of ₹27,990 is lower than the iPad 2 (16GB). It's a value for money product for the features and performance on offer.

*Nimish Sawant*



## Specifications

**Operating System:** Android 3.0 (Honeycomb OS); **Resolution:** 1280x800 pixels; **Screen size:** 10.1 inches; **Processor:** NVIDIA Tegra 2 (1 GHz); **Connectivity:** Bluetooth 2.1, Wi-Fi, USB 2.0; **Camera:** 5 MP (rear), 2 MP (front facing)

## Contact

**Acer India Pvt Ltd**  
**Phone:** 080-39408700  
**Email:** [ailenquiries@acer.co.in](mailto:ailenquiries@acer.co.in)  
**Web site:** [www.acer.co.in](http://www.acer.co.in)  
**Price:** ₹27,990

7.0  
/ 10

Features.....8.0  
 Performance.....7.0  
 Build Quality .....6.0  
 Value for money .....7.0

for the tablet product category. Sporting this OS, Acer's Iconia Tab A500 has reached the Indian market, and even before Motorola Mobility got Xoom here..

Google built the Honeycomb user interface from the ground up and it looks nothing like its smartphone cousins. The display is divided into five home screens. It houses the NVIDIA Tegra 2 system on chip with a snappy 1 GHz dual-core processor. Navigating through the home screens is breezy and long holding a particular home screen will give you a zoomed out view of the five home screens with options to add more widgets, applications and wallpapers, among other things to the screens via a simple drag-and-drop mechanism.



## Google Music versus iTunes

The Apple versus Google war will touch the clouds when Google Music faces iTunes

## MeeGo-powered Nokia N9 phone

The N9 will be Nokia's first and last smartphone running the Linux-based MeeGo OS

Bazaar

# Audio-Technica ATH-AD300

## Unmatched Comfort

Even before actually trying on the pair, a few things will stand out. The lattice grill at the back of the driver cups is something that will instantly catch your eye. With Audio-Technica's signature wing design, the 200g weight (which is quite light to begin with) is barely felt on your noggin. They're supremely comfortable.

The build quality of the headphones is a bit of a paradox. They don't seem to be badly built, but at the same time give you the impression of being flimsy.

The sound on most tracks had a spacious feel to it. Being open cans, there was hardly any pressure. There is little or no iso-

lation to speak of. While this is not a headphone for bass heads, to its credit we should say that it played our 30Hz sample which is usually an accomplishment in itself for headphones in this price range. However the sample wasn't as hard-hitting as it should have been. The bass sounded less impactful and a little loose even. Cymbals are extremely pronounced thanks to the accentuated highs. Vocals are near-neutral, sharp, rich and pleasing. The sound sig-



nature of the ATH AD-300 is decidedly bright, even bordering on the sibilant but most non-discerning ears won't notice anything amiss. The sound quality is above average and the comfort is phenomenal. At a price of ₹3,550 the ATH-AD300 make for a perfect maiden purchase for anyone gingerly taking their first steps into the audiophile arena. Since they've been officially discontinued, availability may be an issue.

Siddharth Parwatay

## Specifications

**Driver Type:** Open-air  
**Dynamic;** **Driver size:** 40 mm  
**Frequency response:** 20 - 25,000 Hz; **Maximum input power:** 300 mW  
**Sensitivity:** 96 dB/mW at 1 kHz; **Impedance:** 32 ohms

## Contact

**PristineNote**  
**Phone:** 022-65783862  
**Email:** support@pristinernote.com  
**Web site:** www.pristinernote.com  
**MRP:** ₹3,800 **SRP:** ₹3,550

7.0  
10

Features.....6.0  
Performance.....7.0  
Build Quality .....6.0  
Value for Money ..... 7.0

# Cooler Master CM Storm Spawn

## Nice and cosy!

For all those gamers out there who use a claw grip, Cooler Master's CM Storm Spawn vies for your attention. Packed in an attractive box, the Spawn is quite a snazzy mouse. It has a two-toned color scheme with a blend of metallic red and dull black finish. It instantly grabs your attention, quite unlike a glowing Alienware mouse. The CM Storm Spawn is highly ergonomic and easy to grip, courtesy of rubber coating around the side. We personally like the Spawn's extra groove to rest your ring finger; it enables better than average claw grip and is a testimony to the mouse's ergonomics. The product is light and doesn't have the option of adding weights.



The CM Storm Spawn comes with a gold-plated USB plug at the end of a two-metre long cable. There are two customizable buttons on the mouse's left rubber grip, which can be programmed with macros via software downloaded from www.cmstorm.com The mouse has built-in anti drift controls to prevent wayward pointer movements while lifting or dropping the Spawn. The CM Storm Spawn also offers two dedicated buttons below the scroll wheel for on-the-fly DPI changes. However, we find the three predefined

levels – only at 800, 1800 and 3500 DPI – a bit limiting.

Gaming with the Spawn is very good. We experienced absolutely no issues with the claw grip design. After a small learning curve and with enough time, even large hands can adapt to the Spawn. Response time was great, there was no lag while playing games like Crysis 2 and Brink, and on-the-fly DPI tweaking was instantaneous. Movement was fine, the mouse gripped the table surface well and there was no unnecessary skidding. The Omron Micro switches – good for five million clicks – make clicks feel soft, nice and cosy. The Spawn is definitely worth a try, especially for FPS gamers.

Jayesh Shinde

## Specifications

**Weight:** 142g; **Sensor:** 3500 DPI Storm Optical  
**Max. Acceleration:** 20g  
**Polling time:** 1 ms  
**Onboard Memory:** 32KB  
**Customizable Buttons:** 7

## Contact

**Cooler Master**  
**Email:** Sanket\_Naik@coolermaster.com  
**Web site:** www.cmstorm.com  
**Price:** ₹2,999

7.0  
10

Features.....6.5  
Performance.....7.0  
Build Quality .....8.0  
Value for Money ..... 7.0

## Google continues to break language barrier

Google announces 'Instant Pages,' 'Instant' Image Search and 'Instant' Availability in 32 languages

## ICANN approves new top-level domains

This could allow branded domains like .nvidia or generic ones like .automobile

# LG Optimus 2X

## Packs a hidden power punch

**S**traight out of the box, the LG Optimus looks just like any other smartphone out there. The 4.0-inch Gorilla Glass screen has four touch-based keys placed below it: menu, home, return and search. This one comes with Android 2.2, with a promised update for Android 2.3 soon. LG has made the UI look snazzier than before. The widgets look more in line of the HTC Sense, which is kind of the benchmark as far as Android UI's are concerned.

At the heart of the phone is the ARM Cortex A9 dual-core processor, clocking at 1 GHz. Switch on the 2X, and it's the quick boot speed that is the biggest indicator of a powerful phone. The interface loads quite quickly, and the

phone is actually usable without any lags.

Under standard usage scenarios, the Optimus 2X feels just as powerful as any single core 1GHz phone. However, get down to gaming and you'll feel the real difference. The load times are much less, the gameplay is smoother and feels a lot livelier. Download Asphalt 6: Adrenaline HD from the Android Market to get a first-hand experience of the dual-core power.

The camera performance is indeed very good. The 8MP snapper is capable of taking some really lively pictures, even in environments that are only moderately lit.

The brightness level of the



display is excellent. Usually with bright displays, colours go for a toss.

Its battery lasted two days with a mixture of usage scenarios - few calls, lots of IMs, some SMSes and a bit of web browsing.

It's surprising that the Optimus 2X feels like any other Android smartphone powered by a 1GHz single core processor; at least as far as basic usage patterns are considered. However, walk it down the gaming path, and that's when you'll notice that extra power. And that's what makes the real difference.

*Visbal Mathur*

## Specifications

**Screen:** 4.0-inch display, Gorilla Glass, IPS LCD type; **Processor:** ARM Cortex A9 dual core @ 1 GHz, NVIDIA Tegra 2 chipset; **Resolution:** 480x800 pixel; **OS:** Android 2.2; **Storage:** 512 MB RAM, 8 GB built-in storage; **Expansion:** MicroSD card up to 32 GB; **Camera:** 8 MP, 1080p HD video recording, LED flash; **Battery:** 1500 mAh

## Contact

**LG India**  
**Phone:** 1800-1809999  
**Email:** serviceindia@lge.com  
**Price:** ₹26,990

7.5/10

Features ..... 8.0  
Performance ..... 8.0  
Build Quality ..... 7.0  
Value for Money ..... 7.5

## Specifications

**Screen:** 7 inch, Resistive, 480x800; **CPU:** 1GHz ARM Cortex; **RAM:** 512 MB; **Storage:** 8 GB; **Weight:** 400 g; **OS:** Android 2.2; **Ports:** miniHDMI, miniUSB, 3.5mm audio, microSD card slot.

## Contact

**Creative Technology**  
**Email:** vinayendra.singh@compuageindia.com  
**Web site:** http://in.creative.com  
**Price:** ₹17,999

6.0/10

Features ..... 6.0  
Performance ..... 6.0  
Build Quality ..... 7.5  
Value for Money ..... 6.0

# Creative Ziio 7-inch Tablet

## Falls short of expectations

**E**ncased in white plastic, the Ziio has a good-looking metallic sheen on the back. The petite tablet's build quality is nice too, and it weighs just 400 gms. The Ziio also bundles an HDMI port capable of 720p playback. But that's where the excitement ends.

The Creative Ziio has a resistive touch screen and the older Android 2.2 OS. Using the screen with your fingers is difficult with no multi-touch support. What's more, the Ziio doesn't support Android Market, cutting off access to a multitude of apps; the accompanying ZiiStore just isn't good enough. The Ziio does have a thoughtful dock at the bottom - just above the touch-sensitive

menu buttons strip - for quick launch of apps for music, video, photo and web browsing.

Reading is good on the Ziio's bright screen via the bundled ebook app. Audio from its onboard speakers was loud but of poor quality overall. We paired it with a pair of Creative T12 wireless speakers, after much difficulty. The tablet played HD 720p videos smoothly. Its front-facing 0.3 MP camera - specifically for video chats with a bundled app - did okay while clicking photos or shooting videos. Using the tablet outdoors under direct sunlight wasn't great. The tablet's battery lasted just



under two days on a single charge, while browsing the web over Wi-Fi, reading books and listening to music.

The Ziio is priced attractively, has a good processor and sizable 8GB of storage. But overall user experience on the Creative Ziio was okay at best, nothing to blow your mind away.

*Jayesh Shinde*

## Sony unveils 3D laptops

Sony upgrades all-in-one VAIO L Series; now has full HD 3D 24-inch LED touchscreen, a 3D Blu-ray optical drive, PlayStation 3 connectivity, and 3D shutter

## Fastest computer in the world

For the first time since 2004, a supercomputer built in Japan can claim to be the fastest on earth

Bazaar

# HTC Desire S

Truly desirable? Maybe not.

The Desire S is a ₹28,900 phone riddled with contradictions. It's got the most top notch hardware and software combinations available when it comes to single core Androids, packing in the new generation 1GHz Qualcomm Snapdragon MSM 8255 SoC and Android 2.3.3 (Gingerbread) with HTC's Sense UI. But at the same time falters at its core function - being a phone.

At locations with low network availability, the phone seems to have trouble with switching towers to hunt for whichever signal is stronger. While there are no drops when on call at such locations, often you find no network on the phone when it had

been lying idle for a while. Searching for networks and registering manually solves the problem, still it's something we'd rather do without in a phone of this calibre. To add to this the speaker on the Desire S is abysmally soft. So be prepared to be greeted with a string of missed calls if the phone is kept away from you; even the TV is loud enough to drown out the little pipsqueak.

Apart from these flaws, we have good things to report from our tests, but we doubt whether you'd really care after the above revelations. The phone feels quite well built thanks to the aluminium unibody design. With its smooth curves and selective



usage of chrome, its easy on the eyes too. The battery lasts a day with mixed usage of data over 3G and Wi-Fi and about an hour of voice. The camera and screen are decent. To conclude, while the specs sheet reads like the A-list of single core Androids and on paper looks it like the best value proposition, it would probably be better to look at its elder sibling the Incredible S, which is devoid of these flaws.

Siddharth Parwatay

## Specifications

**CPU:** 1 GHz; **Internal phone storage:** 1.1 GB  
**RAM:** 768 MB; **Main Camera:** 5 MP autofocus with LED flash  
**Sensors:** G, Proximity, Light, Compass; **Battery:** 1450 mAh L-ion  
**SoC:** Qualcomm MSM8255  
**Misc:** GPS, Wi-Fi b/g/n

## Contact

PristineNote

**Phone:** 9910821100

**Email:** nitin.pandita@brightpoint.com

**Web site:** www.htc.com/in

**Price:** ₹28,900

6.0/10

Features.....7.0  
Performance.....6.0  
Build Quality .....8.0  
Value for money .....6.0

## Specifications

**Screen:** 13.3-inch, LED-backlit, 1366x768 res; **CPU:** Intel Core i5-2410M 2.3-GHz; **RAM:** 4GB DDR3; **HDD:** 320GB; **GPU:** AMD Radeon HD 6470M (512MB) & Intel HD 3000; **OS:** Windows 7 Home Premium 64-bit

## Contact

Sony India Pvt. Ltd.

**Email:** sonyindia.care@ap.sony.com

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

**Price:** ₹56,990

8.0/10

Features.....8.0  
Performance.....8.0  
Build Quality .....7.0  
Value for Money .....7.5

# Sony VAIO S (VPCSB16FG)

Balances portability and performance

The Sony VAIO S is a premium sleek performance-rich laptop, aimed at the style-conscious. The under 2kg laptop has a dull metal exterior with a fine sandpaper finish. Its keyboard deck is comprised of a single aluminium slab which dips and flexes if pressed heavily. The screen vibrates a bit while typing in a hurry, and it isn't exactly rugged.

In terms of features, the Sony VAIO S is better decked out than any other portable 13-inch notebook at its price. It has a quickfire CPU & GPU combo which elevates

it over most mainstream laptops. All its connectivity ports are situated on the right. There are HDMI and USB 3.0 ports. It also has a fingerprint sensor for biometric protection.

The VAIO S performs well overall. Despite having a spinning 5400-rpm drive, the laptop is extremely quick to boot into Windows 7 - consistently under 30 sec. Our benchmark

scores suggest a better than mid-range performance, overall, given its hardware configuration. Casual gamers will be happy to note the notebook handles games well at medium settings - anything more is a stretch. Typing on the back-lit isolated keys is great, so is the wide, smooth touchpad. Its six-cell battery lasted for 2 hours 20 minutes (on high performance mode) while looping a video. If you switch to the laptop's Stamina mode (onboard graphics), on a conservative battery plan, expect the battery to last more. Overall, a very good laptop for the price.

Jayesh Shinde





## DARPA's \$130 million virtual battle field

DARPA intends to create a virtual battle field to help against cyber attacks

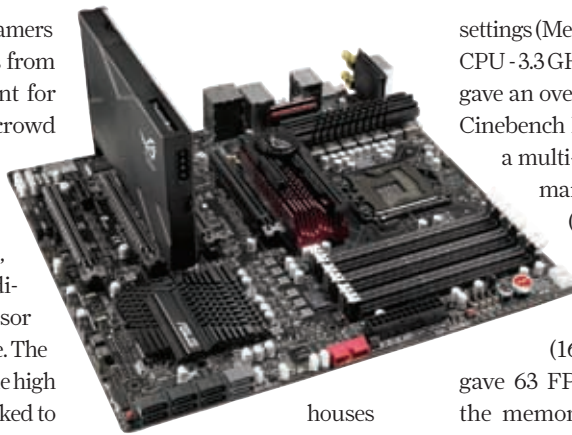
## Microsoft takes on Google Docs

Office 365 is the answer from Microsoft to the challenges from Google Apps and Google Docs

# Asus Rampage III Black Edition

### An overclocker's dream come true

The Republic of Gamers series of boards from ASUS are meant for the enthusiast crowd who will indulge in a lot of overclocking of their high end Core i7 CPUs. In keeping with that tradition, the Rampage III Black Edition can be called the successor to the Rampage III Extreme. The matte-black body houses the high end X58 chipset and is packed to the gills with state of the art components such as solid state caps, intricately designed heat sinks, a whole range of ROG exclusive features (such as ROG Connect - for external overclocking via a laptop or iPad for example), an onboard Bluetooth and Wi-Fi adapter, the Thunderbolt combo card (which



houses Xonar sound component and Bigfoot Killer E2100 networking hardware), etc. Calling this board feature-rich is an understatement. We tested the board with an Intel Core i7 980X processor and an AMD HD6850 card. As expected it aced the tests. On stock

settings (Memory - 1333MHz and CPU - 3.3GHz) PCMark Vantage gave an overall score of 10,300, Cinebench R10 rendering gave a multi-core score of 22,842 marks, Video encoding (100 MB VOB to DIVX) took 22 secs whereas Crysis Warhead (1680x1050, med) gave 63 FPS. We overclocked the memory using the XMP profile 1 (Memory - 2,000MHz) and the board to 4.1 GHz - on air. The system ran fine without any blue screens, giving a 15-percent increase in some benchmarks.

The price of the board is enough to build an entry-level multimedia rig.

*Nimish Sawant*

## Specifications

**Socket:** LGA 1366; **Chipset:** Intel X58 / ICH10R, up to 48 GB DDR3 RAM; **On-board:** Bluetooth 3.0 and WiFi adapter; Thunderbolt LAN/Audio; **Ports:** 2x USB3.0, 7x USB2.0, 2x eSATA

## Contact

**ASUS Technology Pvt. Ltd.**  
**Phone:** 1800-209 0365  
**Email:** reachus@asus.com  
**Website:** www.asus.in  
**Price:** ₹39,500

8.5/10

Features ..... 9.0  
Performance ..... 8.5  
Build Quality ..... 9.0  
Value for Money ..... 6.5

# Acer Liquid Mini E310

### Affordable FroYo phone; not for camera and audio junkies

## Specifications

**Bands:** GSM 850 / 900 / 1800 / 1900 and HSDPA 900 / 2100; **OS:** Android 2.2; **Display size:** 3.2-inches; **Resolution:** 340x480 pixels; **Camera:** 5 MP; **Battery:** 1300 mAh.

## Contact

**Acer India Pvt Ltd**  
**Phone:** 91 80 3940 8700  
**Email:** ailenquiries@acer.co.in  
**Web site:** www.acer.co.in  
**Price:** ₹11,990

6.0/10

Features ..... 7.0  
Performance ..... 5.5  
Build Quality ..... 5.5  
Value for Money ..... 7.5

Acer Liquid Mini E310 is a younger cousin of the higher end Acer Liquid.

Housing the Android 2.2 FroYo OS, it's upgradeable to 2.3, but we wonder how smooth the user interface would be with 600 MHz of processing power. Aesthetics are very similar to the Acer Liquid. We didn't like the cheap plastic cover and absence of flash above the 5 MP camera. As with the older Liquid phones, the Mini also has an overlaid Breeze UI

with slight modifications. The history module on the left hand side has a coverflow interface which continues on the right hand side with the media.

Call quality across all test zones was quite good with clear voice rendition and this was true of the handsfree as well. User interface is quite snappy. It comes with integrated social networking apps such as Facebook and Social Jogger - which integrates your Twitter and Facebook updates. The notification bar also has mul-

tiple home screens popping out from each icon, which is quite a good feature to have. The 5 MP camera is great for outdoor shots and has quite a few customisation options. Indoor shots are noisy. Video shooting is not good at all as there is prominent framing and visible changing of colour cast as you move your phone's camera. Sound quality is OK, but the volume levels are not that impressive. The bundled earphones provide no sound isolation, so you are better off not listening to music in traffic.

Acer Liquid Mini E310 is an affordable phone for its features and performance and ideal for someone looking at a feature rich phone.

*Nimish Sawant*



**Smartphones for ₹20-35k**Smartphones between ₹20,000 and ₹35,000:  
Best Deals URL: <http://bit.ly/kHlbfZ>**QWERTY phones**The goodness of the keypad remains  
URL: <http://bit.ly/mjp1Gk>

# Online complaint redressal

## Turning to problem resolution online

Kapil Rustagi

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

Jessica bought a brand new notebook from her first income. But her excitement was dulled by her laptop's constant hanging problem. Visiting service centres and emailing the company was futile. As last resort, she posted her complaint on a popular social network. Like-minded complainants raised similar issues about the product. Within two days, the company's head office deputed a senior officer to resolve her complaint.

Besides MNCs, even government instrumentalities like Delhi Police, Municipal Corporation of Delhi and many other

organisations have their pages on networking web sites to directly reach out to the public. This platform keeps consumers aware about scams and product safety issues besides other things. Supplement information such as upcoming events, campaigns, alerts and news about the product and/or brand can be of immense help in taking informed decisions.

Successful social media interactions between companies/brands and consumers translate into profitable propositions for both, the consumer and the brand. For individuals, however, social

media is more about expression than connection. Likewise, the consumer is in a better position to raise his voice against the multinationals. Consumer's one online post can shake a company's brand reputation and credibility in a few minutes. If not cause damage, it can certainly raise doubts in the minds of many prospective consumers. The online complaint redressal system is cheap and the ability to post on it twice, thrice and many more times makes the forum even more potent. Companies are similarly aware of the potential of networking tools; therefore, they can't risk being casual about it.

Today's consumer is interactive, vocal and expects a responsive brand to listen to him. The Ministry of Consumer Affairs should take heed to ensure happier, satisfied customers. **d**

### COMPLAINTS RECEIVED

#### Dysfunctional Micromax X600 buttons since past 3 months

**Question:** I purchased a Micromax X600 Gravity dual SIM mobile on 20th Oct 2010. After a few months, the red button of the mobile stopped working. I handed over the mobile to Micro Care Service Centre in Doltanganj on 14th April 2011. Even after 45 days, neither has my mobile been repaired nor did they give me another mobile.

**Contacted By:** Ragini Mishra

#### Answer By Consumermate:

Dear Consumer,  
We're in receipt of numerous complaints regarding the same company products. The company in no circumstances can hold you waiting like this for your product duly repaired. If they don't respond in a week, write them a registered letter in the shape of a legal demand notice containing all the problems in detail. You can hold responsible the company and the service centre for misappropriating your property. You can warn them about your filing a police complaint for criminally misappropriating your property/product. In case, they don't come up with a solution, go ahead with filing consumer complaints in the district forum. I hope at the stage of notice itself they will sort out things. Keep all the communication handy for all the future actions.



### We can help!

If you're facing a problem with your purchase, write to us at [help@consumermate.com](mailto:help@consumermate.com)

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[sales@indiaantivirus.com](mailto:sales@indiaantivirus.com)  
Biz Secure Labs Pvt. Ltd.

**OkCon 11 opens in Berlin**

The Open Knowledge foundation kicks off their annual conference in Berlin with focus on innovation and open knowledge sharing

**Japs invent capsule endoscope**

Japanese researchers invent a capsule endoscope to navigate through the anus, it is codenamed as mermaid

# Shoot in high definition

## Agent 001 gets some vacation time and heads off camcorder hunting

Agent 001

agent001@thinkdigit.com

I finally got some much needed leave, and figured I'd head off into the hills for a vacation. Naturally, a camcorder was first on my list of much needed gadgets to carry for the trip.

A little bit of research revealed that consumable media-based camcorders are essentially fossils. The camcorder world revolves around hard drives and flash memory, so do not buy a DVD, mini-DV or tape-based camcorder today – the prices of media have risen and moreover these consumables have limited rewrite cycles. Additionally, these media cannot handle HD resolution, owing to the extra bandwidth required due to the much higher bitrates.

1080i video camcorders are not very expensive presently, and while they do command a premium over non-HD camcorders, if you're looking to buy something that won't need upgrading, this is definitely the way to go. With HDTVs also becoming cheaper and widespread, camcorders supporting direct playback on these displays, and HD codecs becoming mainstream, the ecosystem to record view and archive HD videos is in place.

Mind you, these days, camcorders are facing peril from digital SLR (dSLR) cameras. These cameras, with their relatively gargantuan sensors are capable of 1080p video capture, and at much higher detail, with a better dynamic range and less noise than compact camcorders. However, a dSLR is bulkier, typically doesn't have any in-built storage (remember these videos are space hogs), and more importantly, no dSLR comes with a 30x zoom. To use a dSLR as a camcorder, you'll have to

invest a lot more in lenses, and telephoto lenses are typically expensive. Each system has its own set of pros and demerits, but I'd say if you've bought something like a Nikon D5100 or a Canon EOS 600D, there's very little reason to buy a dedicated camcorder for video unless you consistently need a zoom of more than 10x.



Sony-HDR-XR160

I decided to look at hard drive based system. Flash-based camcorders capable of recording 1080i content are limited. Roaming around Croma, Reliance Digital and E-Zone stores, one thing was clear Sony dominates shelves in these stores. Mind you, this isn't necessarily indicative of Sony being a superior brand, but they do get a lot of shelf space – evidently flooding the market is a good way to ensure you're popular. The adage "out of sight, out of mind" comes to mind.

The staff at such store counters are generally helpful, but specific queries are likely to go unanswered. When I asked them about JVC camcorders, they said JVC isn't officially available. Similarly, queries about Samsung yielded replies like "Their camcorders are not very good, and people don't ask for them, you're the




first person to enquire about Samsung". Similarly, one guy from Croma kept telling me that these camcorders recorded full HD, when in fact they record 1080i and not

1080p. When I asked him whether full HD meant 1080p or 1080i, he couldn't respond and called a senior guy, who asked me whether I wanted a full HD camcorder or a regular one.

Canon has flash-based 1080i camcorders, but I found them a bit expensive. The Canon Legria HF M300 is a nice looking camcorder capable of 1080i recording, but priced at ₹43,000. It comes with a flash slot and no in-built storage,

which seems a little silly given that a 32GB card will store only around three hours of video – not good if you're going on vacation, or need to shoot without access to a computer for backup. I visited a Sony World and came across a couple of options.

The HDR-XR160E, in

particular, caught my eye. According to the owner, this model is a new arrival, and has a larger hard drive (160 GB) over the previous model that came with a 120GB hard drive. What I really liked was the 30x optical zoom. We purchased a Sony HD camcorder for our video reviews section two years back and that had an optical zoom of only 10x, which worked fine for in-house shooting, but won't help if you want to use it outdoors. Sony World was selling the HDR-XR160E for ₹39,990 while Croma had the same model for ₹39,499. There was an EMI option available, where I could pay in three easy instalments of ₹13,499 every month. Quickly calculating, I figured I'd only spend 998 bucks more over three months. I went for it and picked up a slick-looking case for another 650 bucks. Back to packing now... HD camcorder – check! 



## Winklewoss twins end FB attack

After the \$65 million settlement, the Winklewoss twins decided not to appeal against Facebook founder Mark Zuckerberg in the Supreme Court

## Google records a billion users

Google became the first web site ever to hit a billion unique views this month. What's surprising is that most of us thought that was normal for them

Agent 001

## Replacement for old speakers

Hi Agent001, I'm a very old Digit fan and I need your help in choosing a speaker. My previous Altec Lansing MX-5021 2.1 speakers are dead after three years of service. Now the company is saying that they cannot repair it, saying "such hi-end speakers have short life span. Three years of usage was enough". I tried to get it repaired at another place but got no relief. Learning from this I've also reduced my budget to only 6K.

So, now I'm searching for a good 5.1 speaker under a budget of ₹6,000. I'm thinking of Creative T6100 or T6200 or any other good brand in my budget. Please suggest a good 5.1 within my budget with same quality as previous speakers or better. Also, looking at my previous experience it should have a better life span or at least it should be repairable.

Rituraj Burman

🕒 Creative T6100 series is a good set of 5.1 speakers. It's available within your budget. It comes with a one-year warranty and you



can get more information regarding maintenance by contacting your local dealer. You can also check this link - (<http://goo.gl/OqZIR>) for a list of service centres of Creative products.

## Business phone required within ₹15-18k

I'm a business user and would like to buy a new phone. Please give me a list of cellphones with a QWERTY keypad and a front-facing camera. My budget is around ₹15,000-18,000.

Nipen Karekar

🕒 As you're looking for a business phone with QWERTY keypad and front-facing camera, we've listed a few smartphones you might consider buying:



- Nokia C6 around ₹13,500.
- Samsung Corby Pro at ₹10,000
- Nokia E6 at ₹18,000

## 3G modem, .mkv support on Acer Iconia?

I'm planning to buy the Acer Iconia a500 tablet. Basically I'll use it to download and watch movies on the tab itself. I have movies in 720p .mkv format. Specifications are in a text file attached. Most of my movies are in a similar range. Some are high too (around 900kbps). Would it play on the tablet? If not, is there a possibility of support for these videos in the future. I've read on forums that Acer will give an update to Iconia a500 which will improve video playback on the device. It would be really appreciated if you give the details of your review of the tablet (just the video playback part, a little detail would be quite helpful for me to analyze). I'd like to get an idea about the video playback.

I have one more question... Can I use a normal unlocked 3G modem with the device (like Huawei modem with any gsm sim)? And again, is there any possibility of it in future.

Abhishek Kumar

🕒 The Acer Iconia Tab A500 doesn't support .mkv format. You'll most likely have to convert it to the formats supported by the tablet such as MP4, XVID, etc. We reviewed the tablet - the Honeycomb OS version - some days back and faced issues playing back HD video files we had in the .mkv format and even after converting them to the formats supported by Acer Iconia Tab, we couldn't play them back. It can play

720p videos. The best bet for you would be to convert your .mkv videos to the formats supported by A500 and see them being played back when you go to purchase the tablet, just to be on the safer side. The model that we tested was a Wi-Fi only model and the site doesn't have any information on a 3G model yet.

You can check out our in-depth review on the A500 here: <http://goo.gl/Y6ZyS>, and in this issue on page 98.

## State-of-the-art budget PC

Dear Sir, I'm a good fan of Digit and have been reading it since the past 3-4yrs. I always read through the technical suggestions provided in the columns which are quite helpful for newbies.

Recently I planned to purchase a high-end computer desktop system for both, professional (developer java/j2ee) and personal use. I searched for AMD Phenom II X6 1055T or above within budget and couldn't find a perfectly compatible motherboard and RAM. I'm looking for a suggestion from you. Please do the needful. Thanks,

Ravi.

🕒 Since you haven't mentioned your budget, we suggest the following motherboards for your processor across various budgets. Do have a look at the features and the pricing before buying one.

- Asus M4A78LT M LE - ₹2700
- Gigabyte 785GMT-US2H - ₹3400
- Gigabyte 880GM-UD2H - ₹3900
- Gigabyte 880GMA - ₹4500
- Asus M4A88T-M-LE - ₹4400
- MSI 890GXM - ₹6500

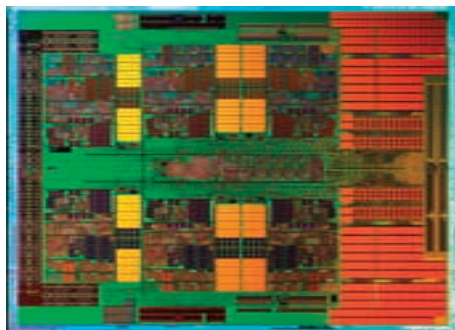
For your work, we feel 4GB DDR3 RAM is enough. You can get Corsair Vengeance 4GB RAM at around ₹2700. 📺



# digit KILLER RIGS

everything you will ever need to build your own PC. whatever your budget.

## PRIMARY COMPONENTS



### PROCESSOR

- AMD Athlon II X3 440 / ₹3,200
- AMD Athlon II X4 640 / ₹4,600
- AMD Phenom II X4 955BE / ₹5,900
- Intel Core i7 2500K / ₹11,500
- Intel Core i7 2600K / ₹16,200



### HARD DRIVE

- Seagate 500GB 7200.12 / ₹1,700
- 500GB WD Caviar Blue / ₹1,700
- WD Caviar Black 1TB / ₹4,400
- Seagate Barracuda 2 TB / ₹2,600
- Seagate Barracuda XT 3TB / ₹14,500

### MOTHERBOARD

- ASUS M4A78LT-M LE / ₹2,600
- Gigabyte GA-880GA-UD2H / ₹4,300
- Gigabyte GA-880GA-UD3H / ₹5,500
- ASUS P8P67 Pro / ₹12,799
- Asus Sabertooth P67 B3 / ₹15,600



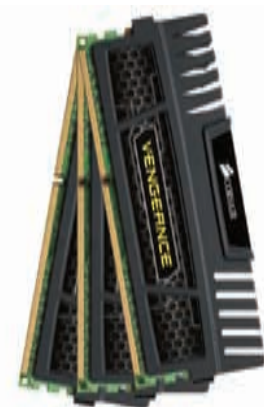
### GRAPHICS CARD

- None
- Sapphire HD 5770 / ₹7,500
- Sapphire Radeon HD 6850 / ₹9,700
- MSI N570 GTX TwinFroze II / ₹20,000
- 2 x ZOTAC GeForce GTX 570 / ₹40,600



### MONITOR

- ViewSonic VA1931wma / ₹5,375
- Dell ST2220M / ₹8,100
- Samsung P2350 / ₹10,800
- BenQ G2420HD / ₹12,900
- Dell Ultrasharp U2311H / ₹14,000



### RAM

- Corsair 2GB DDR3 1333MHz / ₹1,045
- Corsair 2x2GB DDR3 1333 MHz / ₹2,100
- Corsair Vengeance 4GB 1600MHz / ₹2,600
- Corsair Vengeance 4GB 1600MHz / ₹2,600
- 2x4GB Corsair Vengeance 1600 MHz / ₹5,200

■ Basic rig = ₹18,360

■ High-end Multimedia / Gaming rig = ₹48,805

■ Ultra high-end PC / Gaming rig = ₹1,42,995

■ Multimedia cum gaming rig = ₹36,100

■ High-end gaming PC = ₹79,419

## SECONDARY COMPONENTS

### CABINET

- Zebronic Bijili w/o SMPS / ₹1,100
- CM Elite 310 / ₹1,500
- CM Elite 430 / ₹2,620
- NZXT Lexa S Mid-Tower / ₹4,695
- Cooler Master HAF912 / ₹5,800



### POWER SUPPLY

- VIP 350 Watts / ₹800
- Corsair CX400 / ₹2,800
- Cooler Master eXtreme 500W / ₹2,910
- Cooler Master HX450W / ₹3,980
- Cooler Master Silent Pro M 850W / ₹8,825



### SPEAKER

- Logitech Z313 / ₹1,000
- Altec Lansing V2621 / ₹1,960
- Altec Lansing V2621 / ₹1,960
- Creative Inspire T6100 / ₹3,795
- Creative Inspire T6100 / ₹3,795



### MOUSE

- Microsoft P58 / ₹375
- Microsoft P58 / ₹375
- Logitech MX518 / ₹1,200
- Logitech MX518 / ₹1,200
- Razer Death Adder / ₹2,135



### OPTICAL DRIVE

- LG 22x SATA DVD Writer / ₹900
- LG 22x SATA DVD Writer / ₹900
- LG 22x SATA DVD Writer / ₹950
- LG 22x SATA DVD Writer / ₹950
- LG 10x Blu ray RW / ₹9,400



### SOUND CARD

- None
- None
- None
- None
- ASUS Xonar DX 7.1 / ₹4,740



### KEYBOARD

- Logitech K100 / ₹265
- Logitech K100 / ₹265
- Logitech K100 / ₹265
- Microsoft Comfort Curve 2000 / ₹1,000
- Razer Arctosa Gaming Keyboard / ₹2,200



## MISCELLANEOUS

### HD MEDIA PLAYERS

- ASUS O!Play Mini / ₹4,015
- WD Live TV Hub / ₹11,500
- Iomega ScreenPlay 1TB Director / ₹10,200



### GAMING HEADSETS

- Platronics Gamecon 367 / ₹1,700
- Alienware TactX Headset / ₹3,500
- Corsair HS1 / ₹4,999



### PORTABLE DRIVES

- Seagate Expansion Pocket 250GB / ₹1,950
- WD Passport 500GB / ₹2,950
- Iomega 3Go 1 TB USB 3.0 drive / ₹6,500



### MOUSEPAD

- Razer Goliathus / ₹450
- Cooler Master Storm CS-M / ₹850
- Razer Goliathus Fraggd Control Edition / ₹999



### GAMING CONSOLES

- Sony PlayStation3 (320GB) with Move / ₹23,490
- Xbox 360 (250GB) with Kinect / ₹31,980
- Nintendo Wii Black / ₹18,990



### POWER PROTECTION

- APC (BR600CI-IN) / ₹2,165
- Numeric SB1000 / ₹4,700
- APC (BR-1000IN) / ₹5,500





## OCZ RevoDrive 3 X2

Showcased at Computex this year, it's a PCIe x4 SSD having 4 SandForce SF2200 controllers and RAID 0 striping giving speeds of 1.5GB/s (read) and 1.2GB/s (write)

## Android apps on Nokia N9

Alien Dalvik, a high performance Android emulator, will be developed for MeeGo and will enable the Nokia N9 to run non-ported, unmodified Android applications

Street smart

# SPEND SMART

Updated prices of Top Cameras, Laptops, HDTVs, Smartphones and LCD Monitors from Digit Test Labs



## CAMERAS

Camera	Price (₹)	Sensor Type	Resolution (MP)	Shutter Speed (secs)	ISO Range	Movie Resolution (pixels)
Fujifilm FinePix JV200	5,695	CCD	14	1/1400 – 8	100 – 1600	1280 x 720p
Canon IXUS 130 IS	9,695	CCD	14	1/1500 – 15	80 – 1600	1280 x 720p
Nikon P7000	24,690	1/1.7" Type CCD	10	1/2000 to 60	100 – 6400	1280 x 720p
Olympus Pen EPL-1	25,789	Live MOS	12.3	1/2000 to 60	100 – 3200	1280 x 720p
Canon S95	26,185	1/1.7" Type CCD	10	1/1600 to 15	80 – 3200	1280 x 720p
Canon G12	31,085	1/1.7" Type CCD	10	1/4000 to 15	80 – 3200	1280 x 720p
Sony NEX 5	32,779	Exmor APS HD CMOS Sensor	14	1/4000 to 30	200 – 12800	1920 x 1080i
Canon 60D	63,335	CMOS	18	1/8000 to 30	100 – 3200	1920 x 1080p
Nikon D7000 (body)	64,450	CMOS	16	1/8000 to 30	100 – 6400	1920 x 1080p
Canon 1D Mark IV (body)	2,59,995	CMOS	16	1/8000 to 30	100 – 12800	1920 x 1080p

## LAPTOPS



Laptops	Price (₹)	Processor	Screen Size	HDD (GB)	Installed OS	Movie Resolution (pixels)
HP Pavillion G6 1035tx	39,990	Intel Core i5-480M	15.6-inches	500	Windows 7 Home Basic	1920 x 1080p
Apple MacBook Air 13-inch (128GB)	78,900	Intel Core 2 Duo L9400	13.3-inches	128	Mac OSX	1920 x 1080p
Lenovo IdeaPad G565	22,690	AMD Phenom II N850	15.6-inches	500	Windows 7 Home Basic	1920 x 1080i
ASUS G53Jw	97,860	Intel Core i7- 740QM	15.6-inches	500	Windows 7 Ultimate 64-bit	1280 x 720p
Alienware M15x	96,215	Intel Core i7 940XM	15.6-inches	500	Windows 7 Ultimate 64-bit	1280 x 720p
HP Envy 3D i7	84,000	Intel Core i5-480M	17-inches	640	Windows 7 Professional 64-bit	1280 x 720p
Acer Aspire 4820T (4820TG)	42,320	Intel Core i3-370M	14-inches	500	Windows 7 Basic	1280 x 720p
Acer 5742G (5742)	29,030	Intel Core i3-380M	15.6-inches	500	Windows 7 Basic	1280 x 720p
ASUS X52J	35,500	Intel Core i3-350M	15.6-inches	500	Windows 7 Basic	1280 x 720p
Sony Vaio S	54,999	Intel Core i5-2410M	13-inches	320	Windows 7 Home Premium	1920 x 1080p

## 1 Billion visits a month

According to comScore, Google is the first web site to hit 1 billion visitors a month, spending 200 billion minutes collectively. Wow!

## Opera Founder Quits

Opera founder Jon S. von Tetzchner has resigned from the company citing difference of opinion from the board

Price watch



# SMARTPHONES

Smartphone	Price (₹)	Operating System	Processor	Camera (MP)	Screen size	Resolution
Motorola Quench XT5	13,629	Android 2.1	600 MHz	5	3.2-inches	320 x 480
Samsung Wave II	15,385	bada OS 1.2	1 GHz	5	3.7-inches	480 x 800
BlackBerry Bold 3	22,000	BlackBerry OS 6	624 MHz	5	2.44-inches	480 x 360
Dell Venue Pro	23,999	Windows Phone 7	1 GHz	5	4.1-inches	480 x 800
Sony Ericsson Xperia Arc	27,930	Android 2.3	1 GHz	8	4.2-inches	480 x 854
HTC Incredible S	29,790	Android 2.3	1 GHz	8	4.0-inches	480 x 800

# LCD MONITORS



LCD Monitor	Price (₹)	Display Size	VGA / DVI / HDMI ports	Spyder3Elite Contrast Ratio	ISO Range	Movie Resolution (pixels)
AOC e2043Fsk	6,200	20-inches	Y / N / N	601.31:1	100 – 6400	1920 x 1080p
Acer G195HQ	6,250	18.5-inches	Y / Y / N	723.45:1	100 – 3200	1920 x 1080p
ViewSonic VA2431wm	10,500	23.6-inches	Y / Y / N	642.63:1	200 – 12800	1920 x 1080i
BenQ VW2420H	17,000	24-inches	Y / Y / Y	933.03:1	80 – 3200	1280 x 720p
Alienware OptX AW2210	17,500	21.5-inches	N / Y / Y	538.32:1	80 – 3200	1280 x 720p
BenQ M2700HD	23,500	27-inches	Y / Y / Y	456.71:1	100 – 6400	1280 x 720p



# HDTVs

HDTV	Price (₹)	Screen size	HDMI Ports	Spyder3Elite Contrast Ratio	ISO Range	Movie Resolution (pixels)
LG 42LV3730	68,490	42-inches	3	346.1:1	100 – 6400	1920 x 1080p
Hitachi LE46T05A	89,900	46-inches	3	569.4:1	100 – 3200	1920 x 1080p
Sony KDL-46EX720	1,03,900	46-inches	4	355.5:1	200 – 12800	1920 x 1080i
Sharp Aquos LE820	1,19,000	40-inches	4	1096.7:1	80 – 3200	1280 x 720p
Samsung UA46D6600WR	1,39,990	46-inches	4	300:01:00	80 – 3200	1280 x 720p
Vu LED-55T28R	1,40,000	55-inches	4	473.6:1	100 – 6400	1280 x 720p



SKOAR!

# E3 2011: Games of the Show

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

**E**3 2011 was filled with great games, but which ones stood out among the crowd as the best? Which games had people really talking? Some of them were expected but a few took us a bit by surprise.

The first game that stood out to me is XCOM (Xbox 360, PS3, PC) from 2K Games. It may not be the game everyone else is talking about but when it releases March 6, 2012 it is almost certainly going to be a huge hit. Developed by 2K's Marin studio it is a re-imagining of the classic XCOM universe, this time with first-person shooter gameplay and role playing elements. You take the role of William Carter, an FBI operative, as he tries to investigate and uncover the mystery of an unknown alien threat. As a throwback to the original tactical strategy games, the story will not play out in a linear or straight-forward manner. You have a base of operation to work from and the freedom to choose which missions to take and in which order. Additionally, you have access to several other field operatives from which to build your team, all of which can earn upgrades and be customized by the player. In each mission you take two of them with you and it is in your benefit to build a balanced team. During the mission you can enter tactical mode to issue commands to your teammates. Another aspect of the gameplay that makes it unique is the ability to capture alien technology. You are investigating the aliens, after all, not just combating them. Often

when an enemy is defeated they will leave bits of their advanced technology behind. One such example was shown during the E3 demo, as an advanced gun turret was left behind. The player then has the option to either bring it back to base (which results in weapon upgrades being discovered) or redeploying it as a weapon in the current mission. The latter option results in devastating damage and immediate results while the former provides a long lasting benefit. If you redeploy it you cannot bring it back with you for research which means the game can be played in multiple ways depending on what each player prefers.

Perhaps more than for its gameplay XCOM stands out for its style and art direction, much like the original Bioshock did when it released. Set in the United States in 1962, the game takes place between the carefree 1950s and the upcoming social tensions of the 1960s. The entire game is designed to look like an old detective film. The setting isn't cleaned up and politically correct for modern audiences. Characters have bravado and arrogance, and it is a time when people still smoked in their offices and sipped whiskey during the afternoon. It's rough, gritty, and different from most games currently available. Combined with the storyline centered on an unknown (and secret to the general public) alien threat, the best way to

describe it is X-Files meets Mad Men.

Coming as much less of a surprise, The Elder Scrolls V: Skyrim (360, PS3, PC) was one of the most impressive games on display and for those lucky enough to see it, one of the most talked about. With executive producer Todd Howard at the controls, it was obvious from the opening of the demo that this game would be infinitely grander than Oblivion ever was. It is clear that Bethesda took to heart everything gamers complained about. Character models are easily recognized as being hugely improved with much better facial details. For those who like to play in third-person mode, the main character's animation has been re-worked and he now feels attached to the surface rather than appearing to float across it. They have removed stats like athletics and acrobatics so that you can no longer practice jumping so much that you can jump over a mountain. Even the basic details like the menu system have been redesigned for convenience. The new menu system is quick, unobtrusive, and contains full 3D animated renderings of every item in the game.

The demo opens in the mountains, covered in snow, overlooking a small village. That snow wasn't placed there by an artist. Instead the entire weather system is dynamic and snow builds in high elevations during storms and will dissipate with time. As we wander in to the town we are told that each job can be performed by the player, and the local economy can be impacted by things you do. If you destroy







the mill in a logging town, for example, their economy will grind to a halt. The battle system has been improved and now any weapon can be wielded in either hand, including gloves used for magic. That means it will be up to you if you wish to use a sword and shield, a sword with an axe, or any other combination you like. If you choose to wield magical gloves in both hands your spells will become more powerful. After exploring the town we are shown a cave system, which should no longer feel pointless and derivative as most of them have now been designed by hand rather than randomly generated as they were in Oblivion. Upon exiting the cave we are met with what are sure to be the stars of Skyrim – dragons. They are a site to behold, with AI that fully controls their actions. When they swoop at you or crash to the ground it isn't because they were scripted to do so which means every epic battle will be unique as you run for cover and protection or try to mount the dragon's head for a brutal attack. If the entire 300+ hour game is as impressive as this all-too-brief 30 minutes Bethesda may have created one of the best role-playing games of all-time.

Several other games rounded out the highlights of the show. Mass Effect 3 (360, PS3, PC) has increased in scale, with larger battlefields and a story that now brings the battle with the Reapers to earth. Interesting changes include the ability to use mechanized armor and branching upgrades for your character's special abilities. Bioshock: Infinite (360, PS3, PC) was also gaining quite a bit of attention. Having the city floating in the sky has opened an entirely new world of gameplay for the developers, with areas connected by rail in the sky that you can connect to and move

at a blistering pace. Your new sidekick also provides the unique ability to open rifts and connect you to other worlds – at E3 one of those rifts took you to 1983 and the opening of Star Wars: Return of the Jedi. Moments like these are sure to keep things interesting.

Rounding out the top games of the show are Battlefield 3 and Tomb Raider. For fans of the series, the newest installment of Battlefield is sure to impress. My hands-on multiplayer demo of the game suggests better graphics and tighter gameplay mechanics than ever before. The newest in the Tomb Raider franchise takes the series down a darker path by telling the origin story of Lara Croft. Role-playing elements flesh out the game and help bring new life to the series.

### Surprise of the Show

The biggest surprise of the show for me comes from Nexon. I don't normally expect much from free to play games but Vindictus and Dragon Nest may have finally won me over. Vindictus is a third-person fighting game with role-playing elements. It was fun, fast paced, and played well. Dragon Nest is a more of a massively multiplayer action RPG. I was able to enjoy several rounds of player versus player combat and found it hard to stop smiling the entire time. There is just something inherently fun about playing as a cute sorceress and beating up a menacing warrior. When the game launches there will be four classes to choose from but you can expect more to be added later. Neither game is available worldwide yet but they are working to introduce them as quickly as possible. Clearly the free to play delivery system is maturing and thanks to Nexon, has finally reached a point where even those who consider themselves hardcore gamers must take a serious look.

### Best New Hardware

While many members of the media went in to the show looking forward to Nintendo's Wii replacement, it was Sony's

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Chennai - 044- 4216 8561, Dehradun - 0135- 324 4481,  
Guwahati - 094357 31463, Goa - 094036 63304, Hubli -  
0836- 425 7375, Haryana / Himachal - 87500 76813, Indore -  
0731- 404 2509, Jaipur - 0141- 313 0340, Kolkata - 098301  
13980, New Delhi - 8860080580, Lucknow - 0522- 400 5840,  
Ludhiana - 0161 - 441 2099, Nagpur - 0712-325 3811, Nashik -  
095526 04485, Pune - 093723 37752, Patna - 0612- 326  
0947, Raipur - 0771- 329 3674, Ranchi - 0651- 324 4199,  
Secunderabad - 040- 2789 4847.





SKOAR!

PlayStation Vita that really impressed. The graphical power of the handheld is nearly approaching that of the PlayStation 3 which provides for games that look absolutely outstanding. Uncharted looks especially impressive. The system is also loaded with technology, such as its multi-touch OLED display, multi-touch rear surface, motion sensors, front and rear cameras, as well as Wi-Fi and 3G connectivity. Some games will also feature full integration and cross-play with PlayStation 3. In the upcoming dungeon crawler *Ruin* you can play while on-the-go on the PS Vita and then continue when you get home on the PlayStation 3. That is reminiscent of the kind of connectivity Nintendo plans for their new console's controller, but with the Vita you get a full gaming system while on the go. Sony's pricing for the handheld system is also extremely aggressive.

### Least Surprising Announcement

The least surprising announcement of E3 2011 comes by way of Microsoft in the form of the dual debut of *Halo 4* and *Halo: Combat Evolved Anniversary*. *Halo* is the star in the Xbox lineup and despite the departure of Bungie there was no way Microsoft would go more than 2 years without a new game starring the Master Chief. *Halo 4* was shown only as a teaser trailer and was billed as being the first in a new trilogy for the Xbox 360. Without Bungie behind the game it will be interesting to see what changes take place in the franchise.

A high definition remake of the original

*Halo* has also been long rumored and Microsoft made it official during their E3 press conference. Rather than completely redeveloping the game, it will basically be a new graphical engine running atop the original game's code. That means it will play exactly the same as the original game did, with the same gameplay balance and physics. For longtime fans of the game this was a huge relief. Many of the original *Halo*'s multiplayer maps will also be remade, but will be released separately for play with *Halo: Reach* as Microsoft doesn't seem to want to segregate their online user base.


### Disappointment of the Show

Nintendo's Wii U stands out as the disappointment of the show. The new controller is an interesting take on things, housing its own screen and battery pack and despite that feeling relatively comfortable and lightweight. We actually are quite excited to see how it will be used by developers as it has the potential (if correctly utilized) to innovate gaming in much the same way the original Wii did. The unfortunate aspect is just how early in development all of it was – the whole thing came off as rushed in an effort by Nintendo to get their console in the public eye before either of their competitors do (expect PlayStation 4 and Next Xbox at next year's show).

The result of this hasty debut was a limited number of systems on the show floor, with lengthy lines required to even try the system if you were not a member of the media. The design of the console is also not finalized, with no specific announcements regarding system power, price, or appearance. Most importantly though was the complete lack of any real software to play. Nintendo had a handful of demos to showcase the type of things that could be done, but nothing was playable that resembled a real game.

### Final Words

The lasting impression I came away with from this year's show was a heightened desire for control from developers. For example, 2K Games entire booth was closed off to the public. Without an appointment the only things you could see were a controlled demo of *The Darkness II* and *Duke Nukem Forever*'s multiplayer mode. Even with an appointment games like *Bioshock: Infinite* and *XCOM* were only shown in a controlled fashion with developers running through demos. No photography or video recording of any kind was allowed. At Electronic Arts it was much the same, with games like *Mass Effect 3* and *Star Wars: The Old Republic* only being shown behind closed doors in developer demos. *The Elder Scrolls V: Skyrim* from Bethesda was shown in much the same way.

Developers are doing this because they realize the potentially devastating effects negative publicity can have on a game that is still very early in development. While the press at large has always had the awareness to overlook things like bugs in preview builds of games, E3 is open to the industry in general. With the proliferation of blogs and social networking anyone involved in the industry, such as someone in retail, can quickly spread negative impressions of a game. These closed door demos are the developers' way of controlling not only which specific individuals can see their games, but also exactly what they can see. They can avoid showing areas or doing things that would result in the game crashing. It is completely understandable but also frustrating for those attending the show as it goes against much of the reason E3 exists; for the industry to get an early chance to play upcoming games. Gone is the show floor filled with stations to play games, instead mostly replaced with private meeting areas. 





## Toyota smart charging stations

Toyota has introduced two models of its charging station called G-Station for EV's and Hybrids

## Less cookies for the Dutch

The Dutch Parliament passed a law that requires a web site to take permission from the visitor before storing a cookie on their device

Community

Head over to [www.thinkdigit.com/forum](http://www.thinkdigit.com/forum), for some of the best discussions, buying advice, and user reviews. Of course, you will meet like minded (and not so like-minded) geeks, leading to some of the most constructive arguments you'll ever have.

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## Digit OS

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In the June 2011 issue of Digit, we had included the first version of Digit OS on the DVD. It's a customised flavour of Ubuntu 11.04, that reflects the identity of our enthusiastic and passionate community of open source promoters and adopters. Right from the time you login to your Digit OS-powered system, you'll experience Digit. It includes customised icons, buttons and has a specially designed background. With active support from you, we look forward to nurturing it into a community-driven project and support it in every possible way we can, to keep the open source spirit alive. Do try out Digit OS on your system today. All you need to do is put the June 2011 DVD and boot into it. It has open source productivity suites, a media player and popular browsers pre-installed on it. So go ahead, adopt the free and absolutely legal solution, and give us your feedback. Don't forget to share Digit DVDs with your friends and colleagues and build a new community of open source enthusiasts. If you can contribute more tools and products as innovative as Digit OS for the community, we'd love to hear from you!

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**2 Pallav Ahooja**  
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Praneet Agarwal  
Vikram Pratap

### Lucky Draw Winners

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Ashish Kapoor  
Kshitish Sahoo  
Sri Harsha Madineni  
Vipin Kumar



# DIRT 3™

Abhinav 'Tayschrenn' Lal  
readersletters@thinkdigit.com

**"C**odemasters took *Dirt 2*, a high perfect game, and made it better." Here's a detailed look at what makes *Dirt 3* the best rally-based racing simulation since *Dirt 2*.

Beautiful yet realistic, hardcore yet playable, there isn't an adjective that you can use for *Dirt 3* that hasn't already been used for *Dirt 2*, except for perhaps, 'complete.' Don't get me wrong, *Dirt 2*, as a standalone title was not incomplete, however, some of the most demanding and greedy of us felt that snow and rain were environmental conditions that shouldn't have been left out. Night driving was present earlier, but only in Rally Cross modes. Split-screen racing was another demand that players the world over with two controllers wanted. The even greedier bunch amongst us asked for that one extra discipline apart from Rally, Rally Cross, Raid, Landrush, Gatecrasher, Domina-

tion and Last Man Standing; one more to round out the X-Games styled section of *Dirt 2* – the Gymkhana stunt section.

Codemasters listened, and took nearly two years to deliver all these additions, as well as other new challenge-based gameplay modes such as Capture the Flag and Tag, which take place in the Battersea compound. The Gymkhana mode and the Battersea challenges inject some variety into the game, but may not be everyone's cup of tea. However, once you overcome them, you'll feel quite satisfied.

Another major change in *Dirt 3* is that one no longer needs XP to unlock cars. Your garage consists of the cars you've unlocked in the campaign, and you can use these in the Single Player events. While some critics find this defeats the racing game collector's instinct, and tends to leave many cars unused and untried, I differ. There was never a shortage of money in *Dirt 2* to buy whichever cars and kits you wanted at any time, so it barely makes a difference here – except for the



fact that you can't always drive your favourite multi-discipline/track car.

What's also new is the ability to upload 30-second clips of your racing replay to YouTube. You still can't save entire replays even locally however.

Graphically, *Dirt 3* is highly detailed, and can give even reasonably high-end DX11 graphics cards a run for their money at high resolutions. Lighting is noticeably better across conditions and times of day, shadows and reflections are realistic, and the overall attention to detail given to the scenery and the track is incredible to behold. While some critics complain about the lack of 'terrain deformation' in the game, I was too busy looking ahead and enjoying the world rush by at high speed to care whether my tires made an impression in the snow behind me, or my last crash demolished the snow bank. Driving while it's raining or snowing is quite something to behold, with drops and flakes flying by, twisting and turning with you on turns. Rain drops splattering on the windshield in the cockpit view however could have been a little more extravagant, for as it stands now, they're barely distracting – too easy.

As a simulation, *Dirt 3* is not very forgiving in Advanced mode with all assists turned

off; however, it comes with five flashbacks (at the cost of XP earned in the race), regardless of the difficulty setting – a training wheel for those of us who opted for no training wheels. New assists like dynamic racing line are also available now. Controls can be easily adjusted at any point in the race. As with *Dirt 2*, a quick tuning menu called Service Area is available before every race, helping you fine-tune your ride for every track and condition – as useful as always. **A**

**Verdict:** Codemasters took *Dirt 2*, a perfect game, and made it better.

## Pros

- Beautiful graphics
- Great handling
- Variety of gameplay modes

## Cons

- Steep learning curve

## Details

**GENRE:** Racing, Arcade  
**STUDIO:** Codemasters Racing Studio  
**PUBLISHER:** Codemasters, Zapak Games  
**\*PLATFORMS:** PC (MS Windows), PlayStation 3, Xbox 360

## PRICE:

**PC (MS WINDOWS):** ₹699/-  
**PLAYSTATION 3, XBOX 360:** ₹2,499/-

## \*REVIEWED ON PC

MSI TwinFroze II HD 5830 - Phenom II X4 B50 @ 3.1GHz - 4GB DDR3 @ 1333MHz





# THE WITCHER<sup>2</sup>

## ASSASSINS OF KINGS

SKOAR! Review



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

**T**he Witcher 2: Assassins of Kings is a direct sequel to a computer role-playing game (CRPG) based on the works of Andrzej Sapkowski and developed by Polish studio CD Projekt RED. Released in 2007, Witcher was among the most memorable games of its time, mainly due to its fresh take on the genre. In those days, CD Projekt was a little-known studio developing a game based on a modified Aurora Engine that was licensed from Bioware. Going into the sequel, the developers had a brand new, in-house engine and a great deal more renown. Due to the adoption of new tech and all the design changes that went with it, The Witcher 2 feels more like a proper sequel than most of its contemporaries.

### A WITCHER'S TRADE

Apparently to give players the full RED Engine treatment, the designers switched the camera setup from isometric perspective of the first game, to the traditional third-person

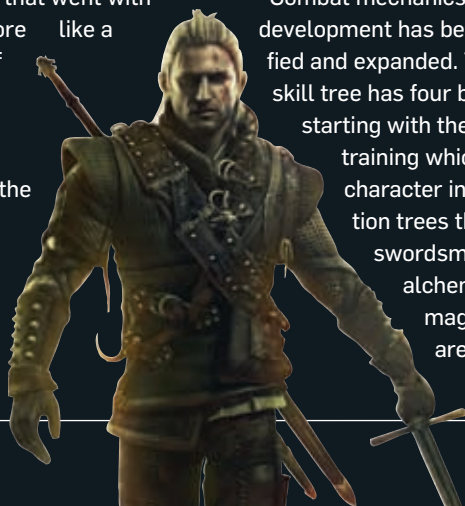
perspective. This move is rather justified as the game environments are rich, immersive and quite convincing. The other significant difference in the sequel is the combat system that also had to involve with the new camera system. While the combat in the first game was largely control by the mouse, the system employed in the sequel uses a combination of mouse and keyboard. At the launch of the game, the combat system was not as responsive as one would have liked and there were also a few balance issues, especially during the early stages of the game. Since then, CD Projekt has released a couple of patches to iron out these issues, along with additional free game content for good measure.

Combat mechanics and character development has been both, modified and expanded. The character skill tree has four branches, starting with the basic Witcher training which leads the character into specialization trees that include swordsmanship, alchemy and 'Sign' magic. Players are free to either invest the skill

points earned at level-up to specialize in one of these branches or to distribute points across all three disciplines. The game's crafting system has also been expanded to include armour, traps and usage of more commonly available crafting material to create rare materials. Many challenges in the game require the player to combine alchemy, crafting, magic and the Witcher's legendary skills with the blade to be successful.

### MORAL AMBIGUITY

The Witcher 2 has carried over that one trait that set the original game apart from the rest of the herd. This game has a multi-arching storyline which is rife in moral ambiguity and is ruthlessly realistic. This time around, the story is even darker as The Witcher is thrown in the middle of a power struggle for the King's throne, while he struggles with his own personal demons. While most contemporary RPGs are guilty of making the consequences of player's choice blatantly clear, The Witcher 2 offers no such comfort. The message this game is trying to put across is that even with the best of intentions, a person cannot be an absolute positive force in the world. Like they say, "The path to hell is paved with good intentions". **d**



## Eye protein detects magnetic field

A light-sensitive protein, cryptochrome, found in the human eye acts like a compass in a magnetic field

## Nevada's law to welcome the future

Nevada passed a law which will enable its Department of Transportation to allow driver-less cars on its highways

# Superheros vs. superheros

The ultimate geek fantasy is to pit their favourite superheros in a battle against other superheros. Wouldn't it be awesome to see these men of justice, break each other's ribs and melt their opponents using special powers. We've shortlisted six such battles we'd just love to see.

### Goku vs. Professor X

A super Saiyan vs. the driving force behind X-Men who maintains an army of mutants. If Goku has Kamehameha, then Professor X has mind control and psychic powers. Battle result: Incomprehensible, we won't survive to find out who won



### Thing vs. The Hulk

It's a battle between two of the most muscular superheros. Hulk has superior strength, and the angrier he



gets, the more powerful he becomes. On the other hand, Thing is intelligent while Hulk is just a big green blob. Battle result: Hulk emerges as the winner

### Green Lantern vs. The Silver Surfer

Silver Surfer can fly through space and is shiny, while the Green Lantern has a power ring that he uses against the forces of evil. Battle result: Silver Surfer would win by slamming his surfboard to Green Lantern's head.



### Daredevil vs. Spiderman

Both these superheros have heightened senses that fine tune them with their surroundings and incoming threats. Spiderman can interlay a trap of webs which Daredevil would easily manage to defeat. Battle result: Daredevil would whip Spidey's ass with his white cane



### Batman vs. Ironman

Both Batman and Ironman have a lot in common: they love gadgets and women. Batman has years of intensive training and a sharp brain on his side whereas Ironman has just a fancy suit to show off. Battle result: Batman would destroy Ironman's suit with just his bat fangs.

### Superman vs. Flash

This is rather a race to find out who's faster. Superman would not be allowed to use his flying abilities, whereas Flash seems the faster of the two. Superman can still smash him. We'd say the race would end in a tie. Battle result: We say forget the race and chill with a beer!



## Top 3 internet memes

You'd know what internet memes are; unless, of course, you've been living under a rock, majority of your time. However, we still feel that an explanation seems fit for the lesser evolved souls out there. An internet meme is generally a picture or a video or just some crazy concept which gets passed around for no logical reason and becomes a viral hit. Here are the top 3 internet memes:

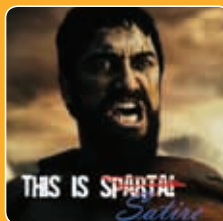
### Lolcats

An extremely popular phenomena, lolcats are pictures of cats with a funny caption. Now you know why the internet is ruled by cats.



### This is Sparta!

Made famous by the pansy movie we know by the name of 300, This is Sparta! meme is a huge hit on the internet with music videos and pictures.



### Epic fail

Stamping pictures and videos 'Epic fail' refers to the fact that something has horribly and in most cases quietly funnily gone wrong with them. (Like this page #EpicFail)





## Meet Amenbo, the five fingered mouse

Japan's Double Research & Development Co has created five fingered mouse named Amenbo which makes use of all five fingers to interact with the computer

## Switch memories on or off instantly

Cutting edge research has allowed scientists to flip rat memories on or off instantly. A cure for Alzheimer's?

Unwind

### How we unwind

#### Pirates of the Caribbean IV

The movie was huge pain in the backside. The reason we managed to sit through it was Penelope Cruz who was a let down



too. Next time we should be more picky while booking our tickets.

#### Kessem G

Word of advice before you guys go and check out the channel, he is extremely mean and humiliates people he interviews for his show. Then again, it's all done for the sake of humour.



#### Enter Galactic - Kid Cudi

Go check out the Enter Galactic song on YouTube. This has become our new closing song. It's fun to listen to and charges us up each time we play it. Enjoy the song here: <http://bit.ly/53wHfV>



**digit DIARY** Consider regular Nokia and Samsung phones and picture HTC's and Blackberrys, well this is what happened to our phones this month. We took the leap finally and got ourselves fancy phones. The proud owners of these phones are Siddharth, Sambhav and Jayesh. As an effect to this Nimish has decided to wait it out and invest in a good DSLR! Photography buff that he is, he's happy with his current phone. We checked out Pirates of the Caribbean and as you might have read already it wasn't much fun, however once the movie was over Infancia got adamant to get back to the office just because her PC was on but we finally managed to convince her. Much required lollies especially during closing are back thanks to Vijay, he cracks us up every time with his one liners. This issue closing we saw a rare occurrence happen, Robert pulled out his electric guitar and started playing old Joe Satriani songs.

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# Port Forwarding

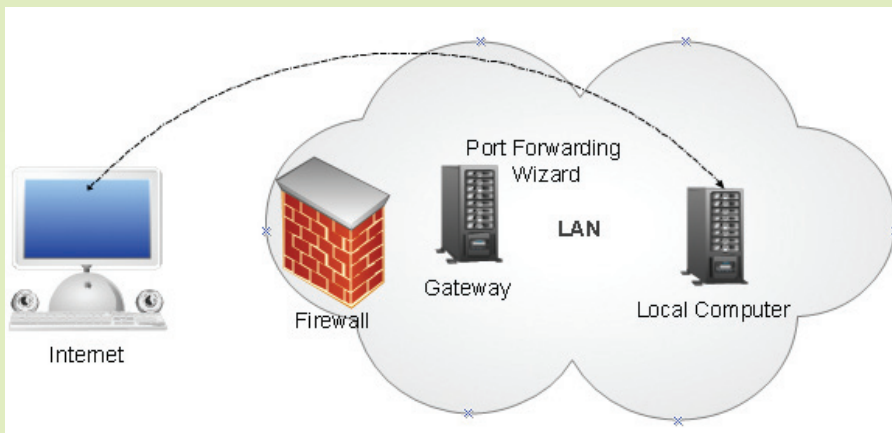
You've probably heard it used in a movie, seen the option in a software, or even read about it in Digit, and if you've found yourself what on earth that means, read on...

**B**efore we jump into what "port forwarding" is, it's important to go over the basics. Let's start with a simple explanation of what a "port" is.

When routers, computers, or basically any communications device uses the TCP/IP protocol (the protocol the net runs on), data is sent out or received as packets with additional informa-

digit.com:80 to the server - 80 is the most common port used by web servers to serve pages to your browser.

Port forwarding can reduce the amount of time the data takes to reach the desired computer. Take, for example, online gaming, where ping times are important, as a split second could spell the difference between killing or being killed.



A look at how port forwarding essentially works

tion specifying a port number. These port numbers range from 0 to 65535 (2 to the power of 16 = 65536). This was done to prevent computers going crazy trying to figure out what data packet was for which application. So, for example, when you type thinkdigit.com into your browser, the browser actually sends the request as think-

This is also useful for, say, using the torrent network, where thousands of incoming and outgoing requests are being made, and can often hang a router or a firewall that's desperately trying to keep track of all that data. If you use "port forwarding", the router just ignores everything destined for the chosen "ports" and "forwards" it to the specified location.



## Types of batteries

**Alkaline:** This type of battery provides life up to six times more than an ordinary zinc carbon battery. These are used in devices which require high energy drain.

**Zinc Chloride:** This type of battery provides relatively longer life than zinc carbon batteries. They are designed for low to medium power consumption.

**Lithium ion battery:** These are designed to deliver maximum power utilizing minimum amount of space. They can be fully charged in about two hours and can usually be recharged anywhere from 400 to 1,000 times.



**Nickel Cadmium:**

These have long service life and feature superior charge and discharge rate. Represented as NiCd these are highly reliable and are manufactured using state of the art technology.

Lithium-ion battery for Nokia N95

## What are those darn mobile app stores after all?

Ever stuck in a conversation about "cool" apps and the app stores they were downloaded from? If you find yourself lost during such conversations, then this guide to the app stores is for you.

**Apple app store:** This is the most popular app store which also has the maximum number of apps available for both the iPhone and the iPad. The current count is more than 3,50,000 apps, for almost everything you can think of.

**Android market:** The Android marketplace has the most number of free apps as compared to other platforms. Some Trade pundits believe Android has overtaken Apple's app store both in terms of popularity and the number of available apps.

**Blackberry app store:** Currently this is the most expensive app store on the block with apps ranging from anywhere between ₹46 to ₹4,000. If rumours are to be believed, Blackberry plans to port Android apps on their latest tablet, the BlackBerry Playbook.

**Windows Phone 7 apps store:** The Windows Phone 7 platform is the most recent addition to the already cluttered mobile apps store category. It currently has about 20,000 apps which some would like to argue is more than the BlackBerry apps store.

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