Price ₹ 150

BAZAAR HIGHLIGHTS

Asus NX 90

HTC Desire

Croma CREL 3127

Videocon D2H

A 9 9 Media Publication

# digit

**YOUR TECHNOLOGY NAVIGATOR** | WWW.THINKDIGIT.COM | **VOL.10 ISSUE 10**

CABINETS
POWER SUPPLIES
LAPTOPS HOME THEATER
CAMERAS GRAPHICS CARDS
MOBILE PHONES
EARPHONES SOFTWARE PEN DRIVES
HARD DRIVES RAM HEADPHONES
PORTABLE HARD DRIVES CPU COOLERS
DTH SERVICES MOTHERBOARDS
SPEAKERS DVD PLAYERS
FLASH DRIVES MICE
HDTVs DESKTOP PCs

**BUILD**
## A LASER SECURITY SYSTEM

**LEARN**
## 3D PRINTERS
## CAREERS IN FLASH

**COMPARE**
## HD MEDIA PLAYERS

**PLAY**
## SONY PLAY STATION MOVE

# BUILD YOUR OWN SUPER COMPUTER FOR ₹ 0
## WITH THE HARDWARE YOU HAVE...

# STOP! BEFORE YOU SHOP THIS FESTIVE SEASON

**FIND OUT:**
What is obsolete ❓
What prices will fall ❓
What is just hype ❓
What is worth waiting for ❓
What you shouldn't buy ❓

**Tips & Tricks:** Gmail, Yahoo! Inquisitor, Soundbooth | **Agent001:** Buys Wi-Fi routers

**WORLD VIEW**
THE BEST TECH ARTICLES FROM AROUND THE GLOBE

## Samsung XXL Monitors

XXLife

Amplify your multimedia experience, gaming experience and the fun of everyday computing with the large screen Samsung XXL Monitors. Get one, and with its super screen size and elegant design form, give your lifestyle a big boost.

23     23     22

P2370MS     B2330H     B2230

**Mega dynamic** contrast    HDMI    **WALL** VESA Mounting    **16:9** ASPECT RATIO    7 80001

## LCD/LED Monitors

# Don't talk to strangers...

Remember when we were kids and our parents warned us not to talk to strangers? I wonder what parents tell their kids these days. It's bad enough in the crowded towns we're living in, where sometimes even our neighbours are strangers, but if Earth wasn't tough enough, we're now dealing with everyday worries in the virtual one as well.

I'm not trying to suggest that social media or technology in general is this big bad tool that's killing us all... that's so last month...

This month, after reading media hype about the stuff people do online – tweeting through childbirth, their own wedding ceremony, and various other events in life that really should be private, I can't seem to fathom what drives people to do such things. It's not just twitter – on Facebook, Orkut, YouTube, any virtual public gathering, or anywhere there's an audience, the court jesters show up screaming "Look at me now!". But who are these people we're all trying to please?

Honestly, we seem to interact with strangers or acquaintances more often than "friends" on social media platforms these days. But then that's the point, isn't it? Unless it's someone you're wooing, how boring is it to interact with the same people, both offline and online? The devil is in the details though – I use the word "interact", which so many of us just don't do any more. It's more about trying to define oneself in the eyes of strangers. It's the school or college canteen all over again – we all want to be popular, and will do anything to try and gain that acceptance.

Of course people will cry foul, and claim "Not me." Of course not you; you're special – just like the other 1 billion.

Why not abandon your current avatar and start from scratch? Ask yourself if you'd continue to do it if no one else ever read any of it or responded?

Don't get me wrong, it's not like I'm some prude who's advocating an end to the net or anything else that's ludicrous. I'm just trying to understand our psychology in the virtual world, because understanding something is the key to using it wisely and safely.

It is, after all, a very human need for us to try and rise above the crowds and make a name for ourselves. It's what's drilled into us from the time we're able to comprehend our first words. We have to get better grades than the neighbour's kid, or behave like he or she does. When we go to college, it's the group you hang out with that defines how cool you are. Later at work you jostle amongst your over-eager colleagues to find a niche you can make a name for yourself in, and will do anything to get promoted, or even noticed. The bar can never be set too high.

At first, the net was a way to escape all that and that's what fuelled its initial surge. It was anonymous, it was free of guilt, and you didn't really care about one another's opinions. That hasn't changed of course, and if you want to, you can still choose to be anonymous online.
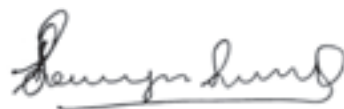
Do you?

Hasn't the whole web experience become just another clone of your offline life? Sure the people you meet are different, but the needs are the same. You want to be popular, but so does everyone else; you want to express yourself uninhibitedly, but fear that your boss or family might read what you said – it's the same rat race all over again.

As CEO, MD and financer of brand You, you know that you're nothing if Google doesn't love you, or if people don't follow/like/poke/message/friend/<insert favourite social activity here> you. So you tweet no matter what you're doing, you Like everything and add everyone as a friend on Facebook, and eventually... you're stampeding through life with the rest of the e-cattle. A few lucky ones get their 15 seconds of fame, might even make some money, and then are forgotten as everyone moves on to the next net sensation. It gets harder each time though. No one wants to see a me-too, so you do something crazy and unique to be noticed.

Real life is hard enough to deal with, without getting carried away in the virtual one. Use the net as a tool, and it can help you succeed at work, college, or whatever you do. Start taking e-popularity too seriously, and you might end up hurting your chances of success. You don't want to be the person who everyone watches on YouTube, but only to make fun of...

Do you?

> **"we seem to interact with strangers or acquaintances more often than "friends" on social media platforms these days. But then that's the point, isn't it?"**
>
> **Robert Sovereign-Smith**
> Executive Editor
> *editor@thinkdigit.com*

*PS: Food for thought – Mark Zuckerberg is one of the most private people around, yet we flock to his site and give up our own privacy to play the "I have more Facebook friends than you" game...*
*Also read this:* http://bit.ly/c7GBNr

# digit
## thinkdigit.com

## TO ADVERTISE

## AD INDEX

## PRODUCTS REVIEWED

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

**Welcome to the Embedded Internet Era.**

15 billion intelligent, connected devices.* Imagine the possibilities.

Enter the embedded internet era at intel.com/embedded/15billion

For more design information, please visit edc.intel.com

For Sales Information Contact:
Rakesh Arora, WPG ELECTRONICS (INDIA) PVT. LTD, D115, 1st Floor Okhla Industrial Area, Phase -1, New Delhi - 110024.
Ph: +91-11-26810175, Fax: +91-11-26810179, Mobile: +91 98100 07545, E-mail: rakesh.arora@sa.wpgholdings.com

# Contact us

**Tell us what you feel about Digit**
If you have an opinion about anything published in Digit, or about technology in general, please write to **editor@thinkdigit.com** or call at **+91-22-678 99 700.** For feedback on the magazine and stories, please write to **readersletters@thinkdigit.com**

**Software on the DVDs**
To submit and suggest software or any other type of content, to be included in the Digit DVDs, write to **dvd@thinkdigit.com** or call at **+91-22-678 99 707**

**Q&A**
If you're having trouble with your PC or a gadget, our experts can help solve your problems. Just write in to **sos@thinkdigit.**com. Remember to include full system configurations in your mails.

**Agent001**
Our very own secret agent will give you the low down on what to buy, from where, and for how much. Send in all your buying advice questions to the coolest agent ever. Write to **agent001@thinkdigit.com**

**Help!**
For copy-related issues, delivery status, or any other complaints regarding out service, write to **help@thinkdigit.com** or call at **+91-22-678 99 678**

**Subscribe**
Want to subscribe to India's largest technology magazine?
SMS: **<DIGIT SUB> to 92200 92200** or visit **www.thinkdigit.com/subscribe**
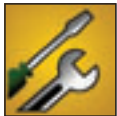
**Product testing**
Want your product reviewed by Digit? Contact our Test Center at **testcenter@thinkdigit.com** or call at **+91-22-678 99 708**

**News and new product launches**
To announce new product launches, and press releases, email us at **pressrelease@thinkdigit.com**

**Endorsements / reprints**
Interested in ordering article reprints, or using our logos? Get the requisite permissions by contacting us at **reprint@thinkdigit.com**
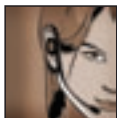
**Business enquiries**
Think we can help you grow your business, or maybe you can help us grow ours? Get in touch with us at **business@thinkdigit.com**

**Careers**
Want to work for Digit? Send us your resume at **careers@thinkdigit.com**

# Interact with Team Digit

twitter
thinkdigit.com/twitter

facebook
thinkdigit.com/facebook

SMS GupShup
SMS **Digit** to 92200 92200

You Tube
thinkdigit.com/youtube

thinkdigit Forum
thinkdigit.com/forum

OCTOBER 2010　　VOLUME 10 \ ISSUE 10

# Contents

## QUICK NAVIGATOR

**16**

BUILD YOUR OWN SUPER COMPUTER FOR ₹. 0 WITH THE HARDWARE YOU HAVE...

**82**

## Bazaar Mini
New section featuring the latest products in the market!

## TRIED & TESTED

**065 PHILIPS HTS5550**
Great sound, but no support for Blu-ray

**068 HTC WILDFIRE**
Android weds Sense, yet again

**069 ASUS NX90**
Massive in size, featuring two trackpads and a shiny aluminium exterior
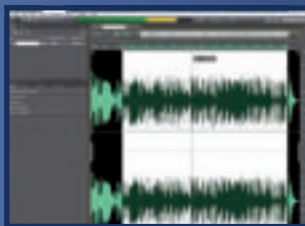
# ON THE DVD

## MINDWARE

### Videos
Top 10 Things You Must Have to Start a Business
- Startups that Fail: Netek
- 10 Must Have For a Start-up
- Invest in Great People and Great Equipment
- Naming Your Company: Put Up a Sign
- You need little capital

### Software
By Demand
- Audacity 1.3
- NetMeter 1.1.4
- Orb 2.0

### Internet
- Scrapboy 2
- TweetDeck 0.34
- WiPeer 0.72
- SmVDC++ 1.05
- Dropbox 0.8
- Seesmic Desktop
- Gladinet Cloud Desktop
- IDrive Online Backup 3
- Yoono Desktop

### Work
- Desktop Secretary 2
- OpenOffice.org 3.3
- Floppy Office 4.0
- Powerpoint Backgrounds 1.0
- IBM Lotus Symphony 3
- Efficient Calendar Free
- Essential PIM
- Address Book Standard 2
- RoboForm2Go 6
- Open Contacts 6
- Mozilla Sunbird

## PLAYWARE

### Kidszone
- Ebooks
- Gaming
- Animations

### Gaming
#### Demos
- FPS Terminator Alpha
- Lost Horizon
- RUSE

#### Trailers
- Blade Kitten
- Lylian
- NBA Elite 11
- The Sims 3 Fast Lane Stuff

#### Walkthroughs
- Assassins Creed
- Brink
- Dead Rising 2
- Duke Nukem Forever
- Gears of War 3
- Halo Reach
- Killzone 3

#### Speedruns
- Halo 2
- The Terminator

#### Patches
- BioShock 2
- Unreal Tournament

#### Mods
- GTA Vice City
- Half-Life 2
- Perfected Doom 3

**Enter**

**06**

**Buzz**
News and happenings from around the web

**Windows Phone 7**
Microsoft is expected to launch its Windows Phone 7 on October 11, with phones shipping by October 21

✉ I am Gopinath from Mettur in Tamil Nadu. I was quite impressed by the September issue of Digit and the amazing articles in it. I have just started reading Digit and would like to know how I can purchase the back issues of Digit and Fast Tracks. Please let me know. Thanks in advance.

Gopinath Venkatarajulu

📊 We are glad that you discovered Digit and were impressed by it. If you want to purchase the back issues of the magazine along with the Fast Tracks you can log on to www.thinkdigit.com/cart and select which issue you want to buy and make a purchase.

Nash

✉ I am an avid reader of Digit. Your June issue really was inspiring in the sense that you spread awareness about using renewable energy sources such as solar energy and wind energy. I read the article and an advertisement in Digit and purchased three solar lanterns this month. They are working quite excellently. I am sure to save at least 20% of my electricity bill each month and recover the cost. In fact I urge you to spread awareness amongst Digit readers to use these solar lanterns this Diwali instead of conventional 'kandils'. This will really help us in saving power and we all will help our planet go green. Thanks Digit.

Dr. Niranjan M Wagh

📊 It's encouraging to know that our articles on alternative sources of energy in Digit prodded you to buy a solar lantern. Our main objective behind the green articles is to inform readers that going green will not just save cash but even the planet. We also have an active community of over 5,000 members on Facebook to keep the green movement going. You can join the group at www.facebook.com/ithinkgreen and share your experience with the solar lantern on the group.

Nimish

✉ I have been reading Digit since its inception. As I stay in Nepal, I was never able to subscribe to it but I love the magazine and always trust your exper-

September 2010

tise as far as the tech world is concerned. But from the past few issues I have been noticing many typing flaws which raise the question of copy checking. In the September issue there is a serious flaw on page 40, third column, 4th para, which says "<text before this is missing>". This kind of error cannot be expected from a reputed magazine like Digit. Even in many places 'r' is replaced by the new Rs. symbol. Please take care of such errors in future.

Vikash Kandoi

📊 We apologise for the typo errors that you have pointed out. We will try our best to avoid such silly typos in our magazine in the future. Thank you for your continued patronage of Digit.

Nash

✉ I am a regular reader of Digit magazine. I especially like all the various software, operating systems and entertainment content bundled in the DVDs and the knowledge provided in the Fast Track supplements. Being an engineering student, I feel the need to acquaint myself with Autodesk and Autocad for my college assignments.

Hence I would like to request for a Fast Track issue dedicated to the 'Basics of AutoCAD'. I found the Fast Track to Maya, Facebook Apps, Open Solaris etc very useful.

Hope you will consider my request and do the needful.

Upendra Wanmali

📊 As far as softwares like AutoCAD go, we can at best provide trial versions on our DVD, as these are professional softwares. If you want to request any softwares for the DVD section you can drop in a mail to dvd@thinkdigit.com We will try providing you with softwares that you request. It's good to know that you found the Fast Tracks to Maya, Facebook Apps etc useful and we hope you are trying to build your own apps by now. We will certainly consider your Fast Track suggestion.

Sambhav

✉ I remember going to the stationary shop and asking *"bhaiya wo cd wali magzine aa gayi kya..."* that was Digit in its inception days. I didn't care what the name of the magazine was, but I surely knew how it looked on outside. The CD usually had a few flash games, freewares like Winamp, Winzip, updates etc and small stuff which would take hours to download on dial-up connections. ISDN was quite expensive. 9.9 Media acquired it much later but they have kept the spirit alive and Digit is now the most read technology magazine in India. Mindware and Playware grew from a single CD to 2 DVDs. Articles are catching up with

the most recent technological developments. Products comparisons help you buy whats best for you than what's best for the shopkeepers. Every time you turn to Q&A, Tips n Tricks there is always something you don't know. Digit has been the best guide for every tech enthusiast almost for a decade now and I hope it'll always be so. Good luck.

Naman Bansal

▥ It is all thanks to loyal readers like you, that we are India's No. 1 technology magazine. We will continue to work harder and give you the very best in the tech world, latest softwares and games on our DVDs and best product reviews. And thanks also for taking us down memory lane. We feel immense joy in knowing that you have stayed with us this long.

Rossi

✉ Digit has been one of the biggest motivators in my career growth as I have learned a lot from it. But now it's taking part in all these marketing activities, promoting anything and everything, seems like the people at Digit have lost the motive. India's biggest technology magazine, kindly wake up. I understand that being a magazine, you have to be a part of such activities too, but as per my knowledge, Digit used to give details of why to buy a product and why not. It was totally unbiased and was my ultimate guide to technology. Frankly speaking, it is losing its credibility by promoting these kind of courses, products through its posts in Facebook. I hope you publishing ads in the magazine is good enough for Digit to make its profits.

Ankit Srivastava
(via www.facebook.com/thinkdigit)

▥ First up: All tests, reviews, features and other content of Digit is completely unbiased, and devoid of any advertiser interference. We still give details of which products are good, and which are bad, and these results are arrived at after rigorous testing. Come visit our Test Centre yourself, if you don't believe me!

If you're referring to the Anniversary special free gifts we gave out, we obvi-

---

✉ I have been a regular reader of Digit since September 2006. I have never missed a single issue since. I totally love the changes you have made in the magazine but there are a few suggestions that I'd like to make :
1) What happened to the Crossword? Please restart it. I don't mind the exclusion of a prize but please restart it.
2) An online archive of the articles in the magazines would be nice. We often need to refer to an article or tips and tricks, but just cannot find it quickly.
3) An article on the different editions of Windows 7 and their usability would be welcome. For instance, why should someone spend Rs. 12,000 for the ultimate edition when he won't be using the features?
4) A Fast Track on Overclocking would be great.
5) A lot of us use BitTorrent clients and leave the computer running overnight, you could do an article on minimising power wastage in such situations. Is there some way to turn off GPUs and extra HDDs in such conditions?

Lastly, I want to congratulate Team Digit on its persistent efforts to fight piracy and educate the masses. I personally ditched the pirated XP I was using and bought an original Windows 7 home premium. Also , the articles on going

green were very helpful. I force people to replace incandescent bulbs by CFLs. I even made a local store owner understand the benefits of using a CFL and he replaced all the bulbs by CFLs the next day. Thank you and keep the good work going.

Kislay Joshi

▥ We really feel proud to have people like you among our readers. You did the right thing by switching from a pirated copy to a licensed one. What also impressed us was the fact that you convinced your local store owner to switch from incandescent bulbs to CFL lamps. The whole idea behind our green initiatives is to make the readers aware of ways in which you can make a difference to society by adopting techniques which apart from saving your money also help you in making our planet a better place to live. We will continue to give you the best of content. As regards the pointers you suggested, we will surely discuss them in our edit meets. We had done a DIY on Overclocking in the June 2010 DIY Fast Track. You can refer to that article, which will give you enough information on how to go about overclocking and what all precautions you need to consider. Also, you can find the crossword you requested in the World View section.

Nimish

---

ously need to tie-up with other companies from time-to-time, and this is done to provide you, our readers, with much more goodies than ever before.

As for the posts on Facebook, I didn't quite understand that part. Are you talking about the occasional spammers that advertise themselves on this page?

Robert

✉ I am a long time reader, first time letter writer. What I like most about Digit magazine is the reader friendliness of the articles. I would initially buy it only for the DVDs and not bother much with the articles. But upon reading them gradually, I realised that the articles aren't as jargon heavy as I presumed.

They are succintly and lucidly written and are largely jargon-free. The fact that a technologically challenged person like me could make sense of them is a huge testamament to the articles. I liked the new Bazaar design, but at the same time I also missed the comparison tests. Keep up the good work.

Aashray Hariharan

▥ We try to write our articles in such a way that anyone can read and benefit from them. Also now that you are a Digit you shouldn't call yourself technically challenged, right? We are glad you liked the new Bazaar format. We have incorporated a comparison test this time around.

Siddharth

**Buzz**

**2 million IE9 downloads**
Microsoft recorded over 2 million downloads of the new Internet Explorer 9 Beta

**Google white space**
Google is currently testing broadband using white space spectrum in Ohio, USA; white space are unused radio frequency ranges

# HP incubating 'memristors' with Hynix

If you are familiar with any of the terms resistance, capacitance or inductance, you will know that there are three properties which an electric circuit is bound to have. In the late 1960s, a prediction was made for yet another circuital property, then dubbed as Memristance. IEEE confirmed the property renaming to memristance (and the circuital element showing this property is called memristor) in 1971.

Though it is not a grand revelation, the mem of the term memristor comes from memory. This property allows a circuit element to memorise its state – even after it is switched off and then switched back on. This made research labs try and work out the feasibility to use it as a memory solution. The good news is, of late – the fruit is about to ripen. Scientists at HP Labs have confirmed the possibility to make storage chips based on memristors for sometime now, and now they have taken a real big step forward, collaborating with Hynix to produce RAM for the new generation.

Hynix is an old player in memory solutions, and HP found them good to work with to take the technology further, and to show us a glimpse of the new era. The new system memory solutions are primarily dubbed as Resistive Random Access Memory (ReRAM).

The possibilities of memristors are endless, as HP explains it. Even though they are open to work with other companies (yet to be announced) other than Hynix, HP says they'll keep the intellectual property to themselves, and make it a licensable standard to be used by other chip manufacturers.
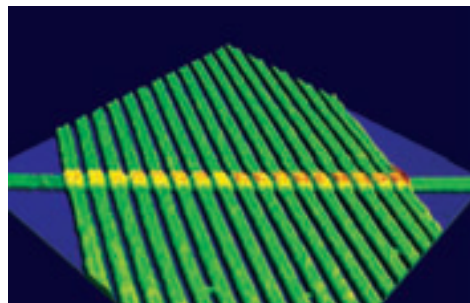
We will have to see how interesting the race between flash and memristor memories gets, but in the race of S/DRAMs and ReRAM, the legacy will fall flat without a doubt. As you already know, no matter how speedy it gets, once switched off, a DDR module is as good as a breadboard. On the other hand, a ReRAM module will be completely able to retain its state even after the PC is turned off. Hang on, is that supposed to mean we'll have faster boot-up? Yes, a lot faster – a restart will be much like Windows Sleep Mode.

Let's see where HP-Hynix leads us; the future is promising enough to be brighter – but the question is, how much?

# AMD showcases Bulldozer and Bobcat

AMD showed off its next-gen processor technology at the Hot Chips 2010 conference in Silicon Valley, detailing the evolved nature of its upcoming Bulldozer and Bobcat lineup of chips.

"The new cores, codenamed 'Bulldozer' for high-performance PC and server markets, and 'Bobcat' for low-power notebook and small form-factor desktop markets, were designed from the ground-up to address specific requirements and compute workloads," said Chekib Akrout, a senior VP at AMD.

AMD has apparently taken its x86 processor technology to the next level, radically evolving its core designs from the first time since the original Opteron x86 and K7 processors. To highlight this new ground-up approach, Akrout went on to say: "x86 architecture lies at the very heart of computing and AMD has continuously evolved and improved its core designs. The Bulldozer and Bobcat cores continue that evolutionary path and are designed to change the user's experience with the resulting products."

One of the biggest features of the new Bulldozer architecture is that it will support a new sort of SMT (simultaneous multithreading) and not the traditional CMP (chip multiprocessing). This will finally allow two or more threads to run on a single core, working simultaneously.

How this technology compares to Intel's Hyper-threading is not yet known, though it has been noted that with AMD's novel SMT approach, two threads will share a single front-end, but, use separate integer execution resources.

According to Ars Technica's Jon Stokes, for this type of SMT to work, all shared code and data storage components of the processor must be "either replicated or partitioned", giving equal priority to each thread when sharing resources, in such a way that buffer entries don't remain empty when there's no second thread.

Not many definitive statements can be made about the Bulldozer family of processors, but you can safely expect some rather fantastic floating-point performance, especially if there's sufficient memory bandwidth.

Meanwhile, the Bobcat lineup, while great for laptops and tablets, might just be AMD's best bet to take on ARM's Eagle lineup in the high-density cloud server market, the wave of the future.

It really does seem as if AMD has all future bases covered, from desktop, server, and laptop to tablet markets, especially if you include the Fusion Accelerated Procession Unit (APU).

**Instant for Mobile**
Google will be launching their Instant search
feature for mobile phones by the end of this year

**HP's dual destroyer**
HP has launched the PhotoSmart eStation E510 which has
a detachable 7-inch Android tablet as its display

# Another Indian tablet; this time $50

Out to make technology affordable, India has got another low-cost Android tablet up its sleeve, made by Allgo, who have been showing off their technology for a while. You can see the platform for the new $50 prototype, called the Stamp, in a video on thinkdigit.com.

The Allgo Stamp tablet is supposedly full-featured device, sporting a 7-inch display with an 800x480 resolution, and a resistive touchscreen that's built for stylus action, perfect for the classroom. It apparently costs $50 to manufacture, and can also be priced at the level with a minimum of 10,000 units ordered, which if you think about it, is more resourcefully made than a $35 government-subsidized one million units minimum tablet – accordingly, expect the specs to be less impressive than the amply-proportioned $35 tablet. At one million units ordered though, the Stamp can cost as low as $40.

# ATI no more?

AMD is simplifying things and plans to retire ATI brand by 2011. It's been four years since AMD bought ATI. While many industry experts felt $5.4 billion was simply too much to invest in a graphics company when with a similar amount of money AMD could have built its own, the popularity of the ATI brand was perhaps the number one factor in favour of an acquisition over internal development. Things are different now – ATI is at the top of its game, it has even edged out NVIDIA as the market leader in discrete GPU shipments. Things will apparently change some more soon, as AMD has revealed it will soon be doing away with the ATI brand.

Surprised? Well, not everyone is, as AMD has certainly been busy this past year, wresting the crown from NVIDIA, and, also trying to simplify its brand structure in the form of AMD Vision, which is a logo a PC gets if the CPU and GPU are manufactured by AMD. Vision, Vision Premium, Vision Ultimate, and Vision Black are the price progressions, from entry-level to top-end.

AMD says it has some solid market research to show why it has taken the decision to phase out the ATI brand by Q1 2011, and retain only the Radeon/FirePro brands.

# Wink e-reader lanched at ₹11,490

Bangalore-based EC Media International announced the release of its e-reader tablet, a device we covered on Digit TV (youtube.com/digit) a while back. Starting at ₹11,490 for the Wi-Fi only device (Wink XTS), the e-reader will get a running start with more than 2,00,000 titles from inked content deals with publishing houses such as Harper Collins, Oxford University Press, Penguin, Permanent Black, and Roli.

The Wink 3G will cost ₹14,990. The e-reader supports up to 15 modern Indian languages, and has a 6-inch 16-level grayscale e-ink display at 800x600 resolution, 400MHz ARM9 processor, 2 GB onboard memory (expandable up to 16 GB), WiFi, microSIM card slot, GPRS, 3.5mm audio jack, USB 2.0, audio/video playback support, and a 10 hour battery life (10,000 pages and 10 hours music).

# Google TV to launch globally in 2011

Google's CEO, Eric Schmidt, announced the release date of Google TV at the IFA show in Berlin. More than just internet TV, it will apparently go live in the United States this October, and will be launched globally early next year.

Diverging from the Apple TV pricing scheme, Eric Schmidt also announced that the service would be available free of cost. Google TV would rely on shows produced by content providers, and Google has no intention to "get into actual content production".

While Sony has already struck a partnership with Google that will see many of its future televisions sporting Google TV embedded in them, other TV manufacturers, such as Samsung, are also looking to get their hands in the pie.

So while Google and Apple have been going head to head for a while with Android versus the iPhone, very soon, their war will have some new battle fronts, with TV versus TV, and tablet versus tablet (ChromeOS and Android). It's also been reported on several different occasions that Google is mobilising forces against Apple's iTunes music platform as well, with its own Google music platform. However, Schmidt refused to comment/confirm the official existence of this front for the moment.

**Connections**

**12** **Web Watch**
Your fix of the latest buzz from the
world of the web

**Talk to charge**
South Korean scientists are working on
using sound waves to charge the battery
of your phone,so next time you are running
low on juice, just talk to charge

# Nokia's first dual SIM phone
## arrives with latest X series entrant

Nokia has released its first dual SIM phone, and is launching it first into the Indian market. While Nokia introduced the Nokia C2-00 as well, the Nokia C1-00 will hit the streets first, and already has a price of ₹1,999. While this is bit higher than we expected earlier (₹1,700), this low-priced dual SIM phone is definitely a milestone for the company. The Nokia C1-00 is a very basic Series 30 phone that offers only voice and SMS capabilities, along with FM radio, and a flashlight. Some of the phone's unique features for its price include a speaking alarm clock in local Indian languages, call tracker, and multiple phone books (one per SIM).

The Nokia C2-00 however, is a Series 40 dual SIM that attempts to cater to those who want a little more from their phone, offering GPRS facilities,

MP3 player, microSD expandability up to 32GB, FM radio with recording, 3.5-mm audio jack, Bluetooth, MMS and a VGA camera. Most notably, the phone will also come with Nokia Ovi Life Tools.

Present at the India-exclusive launch was Mary Lloyd, Executive Vice President of Nokia's mobile phone division, who spoke at length of the importance of India and other emerging markets for Nokia and how they accounted for a significant percentage of the 360 million Nokia phones sold in 2009. In fact, according to Lloyd, these markets have become such major players in the global scene, that its hard to "ignore" them anymore, so much


Nokia's X2

so, that Nokia wishes to call these emerging markets "blossoming markets" instead.

Lloyd went on to speak about how Nokia has a place in every price segment in India, and its massive presence in the country is unique, especially with its "hyper-local" approach to sales and Nokia Care, as well as dedicated research and testing centres within the country. Her division concentrates on sub-$125 phones and at that segment, what becomes more important than making the phone inexpensive is ensuring that it contains the "relevant innovation" or relevant features for its demographic. She believes that with the Nokia C1-00 and Nokia C2-00, they have once

again managed this juggling act. In related news, Nokia has released the Nokia X2 officially in India, for ₹5,999. Representing the low-end of the new Nokia X Series, the entertainment phone runs on the Nokia S40 operating system. While it does not offer 3G capabilities, the 2-2-inch screen device is still quite feature-rich, with dual speakers, stereo FM radio with RDS, Bluetooth 2.1 with A2DP, USB-on-the-Go support, Nokia Messaging, native Facebook app and expandable microSD memory up to 16GB.

The X2's 5MP camera is one of its strongest selling points and the phone's battery life is said to be very good as well, allowing for up to 27 hours of music playback and 13.5 hours of talk time. Though it is slightly more expensive than previously indicated and arrived later than expected, we feel Nokia may just have a strong contender on its hands, offering many features at a decent price point and a very trendy form factor. Whether or not the lack of 3G and Wi-Fi will seal its fate remains to be seen.

# Samsung launches two new Android
## smartphones in India - Galaxy 3 and 5

Samsung has launched two new Android 2.1-based 3G-enabled smartphones in India, the Galaxy 3 (I5801) and Galaxy 5 (I5503), priced at ₹12,300 and ₹10,200 respectively.

Out of the two, the Galaxy 3 is the higher-end device, though both phones feature Samsung's TouchWIZ 3.0 UI, 3G connectivity, the Layar Reality Browser, Social Hub and Allshare social networking tools, as well as Swype text input.

The Galaxy 3 has a 3.2-inch screen, a 3.2MP camera with geo-tagging and face/smile detection, microSD expandability up to 32 GB, Wi-Fi 802.11 b/g/n, DNSe, Bluetooth v3.0 with A2DP, GPS and A-GPS, and loads more.

The Galaxy 5 has a 2.8-inch screen, a 2 MP camera with geo-tagging, microSD expandability up to 16GB, Wi-Fi 802.11 b/g, Bluetooth v2.1 with A2DP, GPS and A-GPS, and more.

Ranjit Yadav, Director, Mobile & IT, Samsung Elec-

tronics, commented on the launch of the two phones in India: "In the open OS area, our strategy is to offer consumers with whatever they want. As a result we are offering mobiles based on the Android, Windows and our own proprietary OS Bada in the Indian market. With the launch of these two smartphones, Samsung's smartphone portfolio now boasts of 4 feature-rich models at a price


Samsung Galaxy 3 and 5

range of ₹10,200 – ₹31,500. By the end of 2010, we plan to a have a portfolio of 8-9 smartphone models and expect to notch up a 20% market share in the smartphone market."

**Android's wet pants**
OEM's using Android on their phones have been compared to boys who "pee in their pants" for warmth in winter by Nokia's outgoing exec

**Touch without touchscreen?**
A British company has devised a way of letting phones without touchscreens respond to touch using sound waves

**Mobile watch**

# ARM flexes its muscle: quad-core 2.5 GHz processor

ARM is certainly making some major headlines. Just as soon as Samsung announced its Orion application processor based on the Cortex A9 design, and GlobalFoundries is open for 28nm orders, ARM has decided to show off its latest processor design: the Cortex A15 MPcore.

Though dual-core mobile processors are definitely not a thing of the past (hell, people are still coming to terms with that much power under the hood), ARM has developed a processor that is certainly ahead of its time – a quad-core 2.5GHz mobile processor. Codenamed Eagle, the ARM Cortex-A15 MPcore processors might one day make their way into smartphones, but for now it will be best suited for netbook/tablet applications, and as designed, for high-density cloud server racks. So while the processor has already been snapped up by Texas Instruments, the wide-reaching hands of ST-Ericsson and Samsung are also eager for a piece of the pie, and have been named as "lead licensees". Thus, you can definitely expect a whole range of devices featuring the Cortex A15 MPcore to head your way and also power many cloud-based services you will soon be taking for granted.

If you are wondering about the memory capacity and virtualization capabilities of the processor and just how well it would fit in the high-density server rack environment, you will find the answer reveals server applications were exactly what ARM was thinking about when designing the Cortex A15. It is very evident when you see the processors have embedded hardware virtualization and support for nearly 1TB of memory.

The Eagle lineup of ARM processors will feature a whole range of designs, from single-core (with speeds up to 1.5GHz) to quad-core (with speeds up to 2.5GHz), and from 32nm to 28nm. Expect the parts to be mass-produced and shipped only by 2013.

# A look at the Toshiba Folio 100 tablet – running Android 2.2 on NVIDIA Tegra 2

Toshiba recently showed off its Google Android 2.2 and NVIDIA Tegra 2 based Folio 100 tablet at IFA. Though the device certainly seems well-specced (it also supports Flash 10.1), some of those who've had a hands-on with the device are not very impressed with the build quality or the apparently drab UI customisation. Let us hope that Toshiba decides to do something about this criticism before they release the tablet in the last quarter of this year in the initial launch markets of Europe, Middle East, and Asia. Here's a look at the specifications of the Toshiba Folio 100 tablet:

**CPU:** NVIDIA Tegra 2
**Display:** 10.1-inch capacitive multitouch display with 1,024 x 600 pixels resolution and UI auto-rotate with accelerometer support.
**OS:** Customized Android 2.2
**Storage:** 16 GB onboard with SD expandability (no word on the limit yet)
**Connectivity:** Bluetooth 2.1 +EDR, Wi-Fi 802.11 b/g/n, Mobile Broadband (for certain models & countries), DLNA compatible, 1 x miniHDMI, 1 x USB 2.0 (client and hub), SD/MMC Card Reader
**Camera:** 1.3MP webcam
**Battery life:** 7 hours (65 per cent web browsing, 10 per cent video playback, 25 per cent standby)
**Weight:** 760g
**Size:** 281 x 181 x 14mm
**Software:** Opera Mobile, Toshiba Media Player, FBReader, Fring, Document to Go and Evernote.

Another feature of the Folio 100 tablet includes an instant-



Folio features Android 2.2 and NVIDIA Tegra 2

on functionality. The tablet will also have access to Toshiba Market Place, which features such platforms as Music Place, Radio Place, and App Place. This unfortunately means it will have no access to the Android Market, at least until Google gives it, and the numerous other Android tablets waiting in the wings, this access. Toshiba's suggested retail price for the non-3G version of the Folio 100 is £329, including VAT, which is £100 less than the 16GB Wi-Fi-only iPad, and it might have really have a chance to give the iPad a run for its money, especially if the Android Market is added to the mix.

**Multiple sign-in for Gmail**
Google officially announced multiple sign-in feature for Gmail. You can now sign-in with up to three accounts simultaneously

**Filter spam**
Blogger gets a brand new comment system that lets you filter spam with ease

# Gmail's VoIP and Priority Inbox

## Priority Inbox

Ever faced this scenario? You check your inbox, only to find dozens of unread emails. You scan through them and decide to archive them all rather than read them. Unfortunately, in the process you archive a rather important email.

Gmail's new "Priority Inbox" aims to tackle that

tions, important unread email, starred email and everything else after that — these sections can be customized. Just like Gmail's spam system, this too can be trained over time, by marking an email as less or more important.

This reminds us of Mozilla Messaging's Raindrop project which had a similar noble
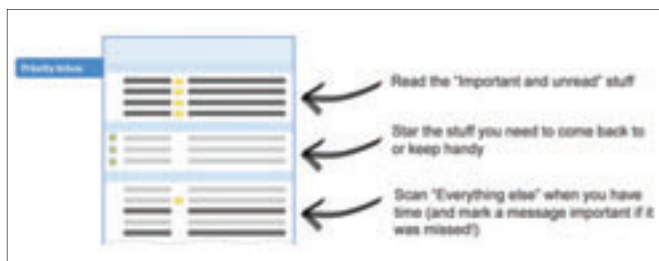


problem. Gmail will learn over time which emails you open, read and reply to and accordingly automatically sort your email to display relevant, important emails first. Email is then put into different sec-

goal. While Gmail will obviously provide these features in their web interface, Mozilla Messaging's Raindrop is a mail client application — although it runs its own server and has to be accessed via a browser

— which can aggregate details from multiple social networks to figure out which email is more important to you.

This feature will be rolled out over a week for both Gmail and Google Apps mail users, so keep an eye out. You can try "Priority Inbox" by visiting its new home at Google.

## Gmail VoIP

Finally some good is coming of Google's acquisition of Gizmo5. Though Gmail's chat application already supports voice and

video chatting and was recently released for Linux too, Google now also offers the ability to make calls to phone numbers from the Gmail interface. Available only in the US for now, it will work with your Google Voice number and you will be able to not only make calls but also receive any calls made to this number.

Google's been testing the Google Voice service for a while now, which is a very handy feature and we cant wait for it to roll out here in India.

# Geolocation comes to Facebook, finally

The web, especially the social web, is getting increasingly interested in your whereabouts. After "What are you doing?" it has now come to "What are you doing, and where are you doing it?"

Twitter added support for geolocation metadata in its tweets quite a while back, which would allow people to see tweets from people in areas around them. Google's Buzz also supports metadata information in its messages, and can show Buzz

posts from users around you as a layer in its Google Maps.

Facebook's take on geolocation is called "Places". You can use the feature with the iPhone via the Facebook iPhone app, or the http://touch. facebook.com website if you have an HTML5 and geolocation capable phone and as we've come to expect, you need to be in the USA.

Essentially, the feature allows you to make a Facebook post which can include your geolocation data and also allows tagging of friends who are with you.

# Cisco's "Skype" call for VoIP

Less than a week after Google announced their new voice calling feature from Gmail, Skype, a company providing similar VoIP services for years now, is in the headlines. Apparently Cisco Systems is showing an interest in buying Skype.

According to a popular weblog, Skype is hoping for a valuation of about $5 billion with its IPO. It means this is the minimum price that Cisco needs to offer to make the offer even seem attractive. Cisco is already a big player in

the VoIP services market and an investment as large as $5 billion is not out of reach for them by any means. In 2005, Cisco had spent $6.5 billion on cable set-top box maker Scientific Atlanta.

Whether this rumoured Skype purchase is intended to expand Cisco's products and services to set it apart from other VoIP competitors, or to become a venture that will strengthen Cisco's strategic value as an acquisition target itself, remains to be seen.

**Windows®. Life without Walls™. Dell™ recommends Windows 7.**

# Your Studio on the go.
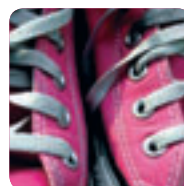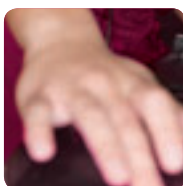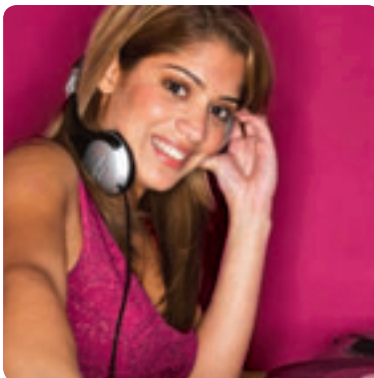
# Studio 15

**A place to unleash the creative you. Write. Recite. Compose. Connect. Explore. Create. On the move, with your Studio.**

# ₹53,400*

Inclusive of all taxes; delivery charges extra**.
E-Value Code: T541002IN8

- Intel® Core™ i7-740QM Processor
- Genuine Windows® 7 Home Premium
- 4GB DDR3 SDRAM • 500GB SATA HDD
- 512MB ATI® Radeon™ HD 5470
- 15.6" (39.6cm) 720p WLED Display with TrueLife™ (1366x768 res.)
- 1-Year In-Home Service Plan

Dell™ Studio 15 laptops are available in a range of vibrant colours^ and Artist Edition Designs.

Enjoy brilliant multimedia on your Studio 15. Upgrade to:

Slot Load Blu-ray™ Combo Drive

1GB ATI® Radeon™ graphics

## Buy directly from Dell

Order from anywhere, anytime*

One-to-one assistance

Choose your colour^ & features

Delivery wherever you want*

## To buy, call us or go online

**1800 425 8124**
Toll-Free Mon-Sat 9am-6pm (BSNL & MTNL subscribers only)

**080-2510 8989**
(Standard charges apply)

**www.dell.co.in/home**

**Connections**

**Cloud OS**
Jolicloud 1.0, a free HTML5-based web-centric
Linux OS, releases to public

**Age of Empires for Windows**
Robot Entertainment announces Age of Empires
MMO game for Windows
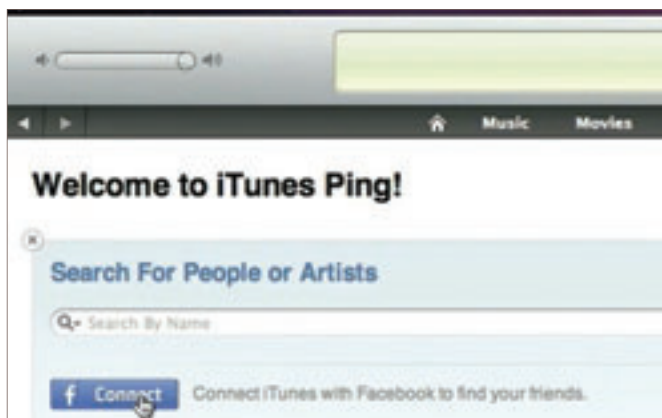
# Apple releases iTunes 10 Ping!

Apple just launched iTunes 10 and will offer its users many new features, including Apple TV playback synchronization (playback across iOS devices using the cloud). The biggest new feature in iTunes 10 would have to be Ping, a new social network. The new social networking service, oriented around music will let people follow artists and get updates as they post their opinions, pictures and release music. iTunes 10 will also feature HDTV show rentals which form a big part of the new Apple TV. Rented television show episodes will be available up to 30 days after purchase, and will expire 48 hours after you start watching it.

# "Wave in a Box" at a server near you

Google Wave has been sentenced to death and that must have hurt Google, abandoning a product which they launched with so much pomp and promise. So now Google has taken a step which is sure to delight developers and ensure that Google Wave lives on, even if it isn't on Google's own servers. Dubbed as 'Wave in a Box', the new venture will expand on the existing 2,00,000 lines of open-source code from the Wave project and it will let developers continue developing it. Google will be opening up a significant portion of their previously closed parts of Wave, including a lot of the server and client code that forms the front-end of the project. Those running Wave in the Box will be able to run it on their own server, and have real-time communication. Google Wave in a Box users will also be able to configure their "boxes" to federate across instances! So you could use your Wave setup to communicate with other Wave setups, just like email.

Enterprises could always implement their own Wave servers based on the open source clients, servers and protocols Google had developed. Novell Pulse, for example is a Google Wave-based solution. Despite Google Wave's closure, Novell will continue developing Pulse as intended. Google will also provide a means to import the current Google Wave conversations to the users own server, so they will be able to find a new place for the data once Google Wave shuts down at the end of this year.

# Mozilla furthers Open Web Gaming

A new initiative by Mozilla Labs has been unveiled which aims to make the web a better environment for gaming. Whether it is by using Flash Player or other plugins and add-ons in the browser — as in the case of Quake Live — gaming is something that had until recently been out of the purview of web browsers, requiring additional assistance of in some form.

Recent additions to web standards have made it quite possible to have a platform agnostic game now, which will run on any platform as long as it is standards compliant. The new Canvas element can be used for advanced applications from image editing and video processing application and even a full-fledged NES emulator called JsNES which downloads NES roms and plays the game straight from the browser.

The future lies in hardware accelerated web browsers. Browsers in the time to come will render content using the graphics hardware of the system, meaning richer, faster, smoother animated content on the web. This also translated favorably for games which can perhaps make best use of hardware acceleration. Mozilla has started shipping Firefox with hardware acceleration turned on since Beta 5 of the browser, and Internet Explorer 9 has also showcased hardware acceleration. If you're having doubts about how much this can affect rendering performance of a browser, consider this, Chrome which is the fastest browser in terms of Javascript performance, gains a score which is in the mere 60s to 80s in IE9's Psychedelic Browser test, while both Firefox 4 and IE9 have scores upwards of 1500!

WebGL is another browser standard technology which will revolutionize 3D content, such as games, on the web. With WebGL browsers will be able to render full-fledged interactive 3D content in the browser as a part of the web page itself. Since WebGL is based on OpenGL ES, which is used on mobile devices, even portable devices can support the standard.

To kick off this venture they have announced the "Game On 2010 Competition" open to all developers. The future is bright for browser-based gaming, and it seems Mozilla has taken a hold of its reins.

**Sci-tech**

**22** **Everything's embedded**
We're surrounded by computers of all sorts in our busy lives. We take a look at some computing marvels from everyday life

**26** **3D printers**
Explore the possibility of three dimensional printing

# Build your own
# Supercomputer for ₹0

## ...with the hardware you already have

Rudresh Jariwala
*rudresh.j@thinkdigit.com*

A supercomputer is something that is awe-inspiring; the stuff of dreams. We all want to see one, and sit and work on one. Why? What a silly question to ask a Digit reader. Now you could break into some defence lab and try playing chess against one – you'd lose the game and your right to live, but it might be worth it... you could also choose to save 10 years of your salary to blow up on 3 minutes with a supercomputer... or you could just whack your friends over the head with this book, quieten them down and read this article.

If you really want a supercomputing experience, all you need is a local area network, as many PCs as you can get your hands on, and this issue of Digit (yes the DVD too), and you're on your way.

So how super a computer can you throw together? If you're doing this at home, with say, two or three PCs, then you can set up something pretty decent,

but if you're in a college, or in a company with relaxed IT rules, you can easily touch Gigaflop territory; Teraflops if it's a corporate office, and you'd probably be able to break world records if you happen to be network admin at Google or Microsoft. The beauty of it all is that we'll show you how you can use idle PCs, without changing any of the contents on the hard drives, or "ruining" anyone's work, or any such nonsense. All you need is a CD-drive on the server PC and network cards that are capable of booting from LAN, which basically any current generation LAN card / chip is capable of.

### A short history lesson

Seymour Cray led the way in the 1960's and was at the forefront of design and development of supercomputers. We have come a long way since then, and supercomputers today perform calculation intensive tasks such as quantum physics, weather forecasting, wind tunnel research, simulation of detonation of nuclear bombs and many more such compute intensive tasks.

### Why?
Why not? If the looks of awe you will get from friends aren't reason enough, consider these uses:

### 1.Render
If you're a 3ds Max junkie, a supercomputer would save you hours of boredom as you wait for renders to complete. You can use Autodesk Backburner in Windows to speed up your rendering over a cluster of home PCs. Those of you looking to do Maya rendering are also in luck, as there are render managers available – http://bit.ly/dok3IZ. If you are looking to do 3D content creation on your cluster, you have the option of using Blender (http://www.blender.org) which is a free and open source suite that is available for all major operating systems.

### 2.Donning a white hat
Brute-force hacking of passwords usually involves a large amount of computational power, or years of regular PC time. Not for you, right? Software

**33**

**World View**
Global content, presented to you by Digit

**World's First**
ENIAC was the world's first supercomputer. It weighed in at nearly 3 tons, used 19,000 vacuum tubes and took up a whopping 15,000 square feet of floor space

**Feature**

such as John the Ripper and Cisilia can be used to crack passwords much quicker than a single computer. Check out http://bit.ly/b4zvfI for complete documentation on password security.

## 3.Cure cancer

You may want to consider joining the Folding@home project which is a distributed computing project run by the good folk at Stanford University and managed by Professor Vijay Pande. Their aim is to understand protein-folding, which is related to diseases such as Alzheimer's, Huntington's, Parkinson's and many cancers. All you have to do is download and install the software, and contribute your computer resources. Go to http://folding.stanford.edu for more details.

## 4.Little green men

If you believe that life exists out there, you can help scan all the radio noise in space by dedicating computing power to finding broadcasts from other planets. The Search for Extra-Terrestrial Intelligence is what you can contribute to, by visiting their SETI@home project at http://setiathome.berkeley.edu/.

To boldly go where no man has gone before!

## 5.Video transcoding

Transcoding HD (Blu-ray) video takes up to seven times longer than SD video. With open source tools such as the Media Encoding Cluster Project (http://www.codegrid.de/trac), you can effectively utilise your Windows or Linux cluster to rip your favourite flicks.

## General cluster?

A cluster is essentially a group of computers linked together and performing their duties as one powerful (and power hungry) computer. The computers are usually linked using

### Light speed - World's top 3 supercomputers

**#3** **IBM BladeCenter QS22/LS21 "Roadrunner", country : USA**
Clocking in at 1.04 petaflops per second, this former world no.1 occupies a staggering 6,000 sq. ft! When compared to the 100 sq. ft. per capita space that the average Indian has, this monstrosity simulates the ageing of nuclear materials to check the viability of USA's nuclear arsenal.

**#2** **Dawning TC3600 Blade "Nebulae", country : China**
This 1.27 petaflops per second beast is theoretically capable of running at almost 3 petaflops per second, the fastest ever!

**#1** **Cray XT5 "Jaguar", country : USA**
As of May 2010, the Cray Jaguar is the fastest supercomputer in the world. Delivering a knock out punch to the IBM Roadrunner's 18 month tyranny as world's no.1, this 1.75 petaflops per second supercomputer boasts 2,24,000 cores which would make it the equivalent of 56,000 quad core PC's!

standard Ethernet cables, and it's obvious that Gigabit networks are preferred.

However, if you think you can do anything on a cluster that you can on a PC, you're going to be disappointed. It's a software problem. Most software we use these days are not even optimised to run on multiple CPU core PCs, let alone a cluster of multiple PCs. We can hope that this will change soon, what with everyone leaning towards multi-core computing.

## Grease up those elbows

Now it's time to start building your cluster. A cluster can be architecture independent as long as all the computers on the cluster run the same SSI (Single System Image). So even if you have PCs with different operating systems and hardware configurations, a cluster centric Linux distribution such as CHAOS, ROCKS or PelicanHPC can be booted into memory of a server, and then all the others can do a LAN boot, using the SSI from the primary. The primary is the one that splits up tasks into chunks and offsets it to the nodes to be computed, and then re-assembles it all and displays the results. Thus, it's best to use the most powerful

computer on the grid as the primary to prevent even tiny amounts of latency.

Although it would be quite possible to build a cluster composed of both Linux and Windows PCs, for the purpose of this article, we'll be using a Linux distro called PelicanHPC (High Performance Cluster). The latest release of PelicanHPC is on the Mindware DVD, along with a PDF document that has loads of advanced information – how to save your work, how to create customised PelicanHPCs, etc.

## Getting started

PelicanHPC is a Live CD image that allows you to get a cluster up and running in a matter of minutes. It allows you to do parallel computing using what's known as a Message Passing Interface (MPI). It's this MPI that makes it possible to split tasks up into smaller sub-tasks which are transmitted to and fro as "messages". You can run Pelican on a single, multiple-core machine, or just network as many PCs as you can together to make a cluster.

While it's possible to boot the primary system from a pen drive, we strongly recommend burning the ISO to a CD and using that instead. Since it's a Live CD, you don't have to worry about formatting or rearranging your parti-

```
HPC Test -----------------------------
Quantity of processors =  19
Calculation time       =   0.28 seconds
Cluster speed          =  6483 MFLOPS
```

'Digit'ised cluster : An example of cluster scalability.

tions, and when PelicanHPC is turned off, all the PCs go back to their original states. Of course you can also choose to install PelicanHPC on the primary's hard drive which would allow you to always continue where you left off from.

## Requirements

Obviously, all PCs that are part of the cluster should be networked. Use a

### India's top number crunchers

**#3** IBM eServer BlueGene/L, location: IISC, Bangalore

**#2** PARAM cluster, location: C-DAC, Pune

**#1** HP Cluster Platform 3000, location: Computational Research Laboratories, Pune.

## Your very own Sony supercomputer

Scientists in the US have built a supercomputer using nothing more than the computing power of PS3 consoles! Check out
**http://www.ps3cluster.umassd.edu**

## Home grown muscle

India's first supercomputer was the PARAM 8000. PARAM stands for Parallel Machine. The computer was developed by the government run C-DAC in 1991

| Super-jargon busting | Be-aware the "Beowulf" | Example |
|---|---|---|
| "FLOPS" or Floating point Operations Per Second (fractional values in short) is the standard measure that's used to gauge the performance of supercomputers. Commonly used with SI prefixes such as tera- ($10^{12}$) or peta- ($10^{15}$), teraflops and petaflops can be used in shorthand as TFLOPS and PFLOPS respectively. "Petascale" supercomputers can process one quadrillion ($10^{15}$ or 1000 trillion) FLOPS. Exascale is computing performance in the exaflops range. An exa-flop is one quintillion ($10^{18}$) FLOPS, or one million teraflops! | Open Source Cluster Application Resources (OSCAR) is a Linux-based software installation for high-performance cluster computing. OSCAR allows users to install a Beowulf type high performance computing cluster. Beowulf Clusters are scalable performance clusters based on commodity hardware, on a private system network, with an open source software (Linux) infrastructure. The OSCAR project aims to support as many different Linux distributions as possible. Supported Linux distributions as mentioned on the OSCAR website are Debian, Fedora, OpenSUSE, Red Hat Enterprise Linux and Ubuntu (http://bit.ly/p4vur). | For instance, if you were to create a cluster at home using one dual core AMD system running Windows 7 and one single core Intel system running Ubuntu (yes it is possible since clusters are platform independant), theoretically, the total resource pool available to the computer will be 3 cores. But as explained, bottlenecks are caused due to varying factors such as limited bandwidth over the LAN and varying hardware (slower RAM, processors on other nodes etc.). |

cross cable for two PCs that are connected directly, or regular patch cables to hook them all up to a switch. The Primary acts as a DHCP server, so you're going to have to make sure that you don't mess with any other DHCP servers running on the network (like at work, or in a college). For those who don't know, a Dynamic Host Configuration Protocol server is one that gives PCs on the network the IP configuration information such as their own IP, the subnet mask and gateway information.

You could either copy the ISO file off the Mindware DVD on your local machine and boot it up using virtualbox or burn the image onto a CD (like we did). The advantage is that booting the live image will offer better performance than a virtual machine.


Select "Live" to boot the image into RAM

## Let's begin

When the PC boots up, press [Enter], or whatever you're asked to, in order to boot from the CD. Select "Live" when PelicanHPC asks you for a boot method.

You will eventually be greeted by a screen that gives you the option of booting from your permanent storage. If you wish to do so, you'll have to assign drives accordingly (sda1, sda3 etc.). For our article, we're

sticking to "ram1", so choose that. On the next screen, you will probably want to move the cursor over to "Yes" and press enter unless you are running a customised version of PelicanHPC. Customised versions are relatively easy to create, and you should read the PDF to learn how you can bundle all the packages you find necessary
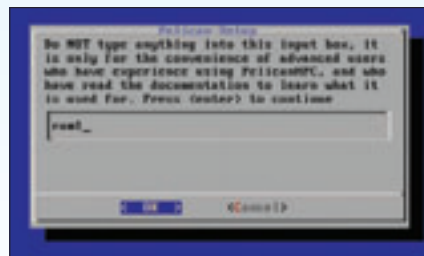

Boot into ram1 to prevent any damage to the OS on the primary PC

into an image so that all packages are consistent across your cluster.

Ok, almost done! Now change the default password and enter your own password. Hit [Enter].

Now you are in the PelicanHPC terminal. Enter your username as "user" (no quotes) and then type the password you entered. You are now logged in. You can now choose to enter the graphical user

### REMEMBER!

The administration of your cluster will require you to keep 2 commands in mind. They are "pelican_setup" for configuring the frontend as a server (so that all other compute nodes can LAN boot off the frontend) and "pelican_restart_hpc" which is used to add/remove nodes from your cluster after initial setup. These commands need to be run in terminal.
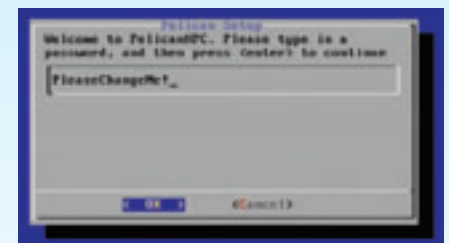

Change the password

interface by typing "startx" or continue to use the console. The console is the default mode in PelicanHPC to avoid problems with unusual graphics hardware.

If you boot into the Xfce graphical interface, you will have to start terminal and then proceed.

Now, time to setup your cluster. In terminal type "pelican_setup".

When you arrive at the screen where the instructions state "Time to bring the compute nodes into the cluster", hit [Enter] on "Yes" and boot up the compute nodes making sure that the computers are connected via ethernet cable(s) and that their first boot device is set to Network.

**Tip:** For those of you having trouble netbooting your old PC's, check out http://www.rom-o-matic.net for help on how to get your netboot up and running.

The compute nodes will net-boot and stop at prompt.

Now, keep hitting "No" till the complete count of the compute nodes is available on the screen. Once all compute nodes are connected and accounted for, hit "Yes". Your compute cluster is now successfully up and running!

**Tip:** When you are done with the compute nodes, hit Alt+Ctrl+Del to restart your PC.

**Sci-tech**

**Supercomputer drivers?**
A new supercomputer called NeuFlow is capable of driving a car efficiently through the use of a human based visual system

**Long road ahead**
India owns a measly 1% in the share of the world's top 500 supercomputers

**Did you know?**
A single modern desktop PC is now more powerful than a ten year old supercomputer

## Does it work?!?

Now to test your cluster using some regression calculations. Start terminal and type in "octave" and press enter. Now type "kernel_example" and press enter (drumroll please) to see some really cool econometrics curves generated by your cluster. You may also want to try other examples such as "pea_example", "bfgsmin_example",
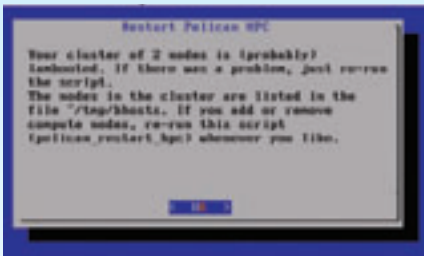


Hit "No" till all compute nodes are accounted for.

"mle_example", "gmm_example", "mc_example1" and "mc_example2".

You also get a time taken to generate as one of the outputs in the terminal. This can serve as your first benchmark for how much faster your new cluster is performing.



Screen after completion of netboot

## How much faster is your new Super rig?

Alright, so now you are the new cool kid on the block with loads of super computing power at your disposal. But what speeds are you really touching? Well, a simple way of knowing how much faster you are going will show up right in the terminal where you ran the pelican_setup command. Once you are done connecting

all the compute nodes and hit "Yes", just wait in terminal to get an overview of what speeds you are achieving and how much each compute node is contributing.

Bear in mind that the speed shown here to you is not optimised for your particular cluster since all the compute nodes (irrespective of the number of cores you have) will only receive one MPI rank, hence limiting the work of each compute node to one core. This can be optimised to properly balance the load of an application, but the optimisation is left to the user. You can find help on the PelicanHPC forum with regard to this if you are really serious about getting maximum compute power out of your cluster.

Problem with measuring cluster performances is that there is no general purpose tool available for testing all components. Currently, the LINPACK

tool is used for cluster benchmarking, but it does not measure all cluster features. Head over to `http://bit.ly/9QyPU6` to get your fix of all the cluster benchmarks you need to know about.

## Three finger salute

Though clusters are not popular in the home environment these days, the light at the end of the tunnel seems very bright. With ongoing research on sharing GPU load within the cluster and software developers using the OpenMPI appli-

cation programming interface in their software development process, cluster variants of our favourite software and games seem possible in the not so distant future. Look to cluster computing as
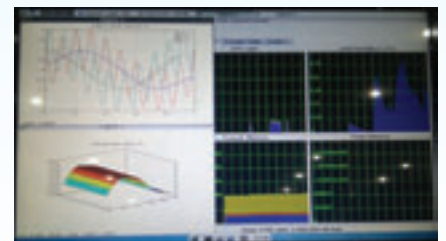


ksysguard monitoring cpu load on the cluster

an opportunity to innovate and come up with your own implementation of load balancing over the network.

With all the information required freely available on the internet (Open Source), students can use this as a research subject and base their projects on this new world of parallel computing. Quoting the father of our nation, "Be the change you want to see in the World" and look to the horizon to make the world of computing a faster, better place.



4 computers on a cluster with the switch highlighted

Sci-tech

**Penguin's Market**
Linux OS has close to 90% of the
supercomputer market in its grip

**Elephantitis**
IBM's ASCI white supercomputer weighs as much
as 17 elephants and can do in one second what a
calculator would take 10 million years to do
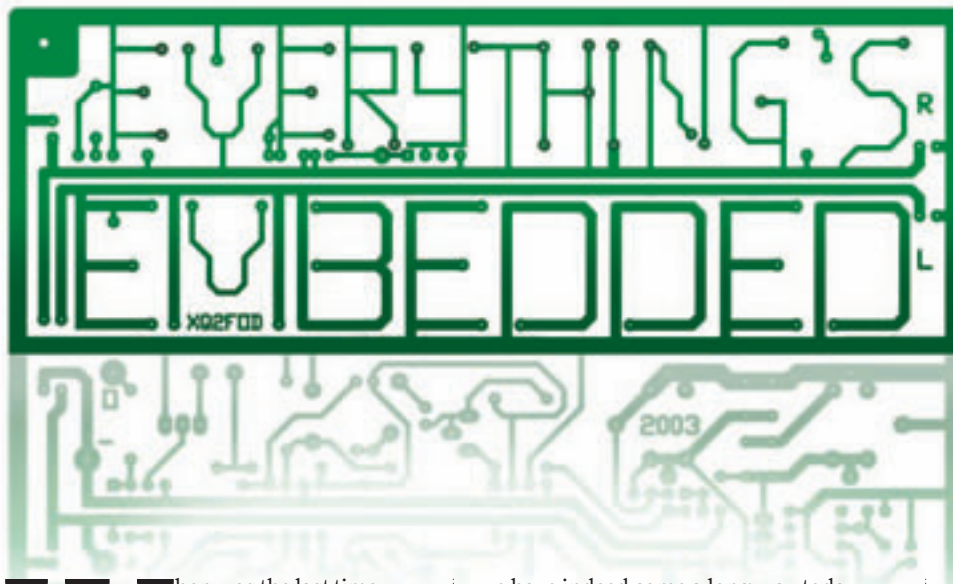
## Totally unaware of the rapid development around us, we don't realise the importance of embedded systems in our lives

Jasnoor Gill
*readersletters@thinkdigit.com*

When was the last time you paid attention to the electronics behind the devices you interact with and use every single day of your lives? Over the last few decades, embedded technology has taken over our homes, being present today in almost every aspect of our lives. Most devices, from the humble electronic wristwatch to your car have one or even more embedded microprocessors in them.

These devices do all the work behind the scenes, silently and reliably. They work so well, in fact, that we rarely stop to even think of the mini-computer running inside the smallest and simplest (supposedly!) of devices. As a result, every house has dozens of embedded devices and microprocessors running in the background. For some, it may in fact even run into the hundreds.

Starting from the first true microprocessor invented in the early 1970s,

we have indeed come a long way today. Technology has kept advancing, resulting in increasingly powerful processors, while becoming even smaller at the same time. Beginning with some very specialised applications, embedded technology today is prevalent in every field imaginable. Today's automobiles are one of the best examples of the advances made in embedded technology. From the single microprocessor present in the 'trip-computer' of the 1978 Cadillac Seville, we have come a long way to today's high end Mercedes S-class and BMW 7-series models, boasting around 100 microprocessors. These control everything from the engine to the one present in each headlight! The electronics and related wiring is in fact a major part of the total cost of any car being manufactured today.

"How did we survive before the microprocessors took control of almost every machine we operate?" The answer lies in the demanding "we". We want a car which can do 0-100 kmph in 5 secs, yet it should give an economy of 15 kmpl. We want a phone which should have push mail, yet give 100 hours of talk time and give off minimum radiation. Such feats cannot be achieved by mere mechanical and electronic designs alone. The replacement of a carburettor with direct fuel injection would not have been possible without a microprocessor, because a carburettor is the best precision a mechanical design can achieve. Embedded designs help overcome such engineering and material limitations.

And this is the primary reason for their pervasiveness.

The second reason is our paucity of time. We want assistants, intelligent assistants. Our microwave oven should not overheat my food even if we're not around. Our washing machine should know how much detergent to use for our clothes, depending upon the type of clothes without us having to intervene. This "intervention-less" behaviour cannot be achieved without a microprocessor.

The third and most potent reason is connectivity. The "On Star" systems, installed in Ford vehicles in the US, can inform emergency services should the car meet with an accident. The BMW customer service can unlock and start your 7-series remotely if an emergency occurs. Closer to home, you can tell your Airtel set-top box to record your favourite program while you are stuck in a meeting. So in effect, you not only pay for the device which you have bought, you also pay for the connectivity and the associated ecosystem.

### Microprocessors – everywhere and in everything

Here is some equipment which functions because of embedded technology:
- Multi-function electronic watches
- All computers/ATMs
- mobile phones, pagers and other communication devices
- Engine controllers, anti-lock brake (ABS) systems in cars
- Home appliances like microwave ovens, washing machines, televisions, air conditioners etc.
- All aircraft systems
- Safety systems like fire alarms, sprinklers



Embedded systems and controllers

**Is Wi-Fi safe?**
The WPA and WPA2 encryption has been broken by
Russians using a brute force attack coupled with massively
parallel computational power of NVIDIA's GPUs

**Did you know?**
Modern day automobiles have more
computational power than there was
on the Apollo 13 moonlander

### What goes on in your television set?

At a lower level, every embedded device is basically the same. It consists of:

- A microprocessor which is designed for low power consumption
- Memory – meant for storing both the original program ('firmware') and for processing of data
- A reliable, real-time Operating System or 'firmware' designed to give instant results while running without any errors for years at a time.

Perhaps the most significant use of the embedded microprocessor has been in making this world a safer place to live. A plane armed with an anti-collision device can warn the pilot if another plane comes too close. A modern ICU monitors all the vital signs of a patient and informs the medics should a parameter cross some dangerous threshold. The airbag controller in a car is so finely tuned that it can activate the safety bag before you hit the steering column. Most of the vital safety devices today contain some or the other form of computing support, because by nature, a computer cannot commit "human error".

The Spanair crash, which occurred on August 20th 2008 and cost 154 lives, is one of the examples of what happens when safety systems go wrong. This crash occurred because the pilots did not verify flap positions, and ground system that was supposed to verify this, was shut down due to a malware attack.

Another example is that of Therac-25, a radiation therapy machine which gave its patients severe burns and radiation poisoning. The reason was a software bug. This bug had been present in previous versions of the machines as well, but was never seen before due to mechanical locks. In the Therac-25 design, these locks were removed, but the software was not tested thoroughly.

These and many such instances depict how we have started placing the most precious thing in the hands of machines, human life. While casualties due to self-aware systems like the Skynet may still be in the future, a machine not following the proper safety standards has been around already. Hence the need for extensive safety norms like Do-178B, that ensure the reliability and functionality of life-critical systems. With the increasing usage of embedded technology, we need these systems to be up and running, always.

An aircraft while landing cannot afford the infamous blue screen of death (BSOD) during touchdown. A pacemaker planted inside a patient cannot afford to hang. That is why the operating systems which run inside these embedded devices are not standard operating systems. They are designed with special requirements like no hang issues, to always respond within a time limit, and to have a very high degree of reliability. The usual ones are QNX Neutrino (used in Cisco Equipment), VxWorks (one of the oldest), Integrity (used in USAF F-22 Raptor fighter jets), and its lighter version, the VelOSity. The most common open-source RTOS available is RTLinux.

### Programming Embedded systems

- More on vehicle ECU modifications: http://en.wikipedia.org/wiki/Engine_control_unit#Programmable_ECUs
- http://www.eetimes.com/design/embedded
- Embedded Linux forum: http://www.ucdot.org/
- http://www.embeddedarm.com/

The most common hardware for embedded systems today are usually SOCs or System-On-Chip (example: Nvidia Tegra). This is a special chip which contains everything a system needs, including a CPU, memory, and other required controllers (graphics, input output, etc). The most common CPU used in such systems is either an ARM or an MIPS based CPU. Intel has recently released an Atom SoC as well. Unfortunately, most of the embedded systems available today cannot be reprogrammed without specialized equipment. This is both good and bad. Good because we may inadvertently change a mission-critical parameter. Bad because we won't be able to customize our equipment. While some ECUs (Electronic Control Unit) used in vehicles can be modified for aftermarket modifications, the best way is usually to swap out the complete unit.

Embedded devices already dwarf computers many times over in numbers, and
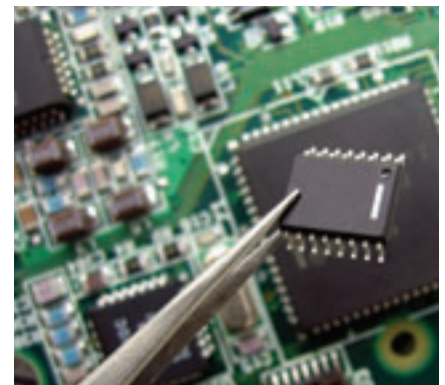

Advances in fabrication mean that the chips only get smaller

this is only going to increase as we move to a more and more automated future. With the rise of networking, the number of devices connected to the internet is increasing, so much so that this is acknowledged as a factor in the coming exhaustion of IP addresses, and the resulting move to IPv6 from the current IPv4. The day is not far off when most of the internet will consist of such devices talking to each other or sending updates on their status.

What was once considered the domain of some crazy programmers a few years ago is already here. You can, with some effort, put the technology in place to control your home appliances and other devices from a remote location. The smart home is not far away, when all such operations will be performed automatically using sensors to detect events, and react accordingly.

Cyborgs, once considered the fantasy of science fiction writers, are now a reality with humans increasingly being given artificial electronic implants to restore damaged body functions, from prosthetic implants to pacemakers, all with the help of embedded technology.

Embedded technology is definitely here to stay in our lives for the long term, but like most technologies, it is a double-edged sword. While making life easier for everyone involved and automating multiple tasks, it is still up to the designers to ensure that all such designs perform as expected. A good embedded design is always the one where the user does not have to think about the complexities working behind the scenes.

# YES Clarity

# YES your digital life

http://www.iloveyes.net

## YMP-1
### MP3 Player
- 2GB Built-in Memory
- MP3, WMA Supported
- Weight: 12g
- Built-in Li-Polymer Battery
- Playing Time: 8 hours
- 3.5mm Earphone Jack

## SAPPHiRE
### MP4 Player
- 1.8" TFT Display
- 2GB / 4GB / 8GB Built-in Memory
- Video / Audio / Photo / E-book / FM
- FM Radio and Voice Recording
- Built-in Speaker
- Support up to 8GB Micro SD Card
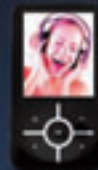
## YMP-50
### MP4 Player
- 1.8" TFT Display
- 4GB / 8GB Built-in Memory
- MP3, Photo And Video Player
- Support Muilt Formats
- FM Radio
- Support Multi Languages
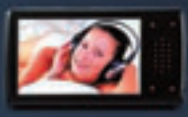
## YMP-81
### MP4 Player
- 3.0" 16:9 WQVGA TFT Display
- 4GB / 8GB Built-in Memory
- MP3, Photo And Video Player
- Support Multi Formats
- Support RMVB Video Playback
- FM Radio and Touch Control

## PMP-99
### Personal Media Player
- 4.3" Touch Screen TFT Display
- RMVB Video Playback
- FM & Voice Recording
- USB 2.0 High Speed
- Built-in Speaker
- Calendar / E-book / Games

## PMP-100HD
### Personal Media Player
- Full Multimedia Functions
- 5" TFT LCD Display
- Support high definition output
- Support RMVB Video Playback
- Built-in Stereo Speaker
- Support Micro SD Card
- Remote Control

## DPF-717
### Digital Photo Frame
- 7" High Quality TFT-LCD Display
- G-Senor Auto Rotation
- Photo Viewer
- SD /MMC/ MS Card Slot
- Clock & Calendar
- USB 2.0 Full Speed

## PDV-720
### Portable DVD Player
- Wide 7" LCD Screen, With Hi-resolution &Hi-brightness
- 270 Degree Rotatable Screen
- Support Video, Music & Photo
- AV Out Jack For External TV/Monitor Connection

## YDT-12  Media Centre
- 12" High Resolution Digital LCD Display
- DVD Player And Hi-Fi System
- Built-in Analogue TV Function
- AV Input and output
- CD Ripping To USB
- FM Radio

## SP-101 Speaker
- PMPO: 1500W
- High Bass Output
- 2.1 multi media speakers
- 4" High Bass Sub-woofer
- 3" Driver Units
- Wooden Material with Elegant Design
- Magnet Resistant Technology

## SP-131 Speaker
- PMPO: 1800W
- High Bass Output
- 2.1 multi media speakers
- 4" High Bass Sub-woofer
- 3" Driver Units
- Wooden Material with Elegant Design
- Magnet Resistant Technology

## SP-101 Speaker
- PMPO: 1500W
- High Bass Output
- 2.1 multi media speakers
- 4" High Bass Sub-woofer
- 3" Driver Units
- Wooden Material with Elegant Design
- Magnet Resistant Technology

## SP-21 Speaker
- PMPO: 1200W
- High Bass Output
- 2.0 multi media speakers
- 2.5" Driver Units
- Compact Design
- Piano Finish

## SP-22 Speaker
- PMPO: 1200W
- High Bass Output
- 2.0 multi media speakers
- 2.25" Driver Units
- Compact Design
- Piano Finish

## HyperCITY
There's more to discover.

Available at Hypercity - Mumbai, Jaipur, Amritsar, Bangalore and Hyderabad

Technology Frontiers
IDLPL
Website : www.indiadigitallife.com

### Contact details

For corporate enquiries
Mr. Deepakraj Singh    Contact details - 9717499623

For trade enquiries

North India - Mr. Manmeet Singh    Contact details - 97174 99632    Email: manmeet.singh@indiadigitallife.com
West India - Mr. Mani Ramchandran    Contact details - 90040 90467    Email: mani.ramchandran@indiadigitallife.com
South India - Mr. Shankar    Contact details - 96000 99692    Email: g.shankar@indiadigitallife.com

Hyderabad - Mr. Ram Mohan    Contact details - 91777 70384    Email: rammohan@indiadigitallife.com
Bangalore - Mr. Vinoth Krishnamurthy    Contact details - 96111 98412    Email: vinoth.k@indiadigitallife.com
East India - Mr. Ashish Roy    Contact details - 98310 66116    Email: ashish.roy@indiadigitallife.com

**Sci-tech**

**3D fabricators**
Public schools in the US, Japan and China have come together to launch the Fab@School Project to ensure that 3-D fabricators are available to children in their own classrooms

**Rapid prototyping**
HP, in collaboration with Stratasys are finally entered the Rapid Prototyping market with the Designjet 3D in April this year
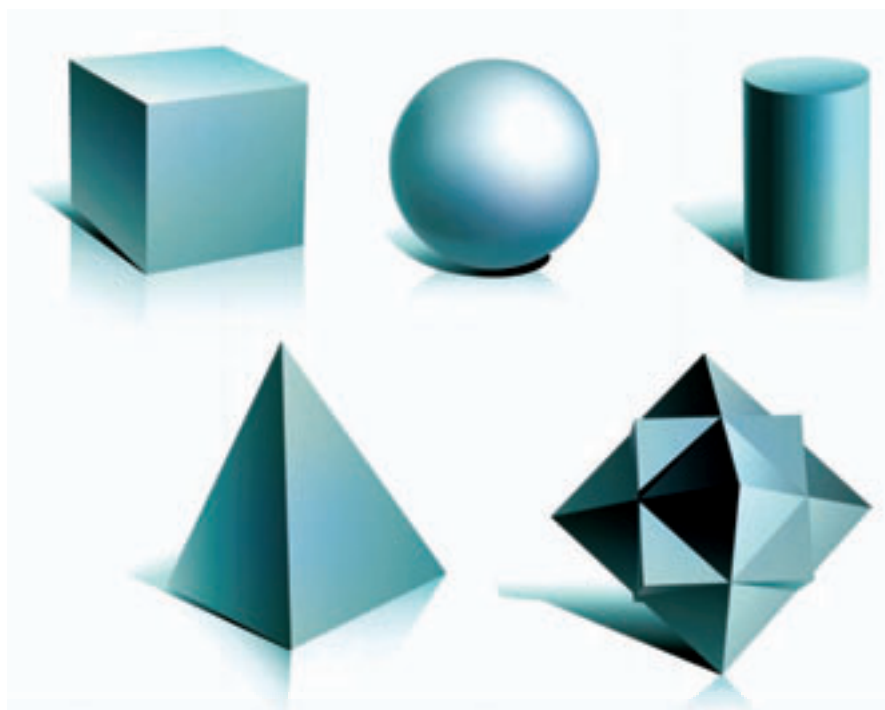
# In the depth of the matter....

## Everything you wanted to know about 3D printers but were too busy to ask

Madhusudan Mukerjee
*readersletters@thinkdigit.com*

**B**lame it on that German genius, Gutenberg. Around 1440, Johannes Gutenberg created the movable type machine and changed the world, exploding into a googol effect that Marshall McLuhan, the popular media theorist, called the 'Gutenberg Galaxy'.

From the first press, printing technology has gone through several changes, including the rotary press, the screen printer and the dot-matrix to culminate in today's compact and efficient inkjet and laser printers. But if you thought that this was the end of the line it's time for a serious rethink. Tomorrows printers don't just print text and images. They give you the real thing – the thing itself. To further use a convenient cliché, when it comes to 21st Century technology, tomorrow is today.

### RP Machines

'Rapid Prototyping' is an umbrella term that refers to a category of technologies that automatically build actual physical 'prototypes' – or models based on the data provided by a CAD (Computer Aided Design) software. 3D printing is one such technology. Engineers and designers have always needed prototypes to check out whether their concepts are viable in the real world or not. Most of these technologies were 'subtractive' – 'Machining', for example, is a technology

This 1954 German stamp shows Gutenberg at his printing press

wherein a nondescript block of material (typically, of metal or wood) is taken and the unnecessary parts removed (subtracted) to attain the required form. This is a really long process and could take several days or months, depending on the size of your prototype.

Rapid Prototyping, on the other hand, works somewhat in the reverse manner – an 'additive' process (but don't take the word 'rapid' too seriously). All RP machines use the same working principles: basically, the machine receives parameters of the object from a computer generated image and, splitting it into layers, proceeds to create these layers bottom first, adding one upon the other, until the object is formed. Instead of cutting, they heap. In short, it's a five stage process:

1. Make a virtual model using CAD software - anything from SolidWorks to SketchUp would suffice.
2. Convert it into an STL format. Since every CAD package uses different algorithms, the STL (stereolithography) file format has been accepted as the standard for all 3D printers universally to maintain consistency. Exporting the design file to STL transforms the object's image into a triangulated network so that the flat surfaces are represented in 3D. This conversion entails the introduction of the Z-axis. The greater the Z-value, the longer the production process. The same goes for the number of surfaces – and curved surfaces mean a lot of triangles, and thus, heavier files.
3. Use the proprietary software (usually provided by the manufacturers of the 'printer') to slice the model up into layers of minimal thickness. This allows you to control the build orientation keeping in mind the smallest detail. The program may also be used to set up support structures during the building process, allowing you to make partitions, nooks and crannies.
4. Construct the model using a chosen material. Typically, the machines use polymers (liquid or powdered), paper, or powdered metal. Almost any metal (Cobalt Chromium, Stainless Steel, etc.) would do. Photopolymers based on

The domain industry will grow by

# $2.3

# Billion
# in 3 years

## Become a Web Services Provider today!

Experts believe the Indian web services industry will grow from $20 million today to $2.5 billion by 2013. ResellerClub is a web infrastructure provider that can help you set up your entire web business at no extra cost. We give you the products, selling interfaces, and management control panels; all you need to do is join us.

**Domains|Web & Email Hosting|SSL Certificates|Web Design**

**Call: 022 3079 7677 OR Email: contact@resellerclub.com**
**Use coupon code: DIG10 for a 25% Discount**

**resellerclub**

www.resellerclub.com

$2.3 Billion in 3 years

**Ancient methods**
Egyptians had developed a glass-casting method similar to Vitraglyphic thousands of years ago in which finely crushed glass was mixed with a binding material such as gum arabic and water, deposited on a negative mould to form a coating

**Movable type**
Bing Shen(China) is often credited for having invented the movable type printing technology much before Gutenberg

acrylics are more commonly used.
5. Clean up the final product and finish. This may involve removal of support structures, curing, sanding, blowing or breaking away excess material or painting the finished product.

The process is quicker, cheaper and more precise than the earlier developmental process. The similarity in process, however, ends here. There are several major variations that are in vogue (more than six are easily available today), so let's take a good look at some of them and how they work.

Charles Hull was the first to shake the world awake to the idea of 3D printing with his patented process of 'Stereolithography' (Greek for 'solid-stone-writing') in 1986. The machine primarily consists of an ultraviolet laser, a set of mirrors (X/Y) and a platform immersed in a vat full of liquid photopolymer – a fluid plastic. Once the machine gets going, the ultraviolet laser (bouncing off the mirrors) 'draws' on the polymer that is on the platform. The material, being sensitive to light hardens into a flat rigid layer when exposed to the laser. This becomes the bottom of the prototype. The thickness of the layer is usually about 0.004 to 0.006 of an inch but you could manipulate this as per your requirements. The platform then descends into the tank and the polymer that spreads over it is then given the same treatment by the laser, hardening the next cross section of the model. While there are plenty of resins that could be used, they're usually the ABS (acrylonitrile-butadiene-
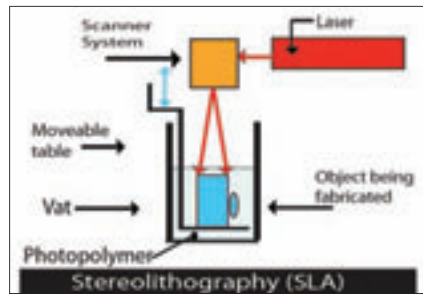

What lies beneath

styrene) kind or moulded polypropylene – clear polymers that can withstand very high temperatures.

Finally, the solid object is taken out of the tank, the extra polymer washed off and the support portions broken off and put into an ultraviolet oven to be completely cured. However, the size of the model you make must be restricted to the size of the tank and the build platform. To make very large objects, typically, the object must be divided into parts which must be put together later.

## Selective Laser Sintering (SLS)
Sintering is, basically, the process of heating a powdered material in a sintering furnace to a little below its melting point so that the constituents stick to one another and an object forms. Carl Deckard patented the Selective Laser Sintering technology in 1989 based on his master's thesis at the University of Texas. Like SLA, SLS uses a laser beam – but instead of working to cure a liquid polymer, it uses materials like nylon, metal (alloys), elastomer, thermoplastics (filled with either glass, aluminium or polyamide) etc., in a powdered form.

The platform rests on a bin of the powder. An extremely hot laser draws the two-dimensional bitmap on the first layer of the powder that's on the build platform. As the laser moves over the powder, the particles fuse to form a solid layer. A roller moves over it to level it flat. The platform is then lowered, the powder deposited on the first layer and the process repeated to make a new layer on top of the first. The technique has several advantages when it comes to building smaller models and companies like EOS have exploited these to make dental implants like crowns and bridges.


Sticky sinters

The powder that is in excess - or has failed to sinter - functions as a support material during the process and can be brushed or blown off later.

## Fused Deposition Modelling
FDM was developed by S. Scott Crump, this technology came into the limelight in the 1990s. The unique thing about this technique is that the building material is actually a thin solid filament to begin with. The solid material (usually ABS, polycarbonates, polyphenylsufones, or waxes) is extruded from a spool to a movable head that can be manipulated by servomotors (and this is probably the only thing about 3D printing that can justify


Today's FDS printers are aesthetically designed

the use of the word 'print' when we aren't really printing anything at all). Another secondary nozzle squeezes out a strand of material which could serve as a support structure for the model. The temperature of the platform is much lower than the material's melting point so it hardens on


Charles Hull's breakthrough invention

INTRODUCING THE NEW

**PULSAR 135LS**

'THE ROAD IS MY PLAYGROUND.'

**BAJAJ**
*Distinctly Ahead*

THE FASTEST *INDIAN*

HIGHEST POWER TO WEIGHT RATIO 110.7 Ps/TON | 135CC, 4-VALVE DTS-i ENGINE
POWER 13.5 Ps | 0-60 KMPH IN 5.1 SEC | ELECTRIC START | FRONT DISC BRAKE | www.mypulsar.com

O&M 7185

**Feature**

**DARPA**
3D printers are being used by Pentagon's DARPA to create insect-like wings for very small spy aircrafts – or 'robot-insects'

**HP's history**
In 1939, Dave Packard and Bill Hewlett established Hewlett-Packard (HP) in Packard's garage with an initial capital investment of US$538

contact. Once the entire cross section of the build platform is covered, it lowers to allow the second layer to be formed in the same fashion. At the end of the process, the support parts – which are usually made of soluble materials – are dissolved in a chemical bath.
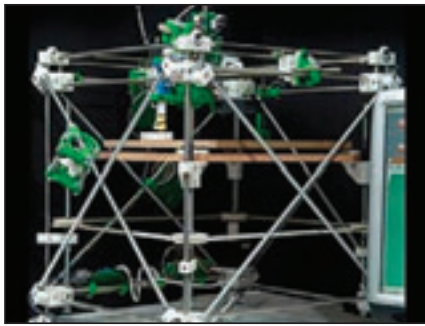

RepRap's FDM printers can be used to print themselves

Layer thickness is typically 0.005 to 0.013 of an inch and usually, the platform size is limited to a 10x10" or a 14x16" size. The process allows for complex parts to be made and is used by the famous RepRap project which specialises in making open-source 3D printers – enabling each and every person to make the printers themselves. What the Walkman did to the stereo music player, RepRap is quietly doing to the manufacturing industry. In fact, RepRap machines (like RepRap's 'Darwin' and MakerBot's 'CupCake CNC') are replicators – in the sense that you can use them to make the machine parts of the printer itself and put them together to make another one to sell to your friends. While they don't look all that great (apparently, only a bare skeletal frame), it's the ultimate in personalised production and has found its way into a lot of homes and academic institutions all over the world.

## 3D printing
While all of the above could be classified as 3D printers, the one that comes closest to our idea of 'printing' is the ink-jet technology, first created at MIT and currently one of the most popular commercial products in this category (eg. ZCorp, 3D Systems, Solidscape inc., etc.) . Like the FDM system, a platform is set in a bin of powder material – depending on the manufacturer, a whole lot of powders are available – starch based, ceramic, thermoplastic or even wax. An ink-jet head deposits a binder onto the powder to solidify the region of the layer as specified by the CAD. This fuses the powder together to create the bottom layer of the model. The platform is lowered and the process repeated until the model is finished. Extra powder serves to support the model and is blown or sucked off by vacuuming it. The excess powder is pneumatically removed and recycled for use in the next project. Then commences a process called 'infiltration'. Any gaps in the material are flaws and must be filled up. The ZCorp machine, for example, treats the model with a secondary resin material – usually a binder or epoxy - that is sprinkled or brushed on the faces of the model. This seeps into the miniscule nooks and crannies, driving the air out of them and sealing the model to give it a stronger and improved finish as it cures.  Models can also be coloured, using technology similar to document printers by converting the PC's RGB space to a


ZCorporation's 3D printers are priced at less than 15,000 dollars

CMYK colour value. Unfortunately, the STL format doesn't support colour and you'll have to resort to others if you want your model painted. Besides, only the outer surfaces can be coloured as the machines are still not that advanced.

## Laminated Object Manufacturing (LOM)
Helisys Inc. (now Cubic Technologies) came up with – and patented - a technique similar to lamination as another way of layering a model into shape. The machine contains spools of paper or plastic, laminated with heat-activated glue. The build process starts when a fresh layer of plastic is glued to the magnetic bed and a layer of glue spread over it. The build platform is usually constructed from paper and a double-sided foam tape but this varies from one printer to the other.

Since the entire space is not required to create the prototype, the machine spreads anti-glue over the excess material surrounding the object so that they can be removed later. Another layer of plastic is rolled out onto the first one. The glue binds them together. The excess material is cut usually using a blade or a laser ( a process called 'cross-hatching'), as per the data of the design programme. The roller presses the two layers together and the process repeats until the object is created.

One of the most popular 3D printing machines is the FabLab project that provides equipment and support to enable students in universities to create prototypes from their designs. The size of the build platform (or 'bed-size') is typically limited to 160 x 200 mm so the models must be divided into smaller parts for greater efficiency.

## Fore-casting
While the technology is still in a nascent stage, estimates predict a market of hundreds of millions of dollars for 3D printers by the end of 2013. Rapid Prototyping has quickly jumped ahead over the last few years and several new buzzwords and exciting new applications are already making the news. Rapid tooling, for example, is a process that uses CAD data to create tools using polymer-coated steel, plastic or a mixture of powdered metal to create tools. Sand-moulding


Laying it on thick

is another off-shoot that can construct large size models by sintering sand-like materials into moulds. Of all the exciting innovations in the field, the following need special mention:

## Cornucopia

If you're really hungry and too tired to cook (or too broke to take-away) here, finally, is 'Cornucopia' - a printer that prints food. Scientist of the Fluid Interfaces Group Media Lab at MIT actually stores and refrigerates ingredients, mixes them and 'prints' the final product onto a serving tray. Though this is at the concept stage, it is an incredible innovation that's going to transform household spaces and


Digital gastronomy

family interaction patterns once it does hit the market. Amit Zoran and Marcel Coelho's machine's algorithm works by first selecting the relevant canisters of stored constituents on top of the machine, feeding them into a mixing chamber and then extruding them in layers of pre-set combinations. A touch-screen interface and internet connectivity augments the cooking process, and allows the user to keep track of the nutritive value and other such details of the recipe. Elementary, my dear Watson.

## Builder's lobby

Enrico Dini – inventor and chairman of Monlite UK Ltd. Has created a massive 3D printer that can make entire buildings out of sand – and we're not talking about beach castles here. 'D-Shape' is a printer that sprays a layer of sand (about 5 to 10 mm each) and, through hundreds of little nozzles underneath, uses a magnesium-


Large scale printing with Dani's D-Shape

based binder to glue the sand into a hard, solid layer of stone, harder than even concrete. This process then works from bottom up to create an entire structure. The invention has been used to create a large, 9-cubic meter structure for a roundabout in Pontedera, Italy.

## Second skin

Scientists and researchers at Wake Forest University in North Carolina have developed a bio-printer that that sprays skin cells on the wounds of a burn victim. The 'printer' is mounted on a frame and set to hover above the patient's bed. It then uses a laser to figure out the extend, width and depth of the burn and sprays out a layer of skin cells. This speeds up the recovery and helps the skin to grow back in about three weeks. Successfully tested on mice, it is an ideal alternative to other, more painful processes like skin grafting and chemical-based medication for burns.

## Tissue culture

3D bio-printers can print more than just skin. Invetech (Australia) and Organovo (USA) have joined forces to construct organs, arteries and almost any body tissue by placing cells in a computer generated pattern using laser-calibrated print heads. The printer lets scientists arrange


Raise your glass to Vitraglyphic

cells of any kind in a 3D shape. It uses two heads – one for the cells and the other to set up support cells as a scaffold. The technology is likely to culminate in machines that could allow surgeons to make human body parts and organs whenever needed.

## Glass printing

'Vitraglyphic' is a technique that makes glass objects from fine glass powder using CAD software and a 3D printer. The brain child of the Solheim Rapid Manufacturing Laboratory at the University of Washington, the printer uses inkjet printing technology to spread drops


Figure it out

of glass powder and fuse them using a binder solution. Glass isn't very good at absorbing water and so must be heated past its fusion point. This is ideal for architects, designers or artists who wish to build scale prototypes in glass.

## Figuring it all out

It's no pipe dream that 3D printers of various types are likely to hit the world markets at affordable rate really soon. Which one of us can resist the ability to visualise an object and actually hold it in our hands within a few hours of the thought. It's amazing that a simple layering process could be developed to the extent that everything from tools to buildings, sculptures to subcutaneous tissues could be 'printed' out by machines in our own homes. Three-dimensional printers are a sign that the future is one of greater personalisation, greater power and perhaps even, the end of oligopolies and an equitable distribution of knowledge, resources and capital.

# worldview

## (MUST READS)

### MARK ZUCKERBERG EXPOSE

Close on the heels of the new Facebook movie about to hit the theatres next month, *New Yorker* profiled its founder mark Zuckerberg. The profile gives insight on the allegations levelled against Zuckerberg and the formation of Facebook
http://nyr.kr/dAj6nM

### DIGG OR BURY?

A New York Times article discussing the rise and fall of social bookmarking site Digg and what it needs to do to get back in the game, which it is slowly but surely loosing to Twitter and Facebook.
http://nyti.ms/a2zauL

### HOW TO RELAX AT WORK

Honestly, no one needs to teach us this skill. But if you're stressed out and your "stomach metamorphoses from a digestive organ into a pit of anxiety", or your "ears start jangling with nerves", here's a hilarious piece on relaxing at work. P.S. It's a Wired wiki so anyone can edit it, making it all the more fun.
http://bit.ly/caKX9A

---

(O'ReillyCorner)

## EXTRACTING INFORMATION THROUGH DATA SCIENCE

There is a lot of data around us on the web. Extracting information out of this infinite data, is what Data Science is all about. Merging data visualization and art, you can come up with brilliant visuals which make sense of the data. Read more on the qualities required to be a Data Scientist...
http://oreil.ly/b5JSvD
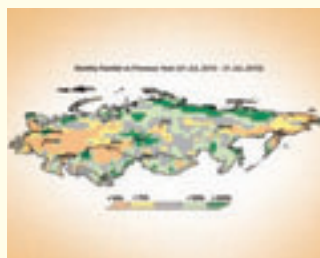
### Predict natural disasters with sensors
A case for using environmental sensor networks, to predict climatic conditions and prevent future natural disasters.
http://oreil.ly/9uRolE

### Building on top of Google Maps
An interesting piece on the state of mapping APIs discussing the various mashups that have been attempted with the Maps application. Features examples of data layered on maps
http://oreil.ly/cR6xbg

### Network Neutrality for dummies
For all those who were confused with the whole Net Neutrality debate, here is a complete article which explains the concept of Network Neutrality. Down with draconian ISPs!
http://bit.ly/9Qo7EQ

### THE BLOGGER GRANNY

Phyllis Greene can hardly take care of herself but at the age of 90, she decided to start a blog. She talks about her near addiction and how technology has brought a new dimension to her life. Worth a read to try and understand the elderly.
**http://bbc.in/ddebD8**

### SPEED TEST: PIGEON V/S BROADBAND

A showdown between the juxtaposed modes of communication highlighted the pathetically low speeds of rural broadband in the UK.
**http://bbc.in/9wcTXu**

### KEYLESS KEYBOARDS

SnapKeys believes that screens were not meant to take inputs. So instead of trying to port qwerty to the screen, they've come up with a system that involves has four invisible keys – two on each side of the device's screen. Worth a look.
**http://bit.ly/dfahfk**

### GOOGLE EMPLOYEES CAN SNOOP ON YOUR EMAILS!

If you've ever had this nagging doubt while using the service, it's not paranoia. A story on The Independent reports how a Google engineer was accessing several accounts including that of a 15 yr old boy. Pervert!
**http://bit.ly/ca6g3p**

# Sandy Bridge: Intel's Next-Generation Microarchitecture Revealed

by Matthew Murray

At this week's Intel Developer Forum in San Francisco, Intel wasted no time revealing the most anticipated technology of the three-day conference: its second-generation Core microarchitecture, code-named Sandy Bridge. It's due for both desktop and laptop release at the first part of next year, but has been generating buzz for months as tantalizing little details have slowly leaked out. When it came to Sandy Bridge, we wanted to know two things: What exactly was it, and was it worth all the hype? The first question has been definitively answered—and we think we've got a good start on the second.

At its most basic, Sandy Bridge is the latest "tock" in Intel's tick-tock develop-ment strategy: the latest iteration of the Westmere-based, 32nm die-shrink of the Nehalem microarchitecture that Intel released at the beginning of the year. They won't fit the LGA1156 socket those chips use, however—they'll need a new one, LGA1155, which will be released on motherboards using the new Series 6 chipset at the same time Sandy Bridge CPUs are released.

But beyond all that, Sandy Bridge is really about unity. Yes, it finally brings the memory controller, PCI Express (PCIe) controller, and video functions within the processor die, which by itself is an enormous change that has major performance repercussions. But it also strikes up a much clearer parity with the modern computing world: finding new ways, for example, to take advantage of large numbers of processing cores (neces-sary, as Intel released the first consumer-oriented six-core processor earlier this year), and use less power to do everything.

Most users won't notice these changes, but many of them are substantial ones that could be setting the ground for even more exciting developments to come. Read on for our look at what's going on in Sandy Bridge, and what benefits it may hold for computer users and builders starting in 2011.

## Front end features

Two of the major changes that Sandy Bridge introduces come right at the front end: a new decoded micro-operation (uop) cache and revamped branch prediction.

## Micro-operations and AVX

Sandy Bridge now treats where you want to store data and what data you want to store as separate functions. (Intel began imple-menting this idea in Nehalem.) When an instruction is decoded, the uop cache checks to see whether it's already cached. If the instruction is, the cache shuts down the rest of the pipeline and the front end. If it's not, the instruction is cached; the cache can store up to 1,500 instructions, and is direct-mapped for easier access. If an instruction hasn't been used in a while, it's discarded once additional space is needed. Because the uop cache has marginally higher and more consistent bandwidth than the instruction cache, this one-two punch has a significant impact on both power and performance.

In addition, the use of a new physical register file instead of a centralized retire-

### POOP POWER!

Matthew Mazzotta is using Dog Poop to power the lights in a Massachusetts city park. Since dog owners anyway have to pick up after their pets, all they have to do is dump it in the the digester – an air-tight cylindrical container, where the dog faeces are broken down by anaerobic bacteria, and then used to give back to the grid.

http://t.co/9fjkkSM

### ANDROID GAINING GROUND

According to comScore, Android gained 5 per cent market share in the US for the period of April to July 2010, while all other smartphone platforms declined. Even after the recent launch of iPhone 4 the iOS market share declined 1.3 per cent. Where have all the fanboys gone? One crappy antenna and you desert your favourite fruit?

http://usat.ly/cqdw89

### BOEING FOLLOWS VIRGIN GALACTIC INTO SPACE

"Please ensure your spine is in the stiffened position and your fears of hurtling towards the stars are stowed for take-off. Any passengers not planning to visit the Space Station today should disembark now." Full coverage - NewZeland Herald. Still not affordable for any of us though.

http://bit.ly/cnSPec

---

ment register file reduces the need for large, complex out-of-order execution hardware. The physical register stores operands, so that uops only carry the pointers to the operands they need—a much lighter load. The savings here enable the use of Advanced Vector Extensions (AVX) instructions, which can use operands up to 256 bits in size and borrow 128 bits of the now&ndash256-bit integer SIMD path, enabling twice the floating point throughput. (A look at the specs of the new physical register file is below.)

Because this increase in floating point performance introduces new demands, the memory cluster has been changed as well. There are now two load/store ports, and Sandy Bridge uses symmetric address ports so that each port can service a load or store address, resulting in double the load bandwidth. According to a presentation held Monday at IDF, this is the Sandy Bridge change that most increased performance: It results in a total of 48 bytes per cycle internal memory bandwidth.

## Branch prediction

According to Intel, branch prediction is one of the most effective ways to increase processor performance, which is one of the reasons it's tweaked with almost every new CPU release. Sandy Bridge introduces a few changes that improve its accuracy even above the 5 percent usual increase.

First, it offers more targets. In a standard branch predictor, branches are marked as "taken" or "not taken" with either "strong" or "weak" confidence. Intel representatives say they discovered that most branches predicted using that method, however, were marked with "strong" confidence, which diminished the accuracy of those predictions. With Sandy Bridge, Intel is moving to using one confidence bit for multiple branches, thus increasing the potential accuracy of any given one.

Second, branch targets were also changed, so that it's no longer a "one size fits all" situation. Instead there is support for multiple target sizes so that less space is wasted, the CPU can track more targets, and prediction speed can increase.

Third is the increase in the use of history bits, so that branches that need to look at long patterns of instructions and those that need to only look at shorter branches won't be grouped together.

## One ring to unite them all

Zooming out, it's much easier to see one of Sandy Bridge's biggest innovations: uniting almost all of the major subsystems within the processor die itself. That's where you'll find the memory controller, the PCIe controller, and the graphics controller (which also use 32nm transistors—but more on them later). Because everything is snuggled so closely together, the processor needs a way to make sure everything gets along, using the available resources without utilizing too much power.
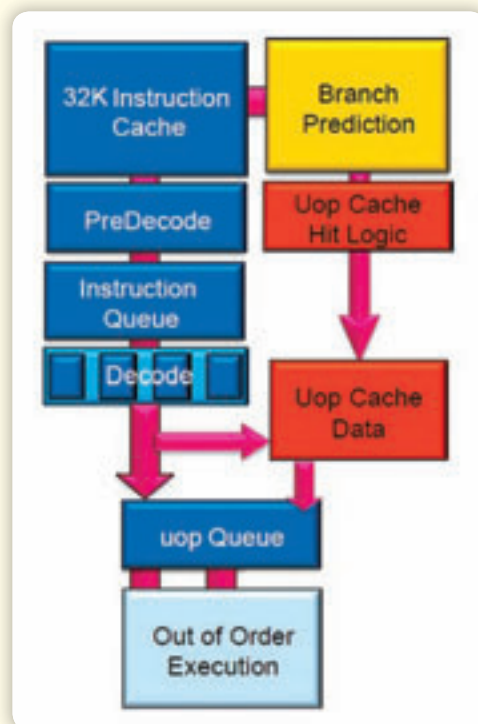


In Nehalem and Westmere, all cores had their own private path to the L3 cache. Sandy Bridge uses a ring-based interconnect, similar to the one used in Nehalem-EX and Westmere-EX, to link the cores, graphics, last level cache (see below), and System Agent. It contains four rings: the 32-byte data ring, the request ring, the acknowledge ring, and the snoop ring. They're all fully pipelined, so as the core count and cache size increase, so will the bandwidth to the cache. (This means it can also scale to servers using large numbers of processors.) As it's passing around the ring, data will always take the shortest path to minimize latency. Distributed arbitration and a sophisticated ring protocol handle coherency, ordering, and core interface issues.

| Element | Nehalem | Sandy Bridge |
|---|---|---|
| Load Buffers | 48 | 64 |
| Store Buffers | 32 | 36 |
| RS - Scheduler Entries | 36 | 54 |
| PRF Integer | N/A | 160 |
| PRF float-point | 160 | 144 |
| ROB Entries | 128 | 168 |

## Last level cache

The last level cache (LLC) is shared by the GPU and a special video transcoding engine, and has less latency than we saw in Westmere. It also runs at the core clock speed, which means it's going to be a lot faster than it's been previously. (At least under most circumstances. If the processor cores are downclocked for whatever reason, the LLC will be as well.)

Each core gets its own portion of the LLC (although each core is capable of addressing the entire cache as well), with each portion having its own stop on the ring and a full cache pipeline. This is different from Westmere, in which one cache pipeline was shared by all the cores. According to Intel, the multibanked LLC cache can deliver up to 384 Gbps on a four-core system or 192 Gbps with two cores, with short access latency.



The LLC is logically shared among cores, graphics, and media, with the graphics driver controlling which graphic streams are cached and are coherent. (There are mechanisms in place to prevent thrashing between the core and graphics, and multiple coherency domains for power optimization and anti-snooping purposes.) Because this reduces DRAM accesses, this frees up DRAM bandwidth for the cores and lets the DRAM utilize less power.
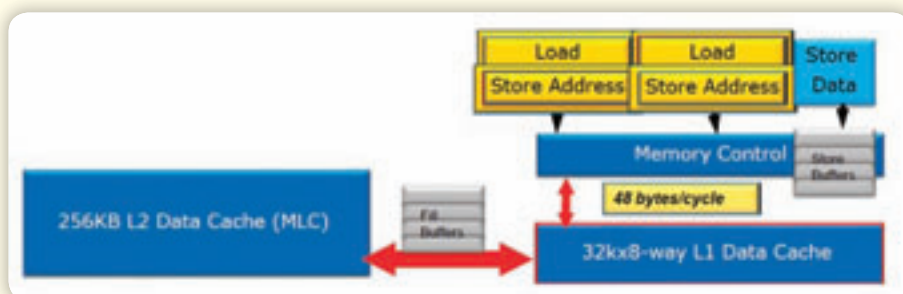
## System agent

The System Agent (formerly known as the uncore) offers a number of features and providing extensive power and thermal management for the PCIe and DDR controllers. The PCIe x16 lane may be split into two x8s, if desired. There's a redesigned dual-channel DDR3 memory controller. And the System Agent also contains a Power Control Unit (PCU), a programmable uController that handles all the power management and reset functions within the chip. The System Agent is fully integrated with the ring, and helps provide the cores, video, and media processing with higher bandwidth and lower latency. It also handles IO-to-cache coherency, and operates on a separate voltage and frequency from the ring, cores, and display.

## Improved integrated graphics

One of the Sandy Bridge changes that received the most discussion at IDF was its new graphics hardware. Intel says its goal was to increase the performance of the graphics while maintaining the same socket power, and in order to make that happen the company had to make a "radical departure" from what it was doing before. One Intel rep even said that the change in graphics approach was responsible for the biggest power savings in any part of Sandy Bridge.
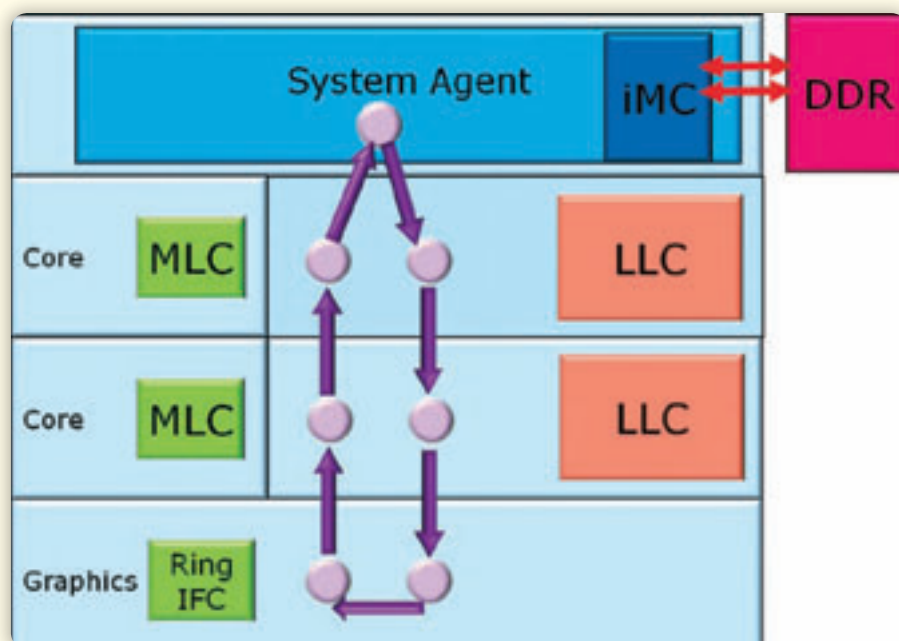
### THE PAIN OF WATCHING NON GEEKS USE A COMPUTER...

A must see comic for any geek
http://bit.ly/9GzlBw

### ALL PIRATES ABOARD THE IPAD!

With the new VLC player app now available for the iPad, you can play all your media content on it. It can be anything from an AVI to an MKV file format, giving you the freedom to watch all your downloaded stuff, yes even the illegal ones. The iPad supported the Quicktime format (.MOV) till now, until the VLC app came into the picture rescuing all the .XVID and .DVIX files.
http://bit.ly/byDxAh

### TWITTER IS ONLY FOR NEWS AND CONTENT PLEASE...

Kevin Thau, VP business and corporate development for Twitter has acknowledged that the micro blogging site should not be considered as a social networking place. Rather its meant for breaking news and other useful content posted through tweets. Point taken, but then what about all the idiotic minute to minute nonsense?
http://rww.to/bxx9bi

The majority of Intel's changes come from the philosophy that anything that could be done as a more efficient fixed function would be. So at every point in the 3D pipe where a fixed function is assumed, there is an explicit fixed function—this improves throughput per watt, reduces latency, reduces complexity in the driver programming model, and "lets the shaders do shaders" (in Intel speak). Intel says it has found the optimal balance of fixed function to compute within the GPU.

Everything being on the same chip has made it possible to dynamically shift power around as it's required—and that benefits the graphics as well. (This helps deal with the problem of some programs swallowing up CPU cycles, and others pegging the graphics.)

The GPU is constructed of the same 32nm process as the CPU cores themselves, which gives it a performance boost right away. It's also got its own power and clock planes: It can be powered down or clocked up independently of the GPU depending on the demands of the workload, and it can Turbo Boost on its own as well. Perhaps most importantly, the video has equal access to the LLC, and it's all controlled by the video driver. (One Intel rep said that putting the video system behind the LLC was the single biggest change in Sandy Bridge.) This reduces the number of trips to the main system memory, which put greater demands on both power and performance.

The programmable shader hardware (shaders, cores, and execution units) are composed of execution units (EUs). They contain larger register files for increased parallelism and efficient complex shader execution, a second generation parallel branch for efficient parallelization in the face of deeply nested conditionals, and new instructions to reach 1-to-1 with API
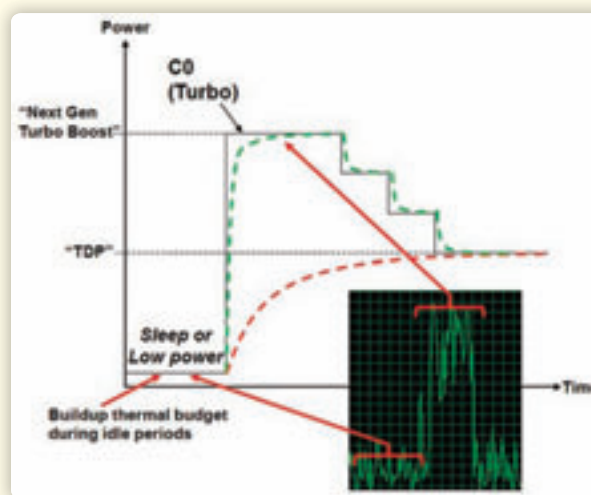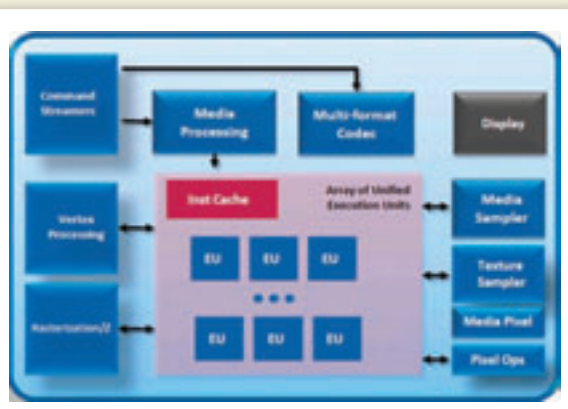






ISA (CISC) and higher throughput at same clock rate.

The EUs also handle transcendental math using hardware that's been updated for improved performance over the last-genera-

tion of Intel HD Graphics—four to 20 times as much, by Intel's reckoning. Also, whereas previous graphics architectures repartitioned the register file as needed to make the most out of smaller numbers of registers, Sandy Bridge's GPU has a fixed 120 registers per thread. Intel estimates that with all of these changes, each shader unit will be able to deliver double the throughput of those currently used.

Driver overload has been reduced as well. All orthogonal states, re-jit, and shader management have been removed by the use of fixed functions. This all has the side benefit of freeing up CPU load to redirect power to the graphics.

Two versions of Sandy Bridge's graphics will be available when the hardware launches next year: one with 12 EUs (for all laptops and high-performance desktops), and one with 6 EUs (for lower-end models).

Sandy Bridge graphics will support OpenGL 3.1 and DirectX 10.1 – not DX11.

### Future-focused media processing

In separate recognition of how important media consumption has become, even to (or perhaps especially to) those in the mainstream

market at whom Sandy Bridge is aimed, Intel will be packing the processors with an array of new media capabilities implemented with what the company calls a more easily programmable and flexible architecture.

These include dedicated hardware accelerators for tasks like high-quality video scaling, denoise filtering, deinterlacing, and film-mode detecting; the ability to hand more computes for processing high-definition workloads; high-quality enhancement techniques and filters for detail and adaptive contrast enhancement, and for total color control; native support of mainstream codecs like MPEG-2, VC1, and AVC, and technologies like stereoscopic 3D Blu-ray; and parallel engines that deliver high-throughput video rendering.

The EUs (shader units) are being optimized for the types of media expected to drive the next generation, and Sandy Bridge developers have worked to attain "parallel compute synergy" with the graphics processing hardware. This was done by more efficient media computation through low-power integer operations, more efficient vector/matrix ISA, and cooperation with the hardware accelerators. There's also language support for explicit parallel programming.

The result, says Intel, is that you can do all this faster while using lower power (and thus saving battery life on a laptop—an increasingly vital concern in a laptop-heavy computing world). Intel says processor power is cut in half for HD video playback, that most media applications consume about 30 percent less power at full rate than if they were using typical 3D, and that CPU-style power management achieves faster transition between power states

There's one potential down side to this: If you add a discrete video card to computer, you will lose all these added media capabilities. In some ways, that makes sense—after all, you generally lose access to integrated graphics capabilities when you're using a video card. But if the card you choose doesn't offer comparable media-management capabilities, you may want to seriously consider your own needs before you upgrade.

## Turbo boost: boosted

One of the smarter innovations of recent Intel processors was Turbo Boost, which automatically increased the performance of certain cores by turning off others that weren't in use, assuming the electrical and thermal headroom were available. There's just one problem with this way of doing it: It assumes that the CPU reaches its maximum TDP immediately once turbo is enabled, while in actuality the CPU takes a little while to heat up.

So in Sandy Bridge, the PCU turbos active cores above the TDP for very short periods of time (up to about 25 seconds, according to Intel), stepping down gradually as the processor heats up until it finally reaches the real TDP. Because the PCU also tracks the available thermal budget when the system is idling, it can spend it once CPU demand increases. (Like current Turbo Boosting, however, the PCU will not allow the chip to exceed any hard reliability limits.)

## Conclusion: a bridge to the future?

It's impossible to say right now whether Sandy Bridge will live up to Intel's extravagant claims for it—we still have a few months left until it's released, and a lot can happen in that time.

But based on what we've seen and heard so far, we're intrigued. It looks like Sandy Bridge doesn't just build on Nehalem's innovations, but it also expands into directions we hadn't previously considered. Intel's techniques for dealing with the on-board graphics (particularly media processing) and the revamped Turbo Boost strike us as particularly exciting changes, and we can't wait to see how—if?—they pan out in the real world.

We want to reserve most of our judgments until Sandy Bridge is released, but we have a few qualms. First, we find it a bit odd that the CPUs will support only DX10.1 graphics and not DX11 out of the gate. Considering that DX11 will have been out for over a year when Sandy Bridge is released, this seems like a significant oversight—and it's one Intel can count on AMD hammering at every opportunity, especially given that its own Fusion APUs will be out around the same time.

It's also a little disappointing that, in order to take advantage of all of Sandy Bridge's enhancements, owners of computers with the previous mainstream next-generation socket, the LGA1156, will have to upgrade yet again, to the LGA1155. So much of what Sandy Bridge brings to the table has the potential of really benefiting mainstream users—it's too bad owners of current (and, let's face it, recently purchased or build systems) won't just be able to pop in the new chips.

Of course, these could all be moot points if Sandy Bridge proves to be so spectacular as to be worth the upgrade. And for that, again, we have to wait—as do enthusiasts, who won't be reaping the benefits of early adoption this time around. Intel is taking a lot of surprising chances, and making a lot of daring choices, with Sandy Bridge, and seeing whether they pay off—and how they compare to AMD's own ideas about uniting formerly disparate technologies on the same processor die—is already poised to be one of the most exciting tech events of early 2011.

# (worldview)

In one of our aimless wandering across the vast landscapes of cyber space we came across this nice picture gallery. A 100 plus minimalistic movie poster redesigns were showcased. Some of the most famous movies ever were revealed in the most simple yet attractive manner. Most of the posters are so innately clever you can't help but smile. Make sure to check them out by pointing your browser to:
http://bit.ly/bCrNrv

## DO YOU LIKE THE WORLD VIEW SECTION?

With our new World View section, we're trying to expose you to more international stories and culture. Instead of just a list, we hand-pick the stories we think you'd like. However, in order to ensure that we're doing a good enough job, we'd love to hear your feedback and comments.

## IF YOU LIKE, HATE, SKIP OR ABSOLUTELY LOVE THIS SECTION, LET US KNOW.

Send in your feedback to editor@thinkdigit.com

# (PRODUCT LAUNCHES)

## HTC DESIRE Z

The HTC Desire Z now sports an innovative pull-out keyboard beneath an impressive 3.7-inch capacitive touchscreen, and that's not all, it also features new additions to the Sense UI.
**http://bit.ly/aYik06**

## NIKON D7000

Nikon D7000 is the new upgrade to the D90 and D5000 cameras. It features a 16.2 MP CMOS sensor, 1080p video recording, a new EXPEED 2 image processing engine among other features.
**http://bit.ly/8YjQCj**

## IPOD TOUCH

September 1 saw the launch of the new iPod Touch featuring a 5MP camera capable of doing FaceTime over WiFi and iPhone4's Retina Display. Almost a smartphone isn't it?
**http://bit.ly/bKFW7P**

# CROSSWORD
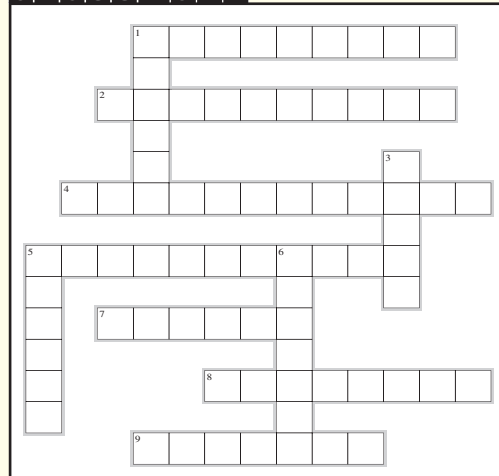
## ACROSS
1. What is this?
2. Adobe's browser compatibility testing service
4. Running a computer component at a higher clock rate
5. Successor to Nehalem
7. An HTML5 element that allows scriptable rendering
8. India's $35 tablet
9. The once P2P music sharing service that turned paid

## DOWN
1. It's a browser and a netbook OS bearing the same name
3. Picture Element
5. Google Labs feature gives auto suggestions as you type
6. Google's search service designed to shave 2-5 seconds off your search

## ABSOLUTE TIMEPASS

# Top 3 YouTube Picks

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

**http://bit.ly/a0B5lX**
2 min 18 sec
Nokia introduces N8, also has three new touchscreen phones C6, C7 and E7.

**http://bit.ly/9gSCo6**
2 min 0 sec
Yonder Biology is turning **DNA into a works of art**, along with a picture of your choice.

**http://bit.ly/9AYaJv**
7 min 56 sec
**This android does more than just fighting crime.** Check out his moves and be amazed.

# Stop Before You Shop

Team Digit
*feedback@thinkdigit.com*

## CONFOUNDED PHONES

Although India entered the cell phone party late, figures by the Telecom Regulatory Authority of India (TRAI) peg the number of mobile subscribers at a whopping 653.92 million users (as of May 2010).

Also, mobile devices sales in the country is expected to reach 138.6 million in 2010 which is an 18.5 per cent increase over 2009 sales, according to market research firm Gartner. You can purchase a phone for as low as ₹2,000 to as high as ₹40,000. Then, how do you go about making the right purchase decision?

**This festive season, we're going to help you spend your money wisely.** Whether you're buying a little cell phone or a massive HDTV, be sure to spend wisely, and arm yourself with the information on these pages.

### THE TECHNOLOGY: 3G
BSNL and MTNL have already started 3G services whereas the other players have given a January 2011 launch date. We wouldn't suggest you wait for 3G services to roll out and then consider buying a handset. Go ahead, buy a 3G enabled phone. The services provided will have nothing to do with your handset. And may we add, according to Bharti Airtel CEO Sanjay Kapoor, 3G services will not be cheap by any standards.

### Operating systems
The other technical aspect of cell phones that has gained prominence in recent months is the underlying operating system. A couple of years ago, very few people knew what operating system their cell phone was running. Every third person was buying either the Symbian-based Nokia phones or other phones running a firmware. Then there were the proprietary OSes from iPhone and BlackBerry.

## Fujifilm FinePix X100

FujiFilm Finepix X100 to launch by March 2011 with an approximate price of Rs. 48,000 ($1,000); the camera includes a 23mm f/2 fixed lens

The mobile OS game changed forever with the launch of Google's Android. These days, mobile operating systems play an important role in mobile purchasing decisions. Right now we have Android, iOS, Symbian, bada, WinMo and BlackBerry with Windows Phone 7 and MeeGo to arrive soon. So which is the best operating system?

There can't be *one* answer to that question, as the user experience with each OS is completely different. According to Gartner, as of August 2010, by the numbers Symbian leads with a 41.2 per cent global market share, followed by Research In Motion's 18.2 per cent with Android at third spot with a 17.2 per cent share. In comparison, Apple iOS has a market share of 14.2 per cent. If you compare these market shares with last year's, a surprise winner emerges. Symbian market share has dropped by 10 per cent, whereas Android's share has increased by a whopping 15 per cent. Android is the hot seller right now and it makes sense to purchase a phone having this OS. Frequent updates on the Android OS may keep some users away from it, but anything above Android 1.6 is quite good. You have to be very sure which version of Android your phone will support, whether updating to the newest version is easy. bada is the new kid on the block from Samsung and is presently available on the Samsung Wave.

### Applications

One of the main considerations while opting for a smartphone based on its OS, is the number of applications the OS supports. Apple leads with its App Store having over 2,50,000 apps followed by Android's marketplace having over 2,00,000. As compared to these two behemoths, other operating systems have comparatively lesser apps, which is another factor pushing people

Android Mascot

towards the iPhones and Android based phones. bada being relatively new, still has a lot of catching up to do as far as number of applications go. With time the applications segment will just grow. With MeeGo and Windows Phone 7 OS coming up, it will be party time for app developers with so many operating systems, for which apps can be written.

### THE HYPE: Dual SIM entry-level phones

The entry level dual-SIM market in India is exploding at an unprecedented rate. These phones come in a range of form factors and pretty much most of the phones come with the same feature-set that high-end phones from big manufacturers usually ship with. Quality, however, is questionable at times. If you're looking for a phone that can play music, take OK pictures and video and is priced at under ₹5,000, you may find these phones irresistible.

Companies such as Micromax, Karbonn, Lava among others who comprise the *crème de la crème* of the entry-level dual-SIM market have a combined market share of 14 per cent according to a Voice and Data survey.

But before hurrying up to book that dual-SIM phone, sit back and ponder on these points : Am I really going to use two separate numbers? What about the cost incurred on two separate phone plans?

Dual SIMs make sense for individuals who travel a lot. Say for instance, you are working in Delhi, but your hometown is in Hyderabad. Also your work requires you to be in these cities for longer durations. Then having a Delhi SIM and a Hyderabad SIM in one phone makes sense as you will be able to receive calls from both regions and won't have to carry two phones or keep switching SIMs. Also dual-SIM phones make sense for individuals who plan to have two separate numbers for personal and office use.

Rise of Apps

**Tried & tested**

**15.3MP Sigma SD1**
Sigma launches 15.3 MP CMOS sensor camera
which lacks video shooting capability

**Panasonic Lumix GH2**
Panasonic Lumix GH2 features 16 MP, LiveMOS
sensor, 3-inch LCD, 3D interchangeable lens and
also 1080p video recording

## Touchscreen

Touchscreen phones are flooding the cell phone market like never before. Thanks to the rise of smartphones, the importance of touchscreens has amplified. Samsung Corby series broke the glass ceiling of ₹10,000 with its affordable touchscreen phones paving the way for more handset manufacturers to come out with their version of affordable touchscreen phones. LG's Cookie series also have a range of touchscreen options. However, do not confuse these phones with smartphones as they are not. These phones are feature-rich phones. It's safe to say that you should opt for capacitive touchscreens over resistive ones. Resistive touch response will deteriorate over time and reach a point where you will actually have to press the phone screen hard to register a response. If the phone requires the use of a stylus, we would recommend that you avoid it altogether.

HTC and Apple phones have amazing touch response. It is high time Nokia also switched to this technology as we really don't know how it expects to compete on user experience with resistive touch screen phones. As of date, Nokia just has the X6 with a 3.2 inch capacitive touch screen.

A lot of the entry-level phones also come with touchscreens, but the experience leaves a lot to be desired.

Those of you who are used to a QWERTY keypad, be careful before opting for a touchscreen phone without a keypad. Expect your typing speeds to take a hit. Look for slide out keypads instead. The Motorola Milestone is a good phone in that respect, so is Sony Ericsson Xperia X10 Mini Pro .

## Processor

These days, you've started expecting your phone to do things that only your PC used to. Thus the importance of the processor performance increases. For a high-end smartphone the processor should have a minimum of 800MHz rating – 1 GHz is ideal. This also makes your handset future proof.

## Display technologies

Phone displays also add a dimension to the overall user experience. Off late, AMOLED and Super AMOLED displays seen in Samsung phones are the talk of the town. Samsung Wave sports a Super AMOLED screen which really enhances the quality of the display. Since AMOLED technology does not use backlighting, the blacks are jet black, thus giving more vivid images and better contrast than standard LCD technology. HTC which had the AMOLED screen in some of its handsets (HTC Desire for instance) will soon switch to Sony's Super LCD (SLCD) display technology due to shortage of AMOLED screens from Samsung (which is understandable considering Samsung will give first priority to its handsets). Comparing these two technologies, it is not easy to pick a winner. AMOLED has a headstart with many phones using this technology available in India. SLCD is yet to make an entry here.

As of now, the phones sporting AMOLED and Super AMOLED technology are expensive. For sub-₹15,000 phones you will still have to stick with LCD technology. The newer display technologies are ideal if you consume a lot of multimedia on your phone and want the best visual experience possible.

## BUSTING MYTHS

Marketers are known to use a lot of jargon to sell their products. So let us try to see just how important some of these really are.

**Push mail:** Using this feature allows the service provider to push emails directly to you, without you having to poll the email provider each time to check if new mail has arrived. Currently, BlackBerry, Nokia  Messaging Service and MobileMe for the iPhone are ways in which you can avail this service. Recently, a Bangalore-based firm came up with BlacMail, which basically

Samsung Wave sports the Super AMOLED screen

provides push mail services for BlackBerry me-toos.

Opt for push mail only if you are a professional and constantly need to access your mail accounts. Not a feature for leisure use. BlackBerry is the undisputed leader in this category, but recent government rulings have got people thinking. We're not worried though, because India is too big a market for BlackBerry to lose. Sure, you might lose out on some privacy, but you will still enjoy all the features. Even after the matter is settled, you will still have the same amount of privacy that you can expect from other services. Nokia is also aggressively marketing its service as a mass-based option.

**Wi-Fi:** This is a desirable feature, but there are some points to be noted. You're most likely only going to use this feature at home, in office, or  at the occasional coffee shop or airport. It's not like we have an India-wide, or even city-wide network that you can rely on. Unless absolutely essential to you, don't pay extra for this feature when choosing a phone.

**A-GPS:** Another desirable feature if you are going to use a lot of apps which need you to share your location or find your way. Make sure your mobile provider supports this.

**Front-facing camera:** This is a completely useless feature if either you or the person you're calling are not on a 3G network that supports video calling. You could use it to set your hair, but it's not something you should pay extra for.

**ebook readers:** Only makes sense if the screen is large – tablet sized almost. Otherwise, it's just another feature

# Life is easy when there is so much to choose from.

**LIC presents a range of conveniences for premium payment. Just take your pick!**

## Pay premium

At any LIC Branch/Satellite Office

Through Bill Pay

Online through authorized collection centres

Online through empowered LIC Agents and Sr. Business Associates

Through ECS

Online at www.licindia.in

For more details visit our website www.licindia.in, any LIC Branch or LIC Infocentres* (call 1251)

*At select locations

LIC/32/ENG/09-10

**LIC**
भारतीय जीवन बीमा निगम
**LIFE INSURANCE CORPORATION OF INDIA**

www.licindia.in

**JVC EX-S1 dock**
JVC launched its EX-S1 iDevice dock which is part of the Wood Cone lineup, it includes a USB port and auxiliary inputs

**Leaf Aptus-II 12**
The Leaf Aptus-II 12 priced at $31,387 clicks 80 million pixels images; it also has a 3.5-inch touchscreen and click photos as large as 480MB in size

that doesn't really work too well, and is more likely to drive you batty than be any fun.

**Social network integration:** This is very popular now, and makes complete sense if you have a mobile internet plan. For those of you who don't use GPRS or EDGE, completely pointless.

## RECOMMENDATIONS

Entry-level, dual-SIM phones which are all the rage nowadays are meant for users looking at extremely budget friendly phones with a decent feature set. Videocon Qruz V1430, Intex IN 6633, g-Fone 565 (The *Digit Best Buy* winner) are some of the phones we would recommend.

Rising above the entry-level market come the feature-rich phones meant for budget buyers, which include the range of teeny bopper phones such as the Samsung Corby Pro or LG Cookie series phones. They are available under ₹10,000 but they have resistive touchscreens which will deteriorate over time.

Operating system considerations make sense in the case of smartphones as here apart from productivity the feature set is also of prime importance. But with sub-

Samsung Corby Pro

₹10,000 Android phones starting to flood the market we would advise you to wait for a couple of months. As of this date if you want a good Android phone, you will have to increase your budget to around ₹15,000 to ₹25,000. HTC has great offerings in the form of Legend (₹24,000), Hero (₹21,000), Wildfire (₹16,000). Samsung recently came out with Galaxy 3 (around ₹12,000). Also the Sony Ericsson Xperia Mini Pro

(₹16,000) is a decent buy. At the higher-end segment you have the HTC Desire, Sony Ericsson Xperia X10, Motorola Milestone and Samsung Galaxy S. Waiting a few months is not going to drastically affect the price points as each handset manufacturer has stripped down versions of phones (HTC Wildfire for HTC Desire or Sony Ericsson Xperia X10 Mini Pro for Xperia X10). But before buying the phones, check the Android version. Most higher-end offerings should have Android 2.2 and a 1 GHz processor. Look for a higher internal memory capacity, as some phones do not allow storage of apps on the memory card.

BlackBerry phones are ideal for business use, but do not expect a wide variety of apps. For first time users the BlackBerry 8520 is quite affordable at around ₹12,000. BlackBerry is the gold standard as far as QWERTY keypads are concerned, so it is best to stick with that. BlackBerry has acquired Cellmania recently, so if you are a heavy applications user and want to switch to BlackBerry, it would make sense to wait a bit to see how the new apps come along. Also, prices may come down by 10 per cent or so.

Apple iPhone users or aspiring iPhone users are eagerly awaiting the launch of iPhone4 in India. Expect to shell out in excess of ₹40,000 for it though. There's a lot of hype around iPhones, but we expect Android phones to cut this down to size. Unless you absolutely must have an iPhone4 at all costs, we'd recommend that you take a good look

HTC Desire

at the Samsung Galaxy S. Although we'd all but forgotten about Windows Mobile phones, Windows Phone 7 OS has sparked our interest again. With features such as Xbox Live allowing you to sync your Xbox 360 with the phone, there's some promise there. However, since the OS has only been seen on prototypes, we don't recommend that you hold your breath or halt your buying for it.

## LASCIVIOUS LAP-MATES

Get that mind out of the gutter, this is Digit. When we use lecherous language, we're almost always talking about gadgets.

This holiday season, thousands of you will set forth into the markets, drooling over laptops with a wad of cash (or plastic) in your hands. The problem is, if there's one category where you're completely spoilt for choice, it's this one. There are so many brands and so many models to choose from that you're bound to go crazy. We should know, we can barely keep up with testing one generation when another is launched. Only cell phones are more confusing to buy, but since you're spending considerably more on a notebook or netbook, making the right choice becomes all the more critical here.

### Note or net

To start with, one of the most common questions readers ask us is "netbook or notebook?" It's a very hard question to answer if we don't know you. It all

**Tried & tested**

**TerreStar Genus**
TerreStar launches a $799 Windows Mobile based phone called Genus; the phone has GSM backed with satellite capability

**Blue Mickey**
Blue Mickey is a condenser mic which is powered by AAA batteries which can charge cameras as well; it will hit the market next year at a price of $69

depends on your daily usage scenarios, and what it is you're looking for. If a smaller screen and keyboard don't bother you, and if you're looking for longer battery life and more portability, a netbook should suffice. If you need a larger screen, and care more about PC performance than battery life, opt for a notebook. However, it's also a question of budget more often than not, and sometimes, all you can afford is a netbook!

Understanding the Atom CPU will help you make the choice if budget is not the major problem. The Atom may be capable of playing HD video (720p), but the screens on a netbook rarely support the resolutions you want. So forget about all that and think simplicity. If all you do is work on the occasional presentation or office document, and surf the net, you might not need anything more than a netbook. Forget about gaming, forget about anything more than DVD-quality video, and forget about being able to use optical media (DVDs/CDs). If you rarely use any of those anyway, get a netbook. For everyone else, a notebook is the solution.

### THE TECH: AMD, Core i, Core 2 – confused, aren't you?

When it comes to laptops, the most hyped of all components are usually the CPU and the GPU – with good reason of course, since these are the star performers in every PC; portable or otherwise. However, just because a laptop has a CPU brand you've seen advertisements of on TV doesn't mean you're getting a good deal. The smartest thing to do is to find out which Core i, Core 2 or AMD CPU the laptop you're considering has. Never, and we repeat with emphasis, NEVER, go out and buy a laptop on your first outing. With so many model numbers and series from every manufacturer, it can all be very confusing. Just a letter extra at the end of a model number, or a series name being used instead of an actual model number could see you end up with something you're not happy with. Window shop, carry pen and paper, write down what you see, note exact model numbers and do your research on the model before you spend a single Rupee. Don't just look at models from one brand

either, keep your options open by looking at the offerings of at least three brands whose products you like and trust.

Also remember that certain PC and notebook versions of CPUs have the same model numbers – with just an "M" or some letter added somewhere to denote the notebook version, which actually consumes much less power, and performs much slower too. So watch out for that when looking up benchmarks online, and always make like-to-like comparisons.

As for GPUs, just re-read everything above and mentally replace CPU with GPU.

### Out damned spot!

The bane of our existence, batteries have improved over the years, but barely enough to keep up with everything else. These are the proverbial spoil-sports, and honestly, take it from us, if you're planning long trips away from plug-points, and need to compute, get yourself some extra battery packs – netbooks, notebooks, tablets, smart phones, whatever, nothing is safe from the low battery monster when you're travelling. However, make sure to check rated battery times from reviews of the same model before you buy. It's always nice to boast of

### SERIES UNLINKED

Let's say Digit sold laptops, and we had a dGt 1000 series notebook. Now although we may have three actual models under this series – the dGt 1001, 1010 and 1100, we might choose to follow in all other manufacturer's footsteps and sell them all as the "dGt 1000" series. Of course we'd only ever advertise the features of the most powerful one – the dGt 1100 – and make sure all three models look identical to the untrained eye. Now, if you were to mistake our lowest model (the dGt 1001) for the 1100, that's hardly our fault, is it? So what if you thought you were getting a Blu-ray ROM drive and ended up with a DVD-writer? It's not like we didn't write the specs in fine print, and we can hardly be blamed for your poor eyesight and bad decision-making!

Although we were just having a bit of fun in the previous paragraph, you will not be if you cough up in excess of thirty thousand and end up with something other than what you paid for.

high processing powers on your laptop, but if you can't get through a presentation or a long email without hooking it up to the mains, what is the point?

### Ooh, shiny!

A lot of the laptops you'll see in malls have lovely shiny screens that can double as a mirror when they're off, but unfortunately, sometimes they can do the same when they're on as well. The advantage of a glossy screen over a matte one is that the glossy one, in the right conditions, will offer a better contrast ratio. This is usually good for when you're watching a video, but not when you try and do it in brightly lit conditions. You'd be lucky to see a thing if you're outdoors under direct sunlight if you have a glossy screen. What you need to do is decide based on your own usage, and if it's mainly indoors in dimly-lit conditions, choose a glossy screen, if it's mainly outdoors in the day, choose a matte-finished screen. Also, remember to check the resolution of the screen – very often you might be asked to pay more for a 13-inch screen that has the same resolution as a 12-inch. It's important that you get the highest possible resolution for your desired screen-size. Think HD! Trust us, you won't regret it.

### RAM? HDD?

A lot of people ask us why their PCs are running slowly despite having 4 GB of RAM. Well, honestly, your laptop is only as fast as the slowest component. With a slow hard drive, there's only so much RAM can do to help speed things up. If you're not really bothered about battery-life, choose a 7200 rpm HDD, and at least 2 GB of RAM for your configuration. SSDs are also recommended for those who don't want loads of storage space. More than 4 GB of RAM has rarely shown us any significant performance improvements, so there's no need to go there, especially if you're running a 32-bit OS!

### Keyboards and track-pads

The most important and yet the most over-looked parts of a laptop are the keyboard and track-pad. Cramped keyboards or those who have decided to be innova-

# Should you **ask** for **change?**

## Or should you **be** the **change?**

## Wake up to a new India!

**iit** ALUMNI **2010** CONCLAVE

**Register Now**
**www.paniit2010.org**
*Open for all IITians and like minded...*

# PanIIT 2010 Conclave

SUSTAINABLE TRANSFORMATION:
OUR NEW INDIA

### An opportunity to:

- Network with 5000+ IIT Alumni
- Contribute to nation building
- Showcase your start ups at the exhibition space
- Be nostalgic, meet up with batch mates and reconnect with them @ IIT Addas
- Enjoy a perfect weekend with family and friends

### Key Speakers at 2010 Conclave
Meet the following leaders and many more!

- **Dr. Farooq Abdullah**, Union Minister for New and Renewable Energy
- **H.E. Jigme Thinley**, Prime Minister of Bhutan
- **Shri Nandan Nilekani**, Chairman, Unique Identification Authority of India (UIDAI)
- **Dr. Sam Pitroda**, Advisor to Prime Minister of India on Public Information, Infrastructure and Innovations
- **Shrimati Sheila Dikshit**, Chief Minister, Delhi
- **Mr. Thomas L. Friedman**, Author, Reporter & Columnist

### About PanIIT

- PanIIT is an umbrella organization for the entire IIT Alumni fraternity
- PanIIT represents over 200,000 IIT Alumni from all the IITs and has active chapters in U.S, India, Europe, Canada, Australia and Singapore
- The vision is to help IIT and IIT Alumni leverage their potential for nation building

### PanIIT 2010 Conclave Highlights

- H.E. Smt Pratibha Devisingh Patil to inaugurate PanIIT Conclave
- Representation of all 15 IITs
- Golf Tournament
- Exciting spouse programs and kids carnival
- World class venue, a chance to meet delegates one on one, hotel arrangements and free pick up services
- Hurry! 2400 already registered...

## 29th-31st October 2010
### India Expo Center, Greater Noida, Delhi NCR

For More Information, contact Shivani Langeh
PanIIT Secretariat No. - 011 - 26581093, 64641093  Email : secretariat@paniit2010.org
Get update via SMS by texting **follow paniit** to **5300 in India**

**Tried & tested**

**Samsung Galaxy S Femme**
Samsung Galaxy S Femme is a variation of the Galaxy S phone which is designed specifically for women

**Mercedes-Benz go green**
Mercedes-Benz launches 95 horsepower A-class electric car that has a top speed of 93 mph with its 70kW motor

Lenovo's IdeaPad Z460 is an affordable laptop

tive, and put function keys where Ctrl should be are a strict no-no. The thumb-rule is to use the keypad on the demo piece for at least a few minutes, and do some regular tasks, and write out something. If you struggle, then the keyboard (and laptop model) is not for you. Something you should look out for is multi-touch track-pads. These are just great to use once you get the hang of things, and you will never be able to go back to regular track-pads later. If you like huge screen laptops, make sure you find one that has a number pad inbuilt into the keyboard – you'll be able to work much faster with a dedicated number-pad.

## THE HYPE
You're going to be bombarded with advertisements, special offers and more this Diwali, and it's important to know what's just hype, and what isn't.

### The categories
When it comes to laptops, you're often told that some models are Ultra-compact, or business series, gaming, etc. What you need to remember is that, just like desktops, you should always try to get the most powerful hardware for your budget. Buy based on usage, and not on looks alone, and you will always buy smart. If you don't plan on computing on the move very often, buying an ultra-compact for a lot more money doesn't make sense. If you hardly game, and buy a gaming laptop, that won't make much sense either. The business series from most manufacturers are usually filled with security features, and are more sober-looking than their lifestyle cousins. However, we've often found that the lower-end business series are decent buys, even if you're still a student, because the less

fancy designs mean that more attention was paid to the innards of the machine – better hardware, or sturdier chassis, etc.

### What's in a name?
Just like we all want flashy racing cars, and own designer wear, a lot of us want our laptops to be fashion statements. Named after big car makers, or designed by famous folk, there are laptop models that exist purely for flaunt value. If you have the money to spend on them, you can choose to show-off to your friends. However, if you're taking an EMI-scheme, and buying one to increase your productivity, don't consider these designer brands. For the same price you would be able to buy a much more powerful laptop that would keep you future-proofed for at least a year more.

### Are we dead yet?
Some of the technologies people were raving about just a couple of years ago are not really popular today. However, this will not stop manufacturers from throwing them in to some of their models. We're talking about stuff like biometrics. Although a good concept, bad implementation means that the webcam or fingerprint reader doesn't always work as advertised. We've bought a couple of such laptops ourselves, which is why we speak from experience. Sometimes face-recognition doesn't work after a haircut, or if you haven't shaved, and all six of the


Sony's CW series are an affordable yet stylish line of laptops

laptops we've used which had fingerprint readers suspiciously developed some hardware problem just after warranty expired. It's no big deal, but the track record of such things is barely passable. These days, manufacturers are busy upgrading their laptops. Intel's Core 2 processors are being phased out and being replaced by Core i3 processors. The base of the pyramid has seen a lot of activity in the recent past. The Core i3 350M processor is a commonly used processor now. For a really low budget, it's advisable to go with an entry-level

## SERIES UNLINKED

Lenovo such as the IdeaPad Z460 or IdeaPad Z560. These affordable laptops with their fairly sturdy frames and upgraded processing power are good for most activities. It's wrong to expect gaming class performance from them. Prices should be well under the ₹35,000 mark. With laptops, it's important to check what kind of system configurations you're being sold. Most product models are available in different variants – the processor, graphics solution, memory and disk drive often change. If you want something cheaper, the Acer Aspire 4736z might be better suited. It's priced at around ₹23,000.

## To buy, or not to buy?

When you go higher up the price ladder, expect entry-level Core i5 processors to show up in the specifications. The configurations of the Acer Aspire 4820TG for example come with a Core i5 450M processor, an AMD Mobility Radeon 5600 or 5700 GPU. The gaming performance from this kind of configuration is good enough for some occasional gaming. Don't expect high-end games such as *Crysis Warhead* to run though. Similarly, you also have the Dell Studio line of products to choose from. The Dell Studio 14 and 15 lineups are a good place to build on. Dell offers easy customisations, so you can soup up the stock ₹45,000 model to the specs you'd like. A decent Core i7 configuration with a 1920x1080 display can be achieved for ₹65,000.

Sony's VAIO CS series are also a good range to consider if you're looking for something in the ₹37,000 range. They feature somewhat older Intel Core 2 Duo 8500 processor, but with an entry-level NVIDIA GeForce GT210. When we reviewed it, it had a decent build quality and aesthetics.

If you want battery power, the ASUS EeePC 1215N is surely an attractive contraption. Powered by a dual-core Atom processor, and NVIDIA's Ion graphics solution, it's a big step up on any of the other netbooks in the market. Price for the ASUS EeePC 1215N will be as much as a cheap laptop, but not as powerful.

## HIGHLY DESIREABLE TVS

The urge to go HD is unbearable. The thought has been on most people's minds, and every year, more and more Indians make the transition from traditional CRT TV sets to LCD, Plasma, and recently, LED LCD TVs. CRTs have been around in the Indian living room for a very long time. We've already talked about HDTVs in the past, about them being power efficient and better than CRT TVs in almost every aspect.

We noticed that sales of these new technology displays weren't hampered by the recent recession either. In fact, statistics show that prices of TVs went up by a bit for a while during the period, without too much of a change in sales.

**THE TECH:** LED TVs (or LED-backlit TVs)

One of key terms used these days is LED TV. While the name suggests that the display is powered by LEDs, it's only a way to illuminate the screen instead of displaying the image itself.

**Tried & tested**

**Ubuntu Prototype**
Ubuntu Prototypes is a new feature which will have face detection like on many Windows laptops

**Casio EX-Z2300**
Casio's new Exilim EX-Z2300 camera comes with a 14.1 MP sensor, a 3-inch LCD, 5x optical zoom and can also record 720p videos

The correct terminology should be LED-backlit TVs, or LED LCD TVs. True LED TVs are yet to arrive. What's important to note is that these LED-backlit TVs offer slightly better contrast ratios. It's not an essential feature that every TV ought to have. The other benefit of LED TVs is that they can be slim. Buying a slim TV is great if you have plans of wall mounting the TV.

The only problem here is the price of the product. Like with any new technology, there is a premium you pay. Today, you can buy an LED-backlit TV for 30 to 40 per cent more than a traditional LCD. You can buy a decent 40-inch LED-backlit TV for around ₹60,000. As time progresses, LED TVs are bound to get a little cheaper like with any other technology.

For the moment though, most of us do not absolutely need a thin display and there isn't much of a performance improvement over the early line of LED TVs.

### S-IPS panels
S-IPS panels are considered to be the best when it comes to colour rendition and viewing angles. However, most popular brands use IPS or S-IPS panels. Some brands don't advertise the IPS panel bit enough, so only if you don't see the term used, enquire about the nature of the panel. You're more likely to find that it's an IPS panel anyway. And don't think of it as a "standard" either! You should check image quality regardless, because you get both bad SIPS and good SPIS panels.

### Media playback
Most TVs these days have an inbuilt media player. You can connect a portable hard drive or flash drive, and play your favorite movies and music directly from the TV. In almost all cases, however, the hardware on the TV isn't designed to play high-definition content, so you're left with a player that only plays limited formats and resolutions. The performance in the menus is also usually slow and painful. Eventually, you're going to want to buy an HTPC or a media player, so don't give this feature too much importance.

## OPTICAL LIGHT EMITTING DIODE TECH

OLED is an upcoming technology and it's impressive because you can now have a really thin display with excellent performance. Unfortunately, it's still far from replacing LCDs. So if you're waiting for the next big thing, it's still going to take a couple of years before you can go out and buy one for say, ₹50,000 or so. The only decent OLED demonstrations have come from LG and Sony in the last couple of months. LG's prototype shown at IFA 2010 is expected to be around £6000 (approximately ₹430,000)

### HYPE: 3DTVs
3D-anything is a catchphrase these days. With the arrival of 3D movies in cinemas, it's only normal to expect 3D movies at home. Some brands have been seen selling these TVs, but the fact remains that there are very few, or almost no 3D movies in the market. In India, it's far worse. Here, we're still to see very affordable Blu-ray HD movies. 3D TVs might be interesting for the future, but for now,

Sony's NX900 LED-backlit TVs support 3D content playback

we'd like to see more HD content to begin with. Brands are also working frantically on developing 3DTVs that will not require you to use those stupid glasses. Unless you have money to burn, three or four years hence, you want to be able to upgrade from a regular

LCD/Plasma to 3D, and not stuck with a 3DTV that your friends make fun of.

### The Hz wars
You've probably also seen 120Hz and 200Hz refresh rate TVs being advertised. Apparently, these let you enjoy smooth video playback. Different manufacturers use different terms for this. Since the TV broadcasts and video content you will usually watch are 24fps or 30fps (60fps in rare cases), all this Hz business is of little consequence. There is re-sampling required in most cases to play 24 and 30 fps video on a 120Hz and 200Hz TV. If anything, you might actually notice ghosting and other artifacts as all this sampling is done by hardware and software. Actually, when we test TVs, these are some of the features we choose to turn off.

### Visual enhancements
Many manufacturers boast of their image processors which are capable of making picture crisper, and noise-free. Contrast and colour enhancements are common examples. What you should look for is a very natural image that hasn't been tampered with. Most TVs with these settings turned on make colours look gaudier and the image quality harsh. Sharpening is also only useful if you're sitting the required distance away from the TV, if you're too close, this will make the edges of objects look jagged. Again, we turn all such features off when testing, and you should do the same when looking at the TV on display in the showroom.

### WHAT'S FOR SALE?
Everyone complains about how we have so little choice and how they'd like to get what was available in the US. So what can you really buy in

**fuRo Bipedal robot**
fuRo's latest robotic bipedal robot weighs 230kg,
and can lift 100kgs of load

**New Phenoms**
AMD launched several processors
including a high-end 6-core Phenom
II X6 1075T

**Cover feature**

India? The fact remains that almost all of the popular brands have setup shop here. All the popular LCD and Plasma TVs are still available here. LED TVs have only recently entered the market. If you have the money, today, you can buy anything from a 26-inch LCD TV priced at as little as ₹25,000 to something priced at around ₹20,00,000 if you're looking for absolute performance and style.

We've seen through popular searches and questions over the years, that most people look for 32-inch TVs. A lot of people are used to 21-inch CRT TVs, so an upgrade to a 32-inch LCD TV seems like light years ahead, and they're right.

What about the popularity of the different technologies of TVs? LCD TVs have been the most popular of all the terms used on Google. LED TVs have only recently picked up and are as popular as Plasma TVs. Many more people are looking for 32-inch TVs over 42-inch and 26-inch TVs. Clearly, budget is a concern. The only confusing bit about 32-inch LCD TVs is the two options available. A few years ago, the only option was to go for a 768p (1366x768) 32-inch TV, while 42-inch TVs had full HD resolutions (1920x1080). Recently however, full 1080p resolution has arrived on the smaller 32-inch format. 1080p is more popular than ever before now. Market prices of these 32-inch full HD TVs start from around ₹27,000.

### What are people looking for?

Having bought and used CRT TVs for real long periods of time, most of them have got the money's worth. CRT TVs have run for close to 10 years or more in some cases without any problem. They were also a lot cheaper than LCD TVs. CRT TVs are still available but for a fraction of price of popular LCD and Plasma TVs. Spending power has improved dramatically and people are fine with spending more and settling for a cheap LCD TV. The largest number of buyers seems to be in the sub-₹30,000 range with either a 26-inch or 32-inch TV in mind.

### CATEGORIES: 32-inch TVs

If you're buying a 32-inch TV, you will be spending at least ₹23,000 on it. That's a lot of money, and it makes sense to spend a little more and purchase a TV that can handle 1080i/p resolutions. Last year, around this time, 32-inch TV were priced at a minimum of around ₹32,000. This included TVs from brands such as Philips, Hitachi and Panasonic. Full HD (1080p) sets on the other hand were still close to ₹40,000. Brands such as Sony were still priced higher. Their 768p TVs were close to ₹38,000 and the full HD 32-inch TVs around ₹42,000.

Today, 768p TVs are available for around ₹23,000 – that's close to a 40 per cent drop! Similarly, 32-inch 1080p TVs too have dropped drastically. The additional benefit is the festival season which means you will see good discounts or freebies being given away with them.

### 42-inch TVs

42-inch TV prices too have plummeted but not as much as the 32-inchers. Prices start from around ₹40,000, and have dropped by around 15 to 20 per cent. Prices might drop even further during Diwali. If they do touch the ₹35,000 mark this Diwali, grab the opportunity. Features such as 200Hz refresh rate might not be available, but then again, as we've said before, they don't really matter that much to most people.

### TO BUY, OR NOT TO BUY?

The market is bubbling with activity. Almost every popular manufacturer such as LG, Samsung and Sony are going ga-ga over LED TVs. Market prices of most


LG 47LG50HR - the 47-inch giant

32-inch LED-backlit TVs start at around ₹40,000. The slimmer TVs can go up to ₹60,000 even for 32-inch TVs. Malls are not the cheapest places to buy LCD TVs, from what we've discovered. Look for other retail showrooms and shops which sell TVs and other home appliances. You can actually get TVs for up to 10 to 15 per cent cheaper there.

If you're looking for a good 32-inch TV, then you should spend time investigating Sony's KLV-32NX500 priced at ₹42,500. It was one of the best performers in our last LCD TV test. Prices have dropped a lot since then, and it makes even more sense to buy it now.

LG's Jazz (42LG80FR) is a slightly older model but apart from good colour reproduction and fancy design, you also get a pair of excellent sliding speakers. If you're thinking of something larger – something in the 47-inch category, the LG 47LG50HR should grab your attention. The price for this model is around ₹48,000 in the market.

### CAMERA CONFUSION

Panasonic DMC – TZ10 or Sony DSC – TX5? Canon 550D or Nikon D3000? DSLR or Prosumer? 10 MP or 15 MP? 3X optical zoom or 12 X optical zoom? Touchscreen or buttons? These are just some of the questions you might come across when looking at cameras.

### Be Sure

Digital cameras are divided into three main segments, the point and shoot; ultrazooms and DSLRs. But nowadays, with ultrazooms also coming in a compact form factor, the lines between


Samsung's brand new Series 9000 LED TV

traditional compact cameras is blurring. DSLRs, which were considered the domain of professionals, a few years back, are now also targeting first time users with entry level offerings.

To cut a long story short, you have to be very sure of *why* you want the camera. If you are just buying a camera for casual use, then the hassle free point and shoots are enough. For the more adventurous types, who are willing to play around with the settings and want to shoot outdoors, or those who aim to buy DSLR in the future, but want to acquaint themselves with the basics first, the ultra-zooms are the answer.

DSLR cameras are ideal for people who will invest a lot of time in photography. Higher-end DSLRs are meant for professionals, and are priced accordingly. Only buy them if you know what you're doing, and will use all the features.

## THE TECHNOLOGY

**Touchscreens** are seen on many compact cameras recently and the trend is definitely on the rise if the interest level on Google is any indication to go by. But having tested many touchscreen cameras, we feel that actual button feedback is better – touchscreens do not really help in any-

way, and are more of a gimmick.

Like touch-screens, **geo-tagging** is another feature that found its way from cell phones into cameras. Although many high-end cameras had this functionality some years back, you can find it in quite a few compact cameras today. If you travel a lot, this is a good feature to have, ₹15,000 to ₹20,000 is the ideal price point for ultrazooms with geo tagging.

Although this is not exactly a new trend as such, but we are seeing new **card formats** like SDXC, Eye Fi cards flooding the market. So when you buy a camera be doubly sure of what memory format it supports. Ideally we would not recommend cameras that only support proprietary formats (read Sony's memory stick). It is best to stick to standard SD and SDHC cards and buy a camera which is compatible with future SDXC card formats. For DSLRs the standard is the CF card, but a lot of higher-end DSLRs also support CF and SD cards. Eye-Fi cards have a Wi-Fi adapter inbuilt,



The Micro Four Thirds sensor based Olympus PEN E-P1

which allows wireless image transfer, but it is expensive.

Olympus and Panasonic came out with the **micro four thirds** image sensor which allows you have a more compact DSLR. The micro four third image sensor reduces the space between the lens mount and the sensor alongwith doing away with the mirror box which reflects light to the viewfinder. The result is a much compact DSLR with interchangable lenses. The lens diameter opening is reduced somewhat but you can use normal lenses with the help of an adapter.

Many cameras are slowly but surely adopting this technology. It is aimed at photographers who want the quality of a DSLR but in a compact form factor. We have used such cameras in out comparison tests, and they were good in certain

## BRAND BUSTING

The eternal war of Canon vs. Nikon continues as always, but a Google Insight for search threw up some interesting results. To be fair to all cameras, we just put in a term with the brand name like Canon, Nikon, Sony, Samsung and Panasonic. As can be seen in the graphs, the interest around Canon and Sony in India was very comparable in 2008 and 2009, but in 2010, Nikon is catching up thanks to its range of entry-level cameras, a segment which was dominated by Canon and Sony all these years. In comparison to these three behemoths, Samsung and Panasonic attract lesser search terms. But one look at the growth relative to industry throws up Samsung as the winner with its curiosity level rising way above the others thanks to the aggressive shipment of cameras

across the entry level and prosumer category. Other brands like Olympus and Fujifilm had a very low interest level so we did not include them in the top 5.

In the compact camera market, Sony leads with a 45 per cent share whereas Canon has a 20% share whereas in the DSLR segment Canon is the leader with a 55 per cent share followed by Nikon which covers around 40 per cent. Having mentioned the leaders, it is also important to know that other manufacturers like Samsung, Panasonic etc are also ramping up their camera production and marketing in India. According to industry figures, camera unit sales is expected to touch 1.8 million pieces by year end.



Graphs comparing the popularity and growth of camera companies

# SOUTH ASIA'S
# ICONIC GADGETS & CONSUMER ELECTRONICS EXHIBITION

# SYNCHRONIZE TO THE NEXT

@

# GADGETS @ DIGITAL
## Life style show
### The Unmissable
22nd to 24th Oct, 2010
WWW.GIZMOSFORU.COM

Featuring Skoar Expo  * SKOAR!

Gadgets & Digital Lifestyle Show is a window that showcases the latest in applied technology, consumer electronics, gadgets & gizmos.

22nd to 24th October, 2010, at NSIC Exhibition Center, Okhla, New Delhi.

To exhibit at Gadgets & Digital Lifestyle Show, contact:

Rahul Torani at +919873951588, rahultorani@imagesmultimedia.in

Sachin Tyagi at +919953004822, sachintyagi@imagesmultimedia.in

| Lead Sponsors: | Associate Sponsor: | Organized By: | Co-Organized By: | Supported By: | Media Partner: | Knowledge Partner: |
|---|---|---|---|---|---|---|
| Canon   LG | MapmyIndia | IMAGES | MAIT | CEAMA | m  Livingetc | digit |

aspects. But it cannot compare with a standard DSLR camera. Also the variety of lens available for the micro four thirds is limited as of this day. Price-wise they are more expensive than entry-level DSLRs. The main advantage they have is compact size and a major disappointment is the absence of a view finder. Lets face it, it is unusual to look through a screen and adjust the lens.

Should you buy this now? If you want a compact DSLR and are not going to use many lenses in the near future then yes, go for it. If you already have a standard DSLR with a range of lenses, then unless you are looking at a compact form factor, avoid it.

Only Olympus (three) and Panasonic (five) have camera models in this segment.

## THE HYPE

**Social network tagging** is a new feature which allows user to tag photos and videos and upload to sites like Facebook or YouTube, such that while transferring images to the system, the tagged images and videos will be optimised to be uploaded to the sites. The software bundled along with the camera will automatically ask if you want to upload the photos and videos. This definitely saves a lot of time, but it makes sense to spend additional bucks on this feature only if you are a heavy user of these sites.

Otherwise using traditional methods like saving the images on the system then uploading manually suffice. Price points to look at should be ₹15,000.

A lot of manufacturers are coming out with cameras with **Wi-Fi and Bluetooth** capability. These cameras not only allow you to transfer images to your system over a Wi-Fi connection, but also allow you to upload images directly to Flickr, Facebook and videos to YouTube.

This is the way to go. But again we would advise you to wait and let more players come out with these type of cameras. However, expect to pay more as this is currently a premium feature.

Fujifilm had come out with a **3D camera** called the FinePix Real 3-D W1, that shoots 3D images and videos. We think it's too early to invest in a 3D digital camera, as the 3D eco system (displays especially) are hard to come by. Nikon Coolpix S1100pj is a compact camera with a **mini projector** inbuilt. These niche features are welcome innovations, but we would advise waiting for at least a year before buying anything like this. Two reasons: let more manufacturers start adding these, to see if it's a viable trend, and secondly, prices will fall.

### DSLR and Lens
Buying a DSLR requires some homework on your end. Apart from the present cost of purchasing a DSLR body with the standard lens, you will also have to ask yourself if you are willing to invest in lenses in the near future. Camera lenses are expensive, so if you plan on doing wildlife or sports photography, then you will not only have to buy a DSLR body, but also invest substantial amount of money in a compatible lens. Buying a DSLR is not just a one-time purchase. You are also buying into a whole eco system of compatible

3D Cameras like FujiFilm Finepix Real 3D W1 should be avoided as of now

lenses, flash guns and other accessories. So be doubly sure before buying a DSLR about all these external factors.

### Latest or Slightly older?
Also while purchasing a DSLR, it is all right to opt for models that are a generation older, as long as you get after-sales service. Unless newer models have some drastic changes in the features, you can save money by buying an older camera that offers you 90 per cent of the features, and often comparable performance at a bigger drop in price. For instance, it makes sense to buy a Canon 550D over its predecessor the Canon EOS40D, since the 550D has significantly improved the image sensor, added HD recording, higher ISO range, higher exposure ratings, etc. In the ultrazooms, however, the newer models are priced substantially higher than older models, but the additions are minimal.

Sony DSC TX-1 for Entry level compact

## RECOMMENDATIONS
We will only be recommending cameras that we've tested previously, so although not comprehensive of the market reality, we prefer to be sure when talking about cameras.
**Entry level point and shoot:** Samsung ST550, Sony DSC TX1.
**Ultrazooms :** Panasonic DMC-TZ10, Canon IXUS 130IS, Nikon P100,
**Micro Four Thirds :** Samsung NX11 and Olympus PEN E-P1
**Entry level DSLRs :** Canon 550D and Nikon D3000
**High-end DSLRS :** Canon 7D and Nikon D300S, Nikon D90
**Ultra High-end DSLR :** Nikon D3s

To read on **PMPs and Home Entertainment systems** go to **Thinkdigit.com**

# PULSE 2010

Pulse2010, this year's annual tech-fest of D. J. Sanghvi College of Engineering, was a brilliant amalgamation of technology and fun, which enthralled everyone who was a part of it. This year's Pulse, as promised, put students of diverse engineering branches under the common flag of participation and showcased a whole new arena of technological genius. Pulse2010, like its previous versions, endeavoured for the appreciation and assimilation of science through the ages, thereby perfectly blending technology and entertainment in a wholesome package of a euphoric tech-fest.

This year's theme captured the essence of evolution of science from the glorious past to the imminent future in three eloquent words -'Genesis, Revolution and Techboom!' The theme portrayed the journey of pure sciences culminating into present day cutting edge technology. In a world that has experienced a fairytale transformation; the role of technology in altering human lives has been substantial. This was aptly represented by the Mega Events of Pulse 2010.

Pulse2010 kick-started with a state level technical paper presentation which saw participation from the state's elite minds. Genesis was manifested through T.P.P. in a way that it provided a platform for ingenious ideas conceived by the students based on weeks of intensive research. The event received a whopping 150+ abstracts from all over the state out of which 57 were selected and 50% of the selected entries were outhouse. Among the few winning entries were Zigbee, Audio Frequency track circuit, Visual Cortex Implant and Image Processing Authentication using Digital Water.

Next in line was TechExpo, a remarkable exhibition of projects made by the students all over Mumbai. The projects exhibited were based on creativity, rational thinking and a perseverance to become an instrument of change. This signified Revolution as some of the entries we received were one of their kinds. For instance, enhanced ATM security, HandSpeaks(wireless glove controlling wheelchair and home appliances), clap based home automation and wireless power transmission.

Apart from the regular workshops for wired and wireless robots; the college also held a workshop for Insectobotics, which was an ideal step for those who were uninitiated in the field of robotics. This workshop shed light on the crafting of bots like Strider and Bristlebot at level one and Frogbot at level two. This seminar was informative and focused on unique creative ability of the participants to bring bots, that resembled insects, to life.
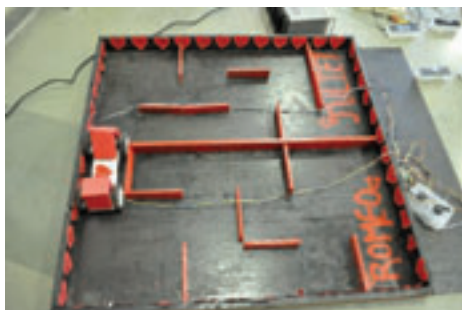
Accelerometer, based on the concept of motion sensing, represented techboom. In this event, one had to navigate a robot just by standing on a wooden plank kept on a tyre, leaning in the intended direction to clear a maze as quickly as possible. It involved sensors in the tyre which were programmed to direct the robot along the maze. Laser CS, which had the feel of a real war arena had taken cues from the popular FPS, CounterStrike. Participants were given programmed laser guns, which had features like life counters, reloading ammunition and provision for headshots. The game promised an action packed, 3 on 3 battle and took the virtual version out in the real world. And the best part? It was lit up with UV lights!

This time the robotic tracks were based on unique themes and displayed the creative genius of the students. The Texas Countdown incorporated the look of the Wild West replete with cowboy hats and guns. PacMan was a UV lights illuminated maze that reminded the participants of the popular vintage PC game. Myst-o-Maze was a dimly illuminated maze where the robot had to be controlled by viewing the maze through a cam. 5 mazes 5 secrets was a multi maze track in which four mazes, based on life aspects, were encrypted into a fifth one. For instance, the love track had two robots designed to be controlled by a single remote. F1 Singapore, another major attraction, for all those racing fans out there, exactly resembled the Marina Bay F1 circuit in Singapore. Only lit by LEDs, it had two high powered RC cars racing down the entire circuit.

A tech fest is incomplete without RoboWars and this year they had their own desi version aptly named RoboAkhada. It was a head on battle between two bots in a closed arena, supervised by a controller robot, Pahalwan, built by the students themselves. Pahalwan had an 1800 rpm blade which pounded the participating robots entering its territory. In the finale, the arena was blacked out, save for the lights of a motorcycle.

To conclude, this tech fest brought to light new innovations in the field of technical knowledge and set a new benchmark in the history of tech festivals of the college. ∎

**Tried & tested**

**Radeon 6700?**
Chinese site claims to have leaked details
about AMD's upcoming graphics card

**Google Video Chat**
Google tweaks its video chat to provide
improved image quality

# Reinforcements have arrived...

A look at the advancements
in HD media players in the
last few months

By Team Digit
*feedback@thinkdigit.com*

**W**atching movies is a great pass-time activity, but broadcasted television does not interest the audience as much, especially with the choice of channels. Many people prefer watching movies over TV shows on their large LCD and Plasma TVs. Blu-ray content looks like the only way out.

This is where HD media players come in. They're affordable media playback devices which can playback high-definition movies from a connected storage drive smoothly. HTPCs and Blu-ray players are either expensive or just plain complicated to set up, so a lot of people probably don't bother with one.

We tested HD media players in May this year, and there were some clear winners. Since then, there have been many new contenders. New features have

been added or have become the norm for these players. We've tested some of these new players over the last couple of months. We tested them to see if there were any new features and performance benefits that are worth your money. Here's what we thought.

## Xtreamer Pro

The Xtreamer was one of our favorite HD players in the last test. When you go looking for the Xtreamer Pro on the web, you find a fancy web site that resembles a game. It looks like they're pushing the new product even more.

The new player is somewhat taller and wider than the older Xtreamer. The old one could only accommodate a 2.5-inch internal hard drive, which then seemed like a neat feature. This new one can hold two 3.5-inch drives easily. This makes the product slightly bulkier than most of the media players in the market today.

The chassis is well built. A metal front panel instead of the plastic one would have made it look even more attractive. There is a USB port and an eSATA port in line with the status LEDs at the front. The rear end of the product has an additional USB 2.0 port to connect external drives and one to connect the player to a PC. The player has HDMI, and Composite but no Component. For ideal resolutions, you absolutely need a display supporting HDMI.

Bootup time is somewhat long at 19 seconds. The interface has changed a little bit. The use of background wallpapers is new, but not something everyone will like. Content is sorted well. Navigating the menus is a breeze. The use of space on the remote is good.

One of the features is the NAS mode which allows other devices on the network to access drives connected to the player. Live internet streaming, RSS feeds support, Picasa and

Youtube are some of the other features available. Streaming performance is good with both wired and wireless connections. Video quality is good, and we experienced absolutely no lag while trying playback of all formats. Format support is still excellent when compared to most of the other players.

Costing ₹13,500 for just the player and an additional ₹1,000 for the USB Wi-Fi adapter, it's definitely much more expensive than the older Xtreamer player. At ₹8,990, the older Xtreamer product gives you most of the feature.

BEST PERFORMER
**digit**
**OCTOBER 2010**

Xtreamer Pro

## IE9 Beta launched
IE 9 Beta launched with a fresh look and
improved usability and security features

**HD Media Players**

Buffalo LT V-1005000

## Buffalo LT V-100

Buffalo is a brand that's digging deeper into storage and networking devices. The LT-V100 is their latest product. It is a compact looking, jet black HD player with a smooth upper surface.

The build quality of the product is not impressive. The body made of cheap plastic. The remote control bundled with the player is dull colored, flimsy and unimpressive.

There are two USB 2.0 ports and a HDMI connection on the back panel. We wish they had provided us with an HDMI cable though. The nice part is, the remote control, works from any angle. It has a LAN port for home network connection. However, it does not feature Wi-Fi. The user interface is user friendly, but it does not segregate according to their format.

The noise reduction feature is not very effective in reducing the amount of noise in the image rendered on screen. An important thing to note is the ability to play almost the file formats including MP4, MPG, RMVB, MOV, MKV, AVI, but it fails to play FLV. When connected to the network, playback lags and files take time to open. File transferring is quite slow.

At 12,000, it is highly overpriced for its build quality and features. You are better off putting in an additional Rs. 1,500 and getting the Xtreamer Pro with media streaming and other outstanding features.

## Compro VideoMate 950

The Compro VideoMate 950 is a full HD media player with net- work connectivity and storage options. It comes in an all black body and has a nice brush metal finish. The front panel is made of plastic with a USB port positioned in the bottom left hand corner. There is a string of LED indicators as well. The body is somewhat bulkier to accommodate either a 2.5 inch or 3.5 inch SATA hard drives.

VideoMate 950 comes with a range of connectivity options like an HDMI port, a component, composite audio and video ports, two USB ports, a mini USB port and a LAN port for network connectivity. The player can be opened up to to attach the HDD within. The interiors are pretty compact in the sense - there is no noticeable gap once you plug in the drive in the chassis. Provisions are made for a 2.5 inch drive - there are some clips provided to hold it in place.

The GUI is one of the most impressive user interfaces we have seen among all the media players tested up until now. The main home screen shows three options like File Copy - which allows you to copy files among your network, HDD and USB drive; Browser - which segregates the various input media like HDD, USB, Network etc and finally Settings which allows you to tweak the audio, video, network settings.

It takes 11 seconds to startup, but movie loading time is a quick 4 seconds. Navigating through the menus is quite intuitive. It does not segregate media though. The bundled in remote is decent but the navigation pad in the centre requires a hard

## HP Arcsight

Hewlett-Packard to buy ArcSight, a security solutions company for $1.5 billion

| Brand | Amkette | ASUS | ASUS | Buffalo | Compro | Iomega | Seagate | WD | WD |
|---|---|---|---|---|---|---|---|---|---|
| Model | Flash TV | O!Play Air HDP-R3 | O!Play HDP-R1 | Link Theatre LT -V100 | Videomate NMC950 | ScreenPlay Director | FreeAgent Theater+ | TV | TV Live |
| Price (₹) | ₹2,995 | ₹10,000 | ₹9,000 | ₹12,000 | ₹7,000 | ₹12,000 | ₹9,500 | ₹6,500 | ₹8,500 |
| Overall (On 100) | 27.23 | 60.00 | 57.16 | 53.47 | 64.41 | 69.97 | 67.86 | 49.43 | 62.01 |
| Features (On 50) | 7.15 | 24.40 | 22.40 | 21.25 | 31.15 | 36.50 | 32.50 | 15.90 | 28.05 |
| Performance (On 50) | 20.08 | 35.60 | 34.76 | 32.22 | 33.26 | 33.47 | 35.36 | 33.53 | 33.96 |
| **Features** | | | | | | | | | |
| Max resolution supported | 1080p (upscaled) | 1080p | 1080p | 1080p | 1080p | 1080p | 1080p | 1080p | 1080p |
| Ports (USB / eSATA) | 1 / 0 | 2 / 1 | 2 / 1 | 2 / 0 | 2 / 0 | 3 / 0 | 2 / 0 | 2 / 0 | 2 / 0 |
| Network support (Wired/ Wireless) | N / N | Y / Y | Y / N | Y / N | Y / N | Y / N | Y / N | N / N | Y / N |
| Video (MKV / FLV / Real video / MOV / MP4) | N / N / Y / N / Y | Y / Y / Y / Y / Y | Y / Y / Y / Y / Y | Y / Y / N / Y / Y | Y/ Y / Y / Y / Y | Y / Y / Y / Y / Y | Y / Y / Y / Y / Y | Y / N / N / Y / Y | Y / Y / N / Y / Y |
| Audio (FLAC, WMA / AAC) | N / Y / Y | Y / Y / Y | Y / Y / Y | Y / Y / Y | Y / Y / N | Y / Y / N | Y / Y / Y | Y / Y / Y | Y / Y / Y |
| **Web content support** | | | | | | | | | |
| Youtube / Google Videos | N / N | N / N | N / N | N / N | N / N | Y / N | Y / N | N / N | Y / N |
| Flickr / Picasaweb | N / N | N / N | N / N | N / N | N / N | Y / N | Y / Y | N / N | Y / N |
| RSS feeds / Weather / News | N / N / N | N / N / N | N / N / N | N / N / N | N / N / N | Y / Y / N | Y / Y / Y | N / N / N | N / N / N |
| **Connectivity** | | | | | | | | | |
| Windows shares / FTP | N / N | Y / N | Y / N | Y / N | Y / N | Y / N | Y / N | Y / N | Y / N |
| Remote web access | N | N | N | N | Y | N | N | N | N |
| Bittorrent / NAS | N / N | N / N | N / N | N / N | Y / Y | Y / Y | N / Y | N / N | N / Y |
| HDMI / Component / Composite | N / Y / Y | Y / N / Y | Y / N / Y | Y / N / Y | Y / Y / Y | Y / Y / Y | Y / Y / Y | Y / N / Y | Y / Y / Y |
| **Performance (Out of 10)** | | | | | | | | | |
| Startup time (sec) | 6.5 | 8.1 | 9.6 | 10 | 11.62 | 114 | 9.03 | 5.12 | 7.09 |
| AVI (480p) (Performance) | 8 | 8 | 8 | 6.5 | 6 | 8 | 8 | 8 | 8 |
| AVI (480p) (Quality) | 6 | 7 | 7 | 6.5 | 6.5 | 7 | 7 | 6 | 6 |
| MKV (720p) (Performance) | NA | 8 | 8 | 5.5 | 7.5 | 8 | 8 | 8 | 8 |
| MKV (720p) (Quality) | NA | 7 | 7 | 6 | 7.5 | 7 | 7 | 6.5 | 6.5 |
| MKV (1080p) (Performance) | NA | 8 | 8 | 5.5 | 7 | 7 | 7.5 | 7 | 8 |
| MKV (1080p) (Quality) | NA | 7.5 | 7 | 5.5 | 7.5 | 6.5 | 6.5 | 6.5 | 6.5 |
| **Build and Aesthetics** | 6.5 | 6.5 | 6.5 | 5.5 | 5 | 6 | 6.5 | 6.5 | 6 |

press since the entire control is made of poor quality plastic. The location of the Return key is also unconventional.

This player is quite versatile in the sense that it plays anything you throw at it. It played 720p and 1080p videos brilliantly. DVD quality videos appeared stretched on the big screen, but setting the TV system to 480p gave a good output. But then, this player is meant for HD videos. Connecting to the network does not take much time, but you will need an external computer for activating the BitTorrent client in the player.

At a price point of ₹9,000 we feel it's a tad over priced, but it is completely worth the cost.

We would definitely recommend this player.

### Zebronics ZEB-MP1000HDMI

Zebronics is somewhat of a local brand in comparison to all the other big names or popular devices on the internet. Their player comes in a compact form factor with black plastic body. The buttons on the front panel are of poor quality.



Compro VideoMate 950

Component and composite video ports are on the side whereas the USB and HDMI port are on the rear side. The main menu comprises of options like photos, videos, music and settings. User interface is quite intuitive and straight forward.

Media is not segregated according to its type and you have to go to individual folders, which makes it a pain to use. It takes 10 seconds to start up, while movie loading took a mere 6 seconds. It can play DVD quality movies flawlessly. We encountered problems while paying back 720p videos. As it does not support all the video formats, you will have to convert non compatible files beforehand. It plays RMVB

videos pretty well but loading images takes very long.

This player is ideal if you have a huge collection of standard Xvid and DivX AVI files. The player does not support many formats such as MKV and WMV. However, it is one of the cheapest players at just Rs. 2,600, but the lack of video format support makes it hard to recommend.

### Is there a new winner?

Yes, there is. We liked the Xtreamer the last time we tested HD Media players. This time around, the Xtreamer Pro beats the last winner – the Iomega Screenplay Director. It's much better built, and the

**HD Media Players**

| WD | Xtreamer | Xtreamer | Zebronics |
|---|---|---|---|
| TV Mini | Xtreamer | Xtreamer Pro | ZEB – MP1000HDMI |
| ₹4,500 | ₹8,990 (WiFi) | ₹14,500 (WiFi) | ₹2,600 |
| 31.08 | 69.13 | 79.35 | 27.75 |
| 10.15 | 33.15 | 41.30 | 9.00 |
| 20.93 | 35.98 | 38.05 | 18.75 |
| | | | |
| 1080p (up-scaled) | 1080p | 1080p | 720p |
| 1 / 0 | 2 / 0 | 2 / 1 | 1 / 1 |
| N / N | Y / Y | Y / N | N / N |
| Y / N / Y / Y / Y | Y / Y / Y / Y / Y | Y / Y / Y / Y / Y | N / N / Y / Y / Y |
| Y / Y / Y | Y / Y / Y | Y / Y / Y | N / Y / N |
| | | | |
| N / N | Y / N | Y / N | N / N |
| N / N | N / N | N / Y | N / N |
| N / N / N | Y / N / N | Y / Y / Y | N / N / N |
| | | | |
| N / N | Y / N | Y / N | N / N |
| N | Y | Y | N |
| N / N | N / Y | Y / Y | N / N |
| N / Y / Y | Y / N / Y | Y / N / Y | N / Y / Y |
| | | | |
| 7.8 | 50.5 | 19 | 10 |
| 8 | 8 | 6.5 | 6.5 |
| 4 | 7.5 | 6 | 6.5 |
| NA | 8 | 6.5 | NA |
| NA | 7.5 | 6.5 | NA |
| NA | 8 | 6 | NA |
| NA | 8 | 6 | NA |
| 6.5 | 6.5 | 6 | 5.5 |

TV market. Some of the features although considered forbidden (when you consider the legality issue) are making their way to players. We're talking about the Bittorrent feature. It's there to make downloading of media simpler and remove the need of having a PC or a download box to do it for you. The ability to stream media from sites on the internet is a nice feature to have. One of the things we noticed on the Xtreamer Pro site was that Youtube functionality was going to be dropped sometime in the future. Google plans to launch Google TV really soon, maybe it's got something to do with that.

While HD transmissions have been started by popular DTH providers, the content available is still at a bare minimal. Till the time you get at least 10-15 channels across all genres, users will have to depend on locally available digital content. Being able to play any movie from your collection without having to change discs is a very convenient to have.

There are still some features we'd like to see. For example, getting e-mail alerts and updates on your Twitter and Facebook accounts would be nice. Audio and video conferencing could be another great possibility. Now that internet connectivity is getting more popular, manufacturers ought to plug in a fully-functional browser as well. All these things are bound to happen sometime or the other. It's definitely not the last we've seen of the HD players.

ability to connect two internal drives totaling up to 4 TB is a nice feature to have. The product becomes much more than just a media player, and for a little more than the Iomega player, it makes good sense. If you're just looking a player that can play HD videos from a drive connected, then look no further than the first WD TV. It's priced at Rs. 6,500 (MRP), and it plays all of the commonly used formats. It also gets our Best Buy award. If you can spend a little more, then the first Xtreamer model is the one you should spend your money on.

We've seen all kinds of players over the last year, and it looks like manufacturers are watching the growth of the HD

**Finally 'surface'-ing**
Microsoft's gigantic coffee table sized touchscreen computer aka "Surface" is set to transition into our living rooms three years from now

**First person shooter**
The Looxcie is a wearable video camera that can upload the last 30 seconds of your life directly to Youtube at the push of a button

# NVIDIA GeForce GTS450

## Forcing their way into the crowded space



MSI NGTS450 Cyclone



Galaxy GTS450 GC version



ASUS ENGTS450 Top

NVIDIA's GeForce GTS450 fits into the lower mid-range bracket. There have been some drastic changes in the ingredients of the recipe – a big drop to 192 CUDA cores as compared to the 336 of the GTX460 GPU, but a somewhat faster core. The cards come with 1 GB of GDDR5 memory with a 128-bit memory interface.

Each one of the three cards came factory overclocked with custom coolers.

The Galaxy GTS450 GC version came with a removable fan design which makes cleaning the card simpler. The same design can be found on some of the other Galaxy cards. The MSI N450GTS Cyclone card came with a fancier heatsink design but with nothing covering most of the card. Even the ASUS card had a similar design but with a hood covering the heatsink.

All the cards ran cool in all the tests. On idle, the ASUS and MSI card dropped to under 40°C whereas under maximum load, they stayed under 50°C in a moderately air-conditioned room. The MSI was the coolest at just 46°C under load which was very impressive for graphics cards.

Just the overclocked GPUs aren't enough to make up for the drop in CUDA cores. We noticed a drop of some 15 to 20 per cent in frame rates in games such as Crysis Warhead. The fastest of the overclocked cards was the ASUS ENGTS450 Top. The MSI NGTS450 Cyclone was just a couple of frames per second slower than the ASUS ENGTS450 in almost all of the benchmarks.

The ASUS is the most expensive at ₹9,500, the MSI card ₹8,900 and the Galaxy card at ₹8,500.

As a gaming card, all of these cards are capable of providing very playable frame rates at resolutions up to 1920 x 1200. It's only when you run games such as Crysis Warhead that you notice the performance dropping well under the 30 fps mark, even with the resolution set at 1280 x 1024. You'll definitely have to reduce quality settings drastically to get playable frame rates in Crysis Warhead.

If you are looking for a cheap gaming card in the range of ₹8,000 to ₹9,000, this should be the card to go for. The cards are priced and perform like the AMD Radeon 5750 cards. The Galaxy GTS450 GC version maybe the cheapest but the frame rates in the demanding games is marginally lower. If you want every bit of performance, and don't mind spending that little more, then the ASUS ENGTS450 TOP is undoubtedly the one for you.

## Scores and contact details

| Brand | ASUS | Galaxy | MSI |
|---|---|---|---|
| Model | ENGTS450 Top | GTS450 GC version | NGTS450 Cyclone |
| Price | ₹9,500 | ₹8,500 / ₹7,500 (MOP) | Rs. 8,900 |
| **Benchmarks** | | | |
| 3DMark Vantage (GPU) | 9944 | 8940 | 9335 |
| Crysis Warhead (1680 x 1050) | 22 | 19 | 20 |
| Company Of Heroes: ToV (1680 x 1050) | 77.4 | 73.33 | 78.3 |
| STALKER Clear Sky (Day, 1680 x 1050) | 28.9 | 25.9 | 26.8 |
| **Ratings** | | | |
| Features | 7.5 | 7.5 | 7.5 |
| Performance | 7.5 | 7 | 7 |
| Build Quality | 7.5 | 7 | 7 |
| Value for Money | 7 | 7.5 | 7.5 |
| Overall | 7.5 | 7.5 | 7.5 |
| **Contact** | | | |
| Company | ASUS India | Technology and Gadgets | MSI India |
| Phone | +91-22-6766 8800 | +91-22-2382 3331 | +91-11-4175 8808 |
| E-mail | reachus@asus.com | mumbai@technologyandgadgets.com | sanyam@msi-in.com |
| Web site | www.asus.in | www.galaxytech.com | http://in.msi.com |

**Market for MeeGo?**
Intel and Nokia's latest linux project, MeeGo will run on the upcoming WeTab tablet. The WeTab will also have access to the Android Market for apps

**Samsung Galaxy Tab**
Samsung has announced the availability of their 7-inch tablet in time for this year's holiday season

**Bazaar**

# MSI Big Bang XPower

## Power unlimited

MSI's new Big Bang XPower shares its name with the Big Bang Fusion P55 board. This one however is an Intel X58 chipset based motherboard designed for extreme gamers which is clear when you see the six PCIe x16 slots. It is possible to have CrossFire and SLI multi GPU support at the same time.

The build is sturdy and the layout is impressive. There is ample space to fit large coolers like the Corsair A50. Instead of having clips on both the sides, the DIMM slots here have them only on the outer side, for easy removal of RAM without having to remove the graphic card.

It doesn't have integrated audio controllers. However, there is a Quantum Wave Audio Card provided for sound. There are a set of voltage checkpoint for voltage measurement.

The most stunning feature of this motherboard is that it has an OC Genie button which overclocks the system without booting into the BIOS.

Performance wise, 3D mark gave a CPU score of 48,705 and PC mark gave an overall score of 9139 which is pretty decent. The XPower is a versatile board, however it's price makes it only feasible for high-end gamers or overclockers who want to setup SLI and CrossFire setups for their gaming systems.
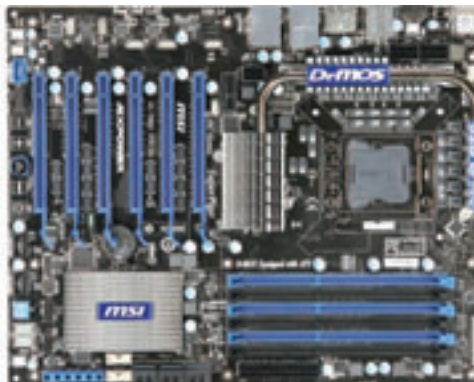
### Specifications
Socket: LGA 1366
Chipset: Intel X58 chipset
6 x PCIex16 slots
Automatic Overclocking

### Contact
**MSI India**
**Phone:** +91-11-4175 8808
**E-mail:** sanyam@msi-in.com
**Web site:** www.in.msi.com
**Price:** ₹18,500

**6.5/10**

| | |
|---|---|
| Features | 7.5 |
| Performance | 7.0 |
| Build | 6.5 |
| Value for money | 5.5 |

---

# Philips HTS 5550

## Great sound but supports limited file formats

The first sight of Philips Home Theatre HTS 5550 will keep your attention arrested for quite a while. Unboxing took more than three people to segregate the satellite speakers and the towers. The glossy black colour combination is followed throughout. The player occupies a considerable footprint and has a glossy front panel surrounded by a metal body. There are a few touch sensitive controls on the sawed off top edge.

The 3D angled speakers are aesthetically pleasing. The angled drivers deliver sound not only towards the front but also to the sides, creating a wider sweet spot so you can enjoy more immersive and cinematic surround sound.

Dolby Digital and 5-channel stereo mode sounded wonderful while watching movies and it was very responsive to the low frequencies. The night mode dynamically controls sound suitable for watching movies at night. You can also sync your audio with video in case they are not in sync by adding or subtracting a delay.

HTS 5550 supports limited video formats. User interface could have certainly been spruced up.

At ₹26,990 we felt that it is pricey for a DVD and full HD home theatre system. Experience is wonderful no doubt, but when buying at that price you should rather invest in a home theatre that supports Blu ray format. like the Philips HTS3560.

### Specifications
Frequency Response : 20Hz to 20kHz;  Total output power : 1200W; four satellite speakers; Satellite speaker impedance : 4 Ohm; Compression formats : DivX Ultra, MPEG1, MPEG2, WMV, avi, MPEG4, XviD;

### Contact
**Philips Electronics India Ltd**
**Phone:** 1800 102 2929
**E-mail:** customercare.india@philips.com
**Web site:** www.india.philips.com
**Price:** ₹26,990

**7.5/10**

| | |
|---|---|
| Features | 7.0 |
| Performance | 7.5 |
| Build Quality | 8.0 |
| Value for money | 7.0 |

# ASUS Sabertooth X58

## Power and strength

The first thing that comes to your mind when you hear Sabertooth is the movie Ice Age. Similar to the character in the movie the ASUS Sabertooth X58 is sturdy and full of raw power.

The ASUS Sabertooth is based on Intel X58 chipset and supports LGA1366 Intel Core i7 processors. The ceramic coated heat sinks and all solid state capacitors give it a sturdy look. ASUS claims the onboard components are military grade.

The layout is pretty spaced out. The area around the processor is covered with heat sinks, but we could easily mount a huge cooler on the processor. The memory slots are spaced out evenly and installing or removing the memory is easy. The PCI slots are well spaced but it would be difficult to set up SLI or CrossFire with big cards.

Cinebench gives a score of 15,545 with multiple CPU and Crysis runs at 95 fps at a resolution of 1024x768 using the CPU benchmark. So in terms of performance, it is similar to Gigabyte GA-X58A-UD3R.

We effortlessly overclocked our Core i7 965 3.2 GHz to run at 3.77 GHz and the board was very stable. With the overclocked setup, Cinebench gave a score of 17,693 and Crysis gave an average frame rate of 104 fps. The scores indicate a 10 – 15 per cent rise in performance without changing too many settings
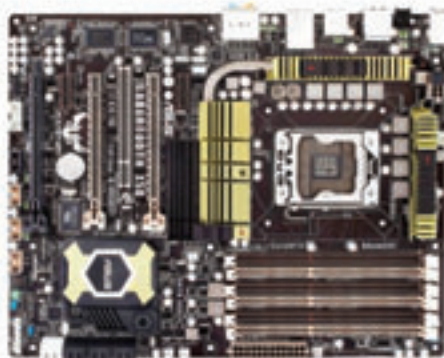
Priced at ₹13,450 the board is for those who spend ₹70,000 – ₹80,000 on their system or are looking to buy a performance gaming rig in a similar price range.

### Specifications
Socket: LGA 1366, Chipset: Intel X58 Express, RAM: 6 x DIMM slots (max 24 Gb), 2 x PCIe x16 slots, 1 x PCIe x16 (at x4 mode), 2 x PCIe x1, 1 x PCI. 2 x USB 3.0, 2 x SATA 3.0

### Contact
**Vinay Shetty**
**Phone:** +91-22-6766 8800
**E-mail:** reachus@asus.com
**Web site:** www.asus.in
**Price:** ₹13,450.

**7.5/10**

| | |
|---|---|
| Features | 7.5 |
| Performance | 8 |
| Build Quality | 7.5 |
| Value for Money | 7.5 |

### Specifications
Socket : LGA 1156, Chipset: Intel P55 Express Support for Dual Gigabit LAN Support for USB 3.0 and eSATA 6.0 3 x PCIe x16, 2 x PCIe x1, 1 x PCI

### Contact
**Rashi Peripheral**
**Phone:** +91-22-4047 0811
**Email:** response@rptechindia.com
**Web site:** www.rptechindia.com
**Price:** ₹18,000

**7.0/10**

| | |
|---|---|
| Performance | 7.5 |
| Build Quality | 7.0 |
| Value for money | 6.0 |
| Overall | 7.0 |

# ECS P55H-AK

## A class apart!

Based on the Intel P55 Express chipset, ECS P55H-AK, the new Black series motherboard, supports unlocked Intel Core i7 and Core i5 processors which lets you overclock the CPU. Though the layout is good, the board tends to flex in parts. The PCI slots are well spaced except for the first PCIe x1 slot which is placed just below one of the CPU heat sinks which might block insertion of graphic cards into that slot. The region around the CPU is covered with three heat sinks. We managed to fit the Corsair A50, but with some difficulty as the heat sinks are elevated.

There are dedicated buttons for power and reset. There is also a dedicated button for clearing the CMOS as well which saves us the need to open up the cabinet and use a jumper for doing so. There is an extra heat sink for PLX PEX 8608 PCIe Gen 2 switch which offers PCI express switching capability which enables high speed networking along with minimizing bandwidth wastage.

We used Intel Core i7 870 while running the benchmarks. 3D mark gave an overall score of 25,935 while Cinebench gave a score of 14,211 for the multiplayer CPU. Real life tests were almost same as GA-X58-UD3R, Video encoding took about 33.02 seconds and the sequential and random file transfers took about 181.81 and 191.22 seconds respectively.

Overall, at ₹18,000, it is a wee bit overpriced but its overclocking abilities and feature rich property makes it perfect for home users.

# Videocon D2h Service

## Slight improvement over cable

Videocon D2h is the latest entrant in the satellite television market. We got a basic set top box from Videocon. The build quality of the box is not very good. The quality of plastic used for remote is also poor. Overall, the quality is average.The menu is feature rich and the interface is also good. There is a noticable lag while scrolling through the channels. There are active services like Active Darshan, Active Games, Active Puzzles. There are tickers for various categories of news. Features like program reminder and parental lock work well.

The set top box uses MPEG 4 DVBS 2 compression. The picture quality is not very good.



The picture is not sharp and looks pixelated when used with large screen. Obviously this is an entry level product with a composite output so can't be used at higher resolutions.

The package bouquets are very economical. The list of channels is also pretty good.

There are three free Hindi movie channels which keep playing the same movie for the entire week. There is movie on demand but the offerings aren't impressive.

Though it is economical at ₹1,390, we would recommend opting for other services or till satellite services improve in India.

### Specifications
Picture capability: MPEG 4 DVBS 2, Dimensions: 262 x 200 x 51 mm, Weight: 1.2 kg

### Contact
**Videocon DTH**
**Phone:** +91-90765 98116
**E-mail:** V.Shyamal@d2h.com
**Web site:** videocond2h.com
**Price:** Set top box ₹1,390
₹300 Installation Charges

**6.0/10**

Features...........................6.5
Performance ..................5.5
Build Quality...................5.0
Value for money .............6.0

**Tried &tested**

**Wide angle shooting**
Canon has unveiled the SX30 IS camera which features the world's first wide angle 35x zoom lens

**Symbian^3 x 3**
The mobile phone giant has announced three new smartphones, the E7, C6-01 and C7 which will be in the market by year's end

# HTC Wildfire

## Android weds Sense, yet again

HTC Wildfire can be thought of as HTC Desire's little brother. Anyone who has seen the HTC Desire will immediately recognise brushed metal trim around the extended glass section of the display. At the bottom, the trim takes on a curved look. The feel of Wildfire is pretty good, though it isn't exactly compact and will feel most at home in larger hands. Despite the seemingly unnecessary bulk, it doesn't make an unseemly bulge in ones pocket.

The 3.2-inch Wildfire runs on Android 2.1 and has a 5 MP camera. The display resolution is extremely poor – at 240 x 320 pixels – an archaic resolution that, (as far as we know), only Nokia persists with. With a pixel density of 125 pixels per inch, the Wildfire's display looks pretty pixellated and there is a marked loss of fine detail in the text, menus and this is also visible in the home screens. The on-screen QWERTY keypad is pretty good despite its rather basic look. In portrait mode things look cramped, but thanks to good screen sensitivity typos were a rarity. The capacitive touchscreen as with all HTC phones was quite fluid.

Audio quality via earphones is good – good clarity, nice bass and pretty good volume levels. Video playback is snappy, although the display would benefit with a higher resolution and a better contrast ratio. Basically, some of the darker colours blend, while shades of grey are missed – not exactly for the portable videophile would be a gross understatement. Call clarity is good per se, with a few reservations. We didn't have any serious issues in any of the zones, and even in zone three, distortion was minimum, with some continuous noise and an occasional loss of coherence but no dropped calls.

Priced at ₹16,590 (MRP), the Wildfire isn't cheap, but it's good value – Android, good touchscreen with decent hardware and good performance. If the lack lustre display resolution and contrast aren't deterrents for you, the Wildfire will satisfy.

### Specifications
CPU: 528 MHz Qualcomm MSM 7225; Display: 3.2-inches, 240 x 320 pixels, 16 million colours; Camera: 5-megapixel; Battery: 1300 mAh; Weight: 118 grams

### Contact
**Bright Point India**
**Phone:** +91-99108 21100
**E-mail:** nitin.pandita@brightpoint.com
**Web site:** www.htc.com/in
**Price:** ₹16,590

**7.0/10**

| | |
|---|---|
| Features | 7.5 |
| Performance | 7 |
| Build Quality | 7.5 |
| Value for money | 7.0 |

# Sony Ericsson Zylo

## Slick Walkman

**For a detailed review, check out http://bit.ly/boQmjd**

The Zylo is a simplistic, yet slick looking handset. The front is dominated by a 2.6-inch display, and the large, attention drawing chrome ring that serves as a joypad. The middle button doubles as the play/pause key within while in walkman mode. The call buttons are well placed, and sufficiently delineated. The slider mechanism is a strong plus. The number keypad looks pretty normal though its usability quotient is actually excellent. The keys have sufficient bevelling to be used without visual supervision and exude good, firm feedback.

The Zylo is a very satisfactory music player. The loudspeaker, owing to the slightly curved rear works fine even if the phone is laid on a table. Audio quality is pretty good, and the volume is quite loud. Plug in the supplied earphones, and prepare to be impressed further. Music flows pretty effortlessly, with good clarity and volume levels.

The camera offers very basic settings, no exposure compensation or autofocus.

In zone one, we had no issues with dropped calls and voice clarity was good. In zone three, we had a problem with static on the line, when the number of available antennas fluctuated between one and zero. There was a marked loss of clarity.

The MRP is ₹9,000, but we've spotted the Zylo selling at around ₹7,800 on the street. A fair price for what you get.

### Specifications
Display: 2.6-inches, 2,56,000 colours, 240 x 320 pixels; Camera: 3.15 MP; Battery: 930 mAh

### Contact
**Sony Ericsson**
**Phone:** 1800 111 800
**Web site:** www.sonyericsson.com
**Price:** ₹9,000

**7.5/10**

| | |
|---|---|
| Features | 6.5 |
| Performance | 7.5 |
| Build Quality | 8 |
| Value for money | 7.0 |

**Octacore mobile CPU**
ARM has announced Cortex A15 for mobile devices. It features 8 cores and achieves speeds of up to 2.5 GHz

**Windows Phone 7**
Microsoft's much awaited smartphone OS, Windows Phone 7 is set to launch in October

**Bazaar**

# ASUS NX90Jq

## The Goliath yells, "Lend me your ears!"

## Specifications
Intel Core i7 720QM, Windows 7 Ultimate, 4 GB DDR3 RAM, 18.4-inch display, Nvidia GeForce GT335M

## Contact
**Alex Huang**
**Phone:** + 91-22–6766 8800
**E-mail:** media_india@asus.com
**Web site:** www.asus.in
**Price:** ₹1,30,999

### 7.0/10

| | |
|---|---|
| Features | 7.5 |
| Performance | 7.5 |
| Build Quality | 8 |
| Value for money | 5.5 |

When we first laid eyes on the ASUS NX90, we were taken aback by the sheer size of the laptop that lay in front of us. The mirror finish, reflective enough to stop anyone in their tracks and make them look is a one of a kind concept seen in any laptop these days. Then again, pretty much every design aspect of this laptop sets it apart from what the lay man's definition of a laptop would be.

One of two laptops in the NX90 series, the ASUS NX90Jq has dimensions that pretty much nullify its portability. The polished aluminum exterior gives it a mirror like appearance and is very aesthetically pleasing but it's a fingerprint magnet and 15 mins of handling the laptop is all it took to tarnish its pristine exterior.

It's vibrant 18.4-inch screen with a 16:9 aspect ratio is a Full HD (1920x1080) LED backlit display. The audio solution selected features speakers by Bang & Olufsen ICEpower. Two uniquely positioned speakers on either side of the screen have been placed as far apart as possible to help improve resonance and sound quality. The speakers sounded exceptionally breathtaking when compared to any other laptop. This is by far one of the best performing audio solutions we have come across on any laptop. The vertical towers project the audio at ear level.

Yet another first, this laptop features two trackpads. Placed on either side of the keyboard instead of the usual up front and centre arrangement, the trackpads initially took a lot of getting used to and were annoyingly inconvenient at first. Each individual trackpad features multi touch support (pinch to zoom), along with ASUS's nifty two finger scrolling capability but the trackpad usage was not as smooth as we hoped.

ASUS could have easily incorporated a numberpad which is missing thanks to the extra trackpad. The keyboard itself is not very nice to use and lacks a tactile feel, though the open space under the keyboard serves as a good palm rest while typing.

Since the laptop has been built for home entertainment and not for office use, the graphics solution, NVIDIA GeForce GT335M (1 GB DDR3) leaves something to be desired if you plan on playing the latest games.

When looking around the laptop at the available ports, the standard set of interfaces were seen along with some new improvements such as 2 USB 3.0 ports and 1 e-SATA combo port.

As expected, the NX90 fared very well on all the benchmarks such as PCMark Vantage, SiSoft Sandra and Maxxon CineBench. Doom 3 showed a frame rate of 187.6 fps. Battery life clocked in at almost 3 hours and it lasted 2 hrs in our multimedia tests.

It will set you back by ₹1,30,999 which suggests that it is a product meant for the niche market and not for someone looking for a common multimedia laptop. It is a solid performer with its minor shortcomings but could be your pride and joy should you have some money lying around.

# Asus U43JC Bamboo

## Is wood good?

**For a detailed review, check out http://bit.ly/980VrG**

The Asus U43JC poses a stylish and elegant design with a pre-dominant bamboo finish on the outer surface of the screen cover-lid. The bamboo finish extends to the palmrest and touchpad surface adding a hint of charm to the attractive keypad layout. A thin steel lining decorates the delicate body contours of the laptop, while the steel coated power button and power mode modifier, add beauty to the fine human body curve design at the top of the keypad. The highlight of the product is the impressive battery life, extending about 4 and half hours. It also had a good outing in the Wi-Fi test with satisfactory results. In the speaker test, we noticed considerable sound distortion at volumes higher than 70 per cent and also very ordinary sound clarity. However, the high definition video playback delivered crisp colours and high image clarity with consistent frame rates. Asus U43JC delivered average frame rate of just 23.67 fps, running Far Cry 2 in medium detail and the resolution set to a modest 1024x768. We were a bit disappointed with the gaming performance of the laptop, and would have appreciated a decent frame rate of around 30fps in medium detail with AA and AF turned off.

Overall, the ASUS U43JC reveals to be a good mid-range multimedia laptop with the potential to play graphics intensive games at low detail or a non-resource hungry 3D game in medium detail. It is priced at ₹61,999 and we feel it offers good value for money considering it is a Core-i7 based laptop.
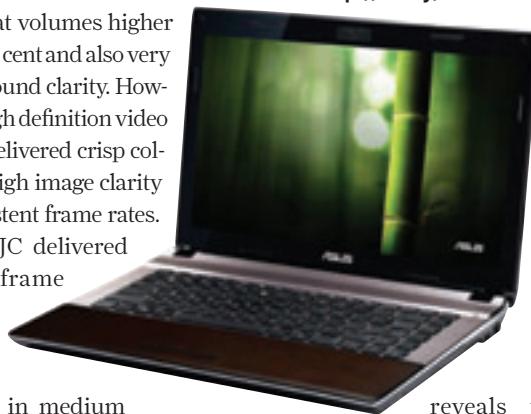
## Specifications
Intel Core i7 processor 620M; 4GB DDR3 SDRAM (1066 MHz); NVIDIA GeForce 310M; Intel GMA HD integrated graphics; Windows 7 Ultimate 64-bit; Weight: 2.4Kg

## Contact
**ASUS Technology Pvt. Ltd.**
**Phone:** +91-22-6766 8800
**E-mail:** media_india@asus.com
**Web site:** www.asus.in
**Price:** ₹61,999

### 7.0/10

| | |
|---|---|
| Features | 7.0 |
| Performance | 7.5 |
| Build Quality | 7.0 |
| Value for money | 7.0 |

# Lenovo Ideapad Y560

## Cannot be ignored

## Specifications
Processor: Intel Core i7, RAM: 4 GB DDR3, HDD: 640 GB.

## Contact
**Lenovo India**
**Phone:** 1800 425 2666
**Email:** pmatthan@lenovo.com
**Website:** www.lenovo.com
**Price:** ₹51,127

### 6.5/10

| | |
|---|---|
| Features | 7.0 |
| Performance | 7.0 |
| Build Quality | 6.5 |
| Value for money | 6.0 |

Lenovo has come up with a small upgrade to Ideapad Y550 series laptops with the Ideapad Y560. The stylish looking Ideapad sports a classy look with designer front cover. The full black colour with an orange border looks good. Weighing 2.7 kg it is a bit on the heavier side.

The Lenovo Ideapad comes with a Core i5 processor and 4 GB DDR3 RAM. The Y560 does not get very hot. The 15.6 inch HD capable screen is good and bright. Also provided are two JBL speakers whose sound quality is top notch. The web-camera is also pretty decent.

The Ideapad Y560 has switchable graphics: integrated graphics and ATI Radeon HD5730 1 GB dedicated graphics. It has only 3 USB ports. It comes with a DVD RW. It also has an eSATA port.

Its 3D Mark Score was 7824 and Doom 3 runs at 139.8 fps. During file transfer we got 39.34 MBps for sequential and 32.48 MBps for assorted file. Wi-fi performance test revealed speed of 38.16 MBps. Battery life test revealed a battery life of 100 minutes.

The Y560 is not compact but the keyboard is very cramped. A lot of space is wasted around the sides which could have been utilized for keyboard. The trackpad is decent but the click buttons are really disappointing.

Priced at ₹51,127, Y560 is a good performer but has a few small glitches. If you are looking for a stylish laptop that performs well you can check it out.

# Cooler Master 690 II Advanced

## Has advanced quite a bit

The Cooler Master 690 II Advanced is a mid tower chassis which comes in two variants-one with and one without the transparent side window. The CM 690 II Advanced like the old 690 is stylish and has retained its tough look.

The front face is made of steel and is easily detachable for plugging in DVD drives. The top panel contains two USB 2.0 ports, the eSATA and audio connects jacks along with the power and reset button. The interiors are clean and spacious. The drive bays have simple locks and sliding trays for installation. The top drive bay has provision for 2.5-inch and 1.8-inch drives. The maximum length allowed for graphic card is 11.96-inch, so a 12.2-inch Radeon HD is going to be too long to fit.

SATA drives can be connected externally using the dock. The VGA holder arm helps in providing support if you set up multiple graphic cards in a Cross-Fire or SLI setup. The chassis is well ventilated with a net which helps keep away dust. Rear holes for water cooling outlet make it ideal for those going in for water cooling solutions. The

**For a detailed review, check out http://bit.ly/boZxP2**

overall build quality is good. At a market price of around ₹5,833, it's a good option for those looking for a base to build their new system, and a great option for those investing at least ₹50,000 on a decent mid-range gaming system.

## Specifications

Mid-tower chassis, 4 x 5.25-inch drive bays, 6 x 3.5-inch drive bays Dimension(WxHxD): 214.5 x 511.8 x 528.8 mm, Weight: 9.56 kg,

## Contact

**Acro Engineering Company**
**Phone:** +91-98919 92406
**E-mail:** marcom_in@ coolermaster.com
**Website:** www.cool-ermaster.co.in
**Price:** ₹5,833

**7.5 / 10**

Features...........................7.5
Performance ..................7.5
Build Quality...................7.5
Value for money............7.0

# Godrej Eon Game LCD TV

## Motion gaming inside a TV

LCD TVs are dime a dozen in the market, but Godrej has come out with an added incentive to the humble category with motion sensing gaming a la Nintendo Wii. The 32-inch Eon Game LCD TV comes with 25 in-built games which can be played using the wireless joystick which comes bundled too. Some of the games that impressed us were Dart, Bowling, Table Tennis among others. Response of the wireless joystick was good in most games, but do not expect impressive graphics.

Build quality is quite impressive. It has a piano black glossy bezel, with a somewhat thicker rear side. There are no connection options on the side. Placement of connectors is facing downwards, so it is some task connecting the ports.

Spyder 3 Elite gave a contrast ratio of 355.67 : 1 which is quite decent. Displaymate tests revealed backlight bleeding but the 256 intensity colour and BW ramps did not throw any unwanted colour tinges. Movie viewing experience was good in terms of video quality, but sound leaves a lot to be desired. It scales down HD quality videos conviniently. Playing off the USB was easy as well and one interesting aspect is that it can read text files. Viewing photographs off the USB was also quite quick.

This innovative LCD TV is priced at ₹40,000. Although for a 32-inch the price is a bit on the higher side, but not much for casual gamers.

### Specifications
Screen size : 32 inch; Resolution : 1368 x 768; 25 in-built motion sensing games; Connectors : 2 x HDMI; 2 x USB; 2 x Component

### Contact
**Godrej Appliances**
**Phone:** 1800 209 5511
**Web site:** www.godrej.com
**Price:** ₹40,000

**6.5/10**

| | |
|---|---|
| Features | 7.0 |
| Performance | 6.5 |
| Build Quality | 7.0 |
| Value for money | 6.0 |

# Croma CREL 3127

## Average performance at an economical price

### Specifications
Screen size : 42-inch LCD; Resolution : 1920x1080; Response time : 5 ms; Viewing angle : 178 degrees (H and V)

### Contact
**Infiniti Retail Ltd.**
**Phone:** +91-22-6761 3600
**E-mail:** service@cromaretail.com
**Web site:** www.cromaretail.com
**Price:** ₹49,990

**5.5/10**

| | |
|---|---|
| Features | 5.0 |
| Performance | 6.5 |
| Build Quality | 6.5 |
| Value for money | 5.0 |

CREL 3127 is a 42 inch LCD TV from the electronics retail chain Croma, which is a part of their 'Handpicked by Croma' series. The LCD TV comes with a glossy black bezel and a pre-attached TV stand, which eases the TV setup. The build quality of the TV is quite sturdy with a strong plastic rear. The connectors on the CREL 3127 are not overwhelming like we see on most LCD TVs. It has two SCART connectors which are rarely used in India. It has three HDMI ports and a VGA port alongwith a component port.

User interface is ugly. There aren't many options to play around with for the discerning viewer. The bundled in remote control has stiff buttons. The TV has 12 sources to choose from.

CREL 3127 gave a contrast ratio of 312.11 : 1 (at 50 per cent brightness / contrast levels) in the Spyder 3 Elite tests which is quite decent. Prominent screen burning at higher brightness and contrast levels is bad. Movie viewing experience was decent, although darker scenes did show a lot of graining. Gaming was a joy on this monitor, with excellent rendering of images and there was no lag in the mouse response. This LCD TV comes at an economical price point of ₹49,990.

# HTC Desire

## Highly Desirable

Although the Desire doesn't share the metal construction of the HTC Nexus One, it's a beautiful looking device – slim and sleek. The keys have a matte chrome finish that oozes suave sex appeal. The earpiece consists of twin slits with a chrome trim, and this is, perhaps, the sexiest part of the phone.

Incidentally, the microSD card isn't hot swappable. The power and screen lock button is on the top and is designed to merge with the body. The 3.5mm handsfree jack also sits on the top. On the bottom, a slight protrusion marks the micro USB port for data and charging. Even the rocker-type volume key on the left side fits nearly flush but is very usable.

The Desire's display lives up to the hype. It's huge – 3.7-inches, though not as large as the 4.3-inch display on the Touch HD2. Even better, the Indian market gets a super LCD in lieu of the AMOLED that the Desire was supposed to ship with. Colours are crisp without being over saturated and the display has a great contrast and blackness level. Equally wonderful is the sensitivity of the display – the capacitive technology used is of the highest quality – swipes, gestures, the on-screen keypad – everything works very well.

The Desire features HTC Sense. Although Android has a fairly good menu system, and the Sense UI is not as omnipresent as it was on the HTC Touch HD2, it's still welcome, if not totally necessary. The icons, the interface itself and the beautiful display add to a highly usable experience that is gimmicky yet practical and satisfying.

The browser is lightning fast, supports pinch zooming which is quite useful.

With the Froyo update, the camera records videos up to a resolution of 720p. The videos are clear, although there is blur when moving due to the lack of a proper image stabilisation system. Colours are rich, and in bright light, you won't complain. Indoors the quality drops considerably.

The five-megapixel clicker provides decent clarity for a cell-phone camera, but it's not the best around. The flash unit is very intense, and illuminates a dark room, up to a distance of eight feet pretty well.

HTC endowed the Desire with a loud, but tiny loudspeaker. While at maximum volume it's pretty loud, it distorts a bit. The earphones sound a lot better. Although the bass is lacking and the treble is rolled off, this is pretty much on par with the headsets of most handsets.

Call clarity is good. But the antenna is not. In zone three, we faced disconnected calls on more than one occasion, accompanied by a loss in vocal clarity. In zone two there were sporadic periods of silence, but this wasn't happening with any regularity, that made us suspect a service provider issue. The loudspeaker is loud on-call, but a maximum volume there is jarring and the voice distorts. The earpiece is also pretty loud, but doesn't distort. When using the loudspeaker, the battery cover vibrates.

As desirable as the, err... Desire is, it's not without the odd annoying hiccup. There's the mediocre battery and antenna performance .

The price we got for the Desire was an MOP of ₹28,900. This is the price being offered by Tata Docomo, who is bundling the device with a data plan that offers 500 MB of free data usage every month for the first six months. If only the handful of quirks were ironed out we'd be pleased to live with it. HTC has just announced the Desire HD and the Desire Z, though, and these might be worth looking at. We recommend waiting and watching, unless you have to buy a high-end handset now – in which case the Desire, will make, (most of), yours come true.

OS: Android 2.1; Display: size: 3.7-inch; resolution: 480x800 pixels; CPU: Qualcomm QSD8250 (1 GHz); RAM: 576 MB; ROM: 512 MB; expansion: microSD; Camera: 5-megapixel; battery: 1400 mAh; weight: 135 grams

### Contact
**Bright Point India**
**Phone:** +91-99108 21100
**Email:** nitin.pandita@brightpoint.com
**Web site:** www.htc.com/in
**Price:** ₹28,900

**7.5/10**

| | |
|---|---|
| Features | 8.0 |
| Performance | 8.0 |
| Build Quality | 7.0 |
| Value for money | 7.0 |

**Tried &tested**

**Bulldozer coming**
AMD to review first samples of the upcoming Bulldozer process which is slated to launch in early 2011

**Olympus E-5**
Olympus launches its latest E-5 DSLR camera model which features a 12.3MP LiveMOS sensor

# Moserbaer MBIK42FHD

## Low price, poor performance HD TV

The Moserbaer MBIK42FHD is a 42-inch full HD LCD TV coming in an all-black glossy body supported on an oval black glossy stand. Looks wise there is nothing striking about the TV as it has a very standard design with glossy bevel running around the edges and the speaker section spread out on the lower side. It has a range of connectivity options like two HDMI ports, two S-video ports, one USB port, one VGA port etc. Also the USB port can only play images and music off a pen drive, no video.

User interface of the TV is really bad with very limited functionalities. USB mode does not segregate the images and music, and you have to use the remote to go individually to the folder,

which is annoying. Remote control is of very poor quality, infact it has two extra buttons which serve no purpose. The DisplayMate tests gave poor results. 256-bit black to white ramp showed a definite greenish and yellowish tinge towards the black end. Reverse text test was poor. Only the 256-bit colour ramp was somewhat better to look at. Spyder3Elite

gave a very high white luminance at 370.8 cd/m^2 and poor blacks. HD movie viewing really brings out the poor blacks in the TV. We noticed a high amount of backlight bleeding in completely darkness. Low light scenes tended to be very grainy. There is prominent banding in dark scenes. Text readability was quite poor. The panel also tends to heat up within 20-30 mins of TV viewing, which is not desirable. It is available at an economical price point of ₹49,990. Ideally we would not recommend this TV as its output is not up to the mark.

### Specifications
Panel : TFT LCD; Screen size : 42-inch; Resolution : 1920x1080p; 2 HDMI ports; 1 USB port; Weight : 19 kg

### Contact
**Moserbaer India Ltd.**
**Phone :** +91-11-459 4500
**E-mail :** shilpi.kapoor@moserbaer.in
**Website :** www.moserbaer.in
**Price:** ₹49,990

**5.5/10**

| | |
|---|---|
| Features | 5 |
| Performance | 5 |
| Build Quality | 6 |
| Value for money | 6 |

### Specifications
Resolution: 5 MP, Sensor type: CMOS, Sensor size: 1/2.5, Movie formats: H.264 (MOV), ACC LC

### Contact
**Kodak India Pvt. Ltd.**
**Phone:** 1800 22 4949
**E-mail:** in-feedback@kodak.com
**Web site:** www.kodakindia.com
**Price:** ₹8,999

**7.0/10**

| | |
|---|---|
| Features | 7 |
| Performance | 7.5 |
| Build Quality | 7.5 |
| Value for Money | 6.5 |

# Kodak PlaySport Jx3

## Playfully sporty

The Kodak PlaySport Jx3 is a compact camcorder capable of recording HD videos at 1080p. The stylish looking PlaySport comes with a 5 megapixel CMOS sensor for video quality.

The PlaySport looks sturdy and seems it can take shocks due to accidental falls. It's also waterproof up to three meters under water. There is a menu for settings but is not well defined.

The PlaySport has a 2-inch screen. There are buttons on front panel for recording, menu, delete and a navigation key. The

buttons are hard but of good quality. A lot of space is wasted around button area which could have been used for a larger screen.

The video clarify under brigt conditions is good. In a well lit room the video quality is decent but with dim lights, the video becomes grainy. The PlaySport performs well under water.

The PlaySport has a 4x digital zoom which is better avoided. The microphone is

**For a detailed review, check out http://bit.ly/9pMBGg**

sensitive and of good quality. The PlaySport can take still photos but the quality is average.

The compression on it is not very good and to be able to record 1080p videos for three hours you will need a 16 GB card which is not included in the package.

At ₹7,999 it is a good buy but to be able to use it you will have to spend ₹2,500 on a SD card.

# Bazaar
## mini
**QUICK INSIGHTS FROM INDEPTH TESTS**

The Digit Test Centre receives and tests enough products on a monthly basis to fill hundreds of pages with reviews. Each and every one of the products reviewed in Digit is tested thoroughly, and put through the same rigour as you're used to seeing in our comparison tests. Bazaar mini is our way of ensuring that you get the results of our extensive testing in a more timely manner, and in a compact and easy-to-read format. Send feedback and suggestions on this new section to testcenter@thinkdigit.com.

## GRAPHICS CARDS

### Palit Sonic GeForce GTX460
Price: ₹16,700

### Zotac GeForce GTX460 AMP edition
Price: ₹15,999

#### SPECIFCATIONS

| Palit Sonic GeForce GTX460 | Zotac GeForce GTX460 AMP edition |
|---|---|
| GPU Core Clock ...................... 700 Mhz | GPU Core Clock .......................810 Mhz |
| No. of cores...................................... 336 | No. of cores...................................... 336 |
| Memory Size ...........................2048 MB | Memory Size...........................1024 MB |
| Memory Type.............................GDDR5 | Memory Type.............................GDDR5 |

#### TEST CENTRE RATINGS (All Scores out of 10)

**Features............................ 6.0**
Overclocked by 25 MHz, DirectX 11 compatible, NVIDIA 3D Vision ready

**Features............................6.5**
Overclocked, DirectX 11 compatible, NVIDIA 3D Vision ready, Zotac firestorm to overclock GPU, 2-way SLI

**Performance .....................6.5**
Crysis Warhead: 28 fps
Stalker Clear Skies: 30.5 fps
Far Cry 2: 75 fps

**Performance .....................7.5**
Crysis Warhead: 30 fps
Stalker Clear Skies: 35 fps
Far Cry 2: 88.84 fps

**Build quality .......................5.0**
Average quality, fan looks cheap, power cables of poor quality

**Build quality .......................6.0**
Plastic body not of good quality, fan looks cheap

**Value for money...............4.0**
Performance does not justify pricing.

**Value for money...............5.5**
Priced in the range of GTX 465 cards - somewhat expensive

#### WE SAY

**5.5**

The Palit Sonic card doesn't run as fast as the Zotac GeForce GTX460. The Zotac GeForce GTX460 Amp! is the clear winner among the two. 2 GB memory doesn't help in performance. Price asked for the card is too high.

**6.5**

The Zotac GeForce GTX 460 outperforms GTX 465 in two benchmarks out of four, so it makes sense to go for it rather than the GTX 465 series if you are not into overclocking. If you are the kind who knows how to overclock GPU and has tried it before than go for GTX 465 which can be overclocked.

**ALSO SEE:**
1) **Zotac GeForce GTX465**
   *Digit Sept 2010*
2) **Sparkle GeForce GTX465**
   *Digit Sept 2010*
3) **Asus GeForce GTX465**
   *Digit Sept 2010*

**ALSO SEE:**
1) **Zotac GeForce GTX465**
   *Digit Sept 2010*
2) **Sparkle GeForce GTX465**
   *Digit Sept 2010*
3) **Asus GeForce GTX465**
   *Digit Sept 2010*

**Tablet Printer**
HP Photosmart eStation printer has a
dock to print directly off a tablet

**Seesmic Desktop 2**
Seesmic has released an update which has
immediate support for Twitter, Facebook,
LinkedIn, Google Buzz, Foursquare, and Ping.fm

**Bazaar mini**

## MOBILES

### Micromax X510 (PIKE)
Price: ₹5,499

### LG Cookie Zip (LG510)
Price: ₹8,399

### Micromax Gravity X600
Price: ₹5,999

### Micromax X550 (QUBE)
Price: ₹5,999

### SPECIFICATIONS

| | | | |
|---|---|---|---|
| Dual-SIM (GSM); 2.8-inch TFT resistive touchscreen (240x400); microSD up to 16GB; 2MP (1600x1200); Battery: 8 hrs talk, 384 hrs standby; | CDMA EVDO Rev 1; 3-inch display, 240x400 pixels, 262K colours; 70 MB inbuilt, microSD expandable; Camera: 2 MP; weight: 90 grams | SIM card................Dual SIM Display.....................3.2-inches resistive touchscreen (240 x 320) Camera..............................................2MP | SIM card...................................Dual-SIM Display..............3.2-inch TFT resistive touchscreen (240x400) Memory.........expandable up to 16GB |

### TEST CENTRE RATINGS (All Scores out of 10)

**Features............................ 6.0**
Micromax X510 (PIKE) has similar features to the X550 (QUBE). Dual SIM touchscreen phone.

**Performance ......................5.5**
Modest performance across all the tests. Poor captured video quality. Device loudspeaker clarity also bad.

**Build quality .....................6.5**
Built with an all - plastic body and is slightly bulkier than X550.

**Value for money .............6.0**
Expensive when compared to others in its category.

**Features............................ 6.0**
LG510 has a poor touch interface. Ability to drag widgets on to your main screen is nice.

**Performance ................... 5.5**
In zone three we had issues with clarity and at times there was static on the line. In zone one and zone two we had no issues.

**Build quality .....................7.0**
Build quality is decent, but for the price, we expected more.

**Value for money............... 5.5**
MRP of ₹8,399 seems excessive for this device.

**Features............................7.0**
Motion sensor based dual-SIM phone. Dual microphones and speakerphones add the extra zing.

**Performance ......................6.5**
An average performance overall. Bluetooth transfer rate was ordinary at a paltry 111 KB/s.

**Build quality ......................7.5**
Sleek, stylish, made of plastic with brushed aluminium finish.

**Value for money...............8.0**
It is a feature-rich handset and offers good value for money.

**Features............................6.5**
The Micromax X550 (QUBE) is a feature-rich social-networking, touchscreen phone, with a 3D Cube UI.

**Performance ....................7.0**
It performed decently across all the tests with an average score in the loudspeaker audio and photo colour tests.

**Build quality ......................7.0**
It is built tough and looks quite attractive.

**Value for money...............7.0**
A bit expensive but great features for the price.

### WE SAY

**6.0**

The Micromax X510 (PIKE) lost out both in terms of performance and ergonomics in comparison to the X550 (QUBE). Lack of a hardware keypad, does not help its cause with unfriendly and ageing touch-screen interface. Hence, we would not recommend it for a best buy or value for money option.

**ALSO SEE:**
1) **Fly B430**
   *Digit April '10*
2) **Intex IN 2020E**
   *Digit April '10*
3) **Wyncomm Y50**
   *Digit September '10*

**6.0**

At that price, you get a decent set of features, but nothing that is not spectacular value for money. In fact, the major selling point of this phone isn't its feature set but its touch interface. And in our opinion, its interface is the major deterrent – it's not intuitive and fluid and using this phone is at times a frustrating experience. So zip it – this is one cookie you can skip.

**ALSO SEE:**
1) **LG Cookie Fresh**
   *Digit September '10*
2) **LG Cookie Plus**
   *Digit September '10*

**7.0**

At ₹5,999, the X600 is a feature rich handset that offers a lot of functionality at a good price. The dual GSM SIM support is a nice plus and the gravity sensor based SIM swapping is the real icing on the cake. It gives a hefty bang for buck at ₹5,999.

**ALSO SEE**
1) **g-Fone 345**
   *Digit April '10*
2) **Fly E106**
   *Digit April '10*
3) **Intex IN 4410**
   *Digit April '10*

**7.0**

The Micromax X550 (QUBE) truly holds an edge in its price category, with the innovative 3D Cube UI and a rich assortment of features. It is priced a bit high but the pricing does complete justice for whats on offer.

**ALSO SEE**
1) **g-Fone 345**
   *Digit April '10*
2) **Fly E106**
   *Digit April '10*
3)**Intex IN 4410**
   *Digit April '10*
4) **LG GW 620**
   *Digit May '10*
5) **LG GM 200**
   *Digit May '10*
6) **LG GC900 Viewty Smart**
   *Digit June '10*

**SDXC card readers**
XElecom have come out with MR-A005 and MR-A006 memory card readers which can read SDXC cards

**Microtek's mobile dreams**
Microtek, a producer of energy saving equipment has decided to manufacture mobile handsets later this year

## PORTABLE HARD DRIVES

## MEMORY

### Iomega Skin Hard Drive
Price: ₹5,900

### Transcend StoreJet 25D2-W
Price: ₹6,300

### Apacer AC203 500GB
Price: ₹4,250

### Kingston HyperX H2O
Price: ₹6,550

### SPECIFICATIONS

| | | | |
|---|---|---|---|
| Capacity................................500 GB | Capacity.........................................500 GB | Capacity...........................................500GB | Memory capacity........................2 x 2 GB |
| Interface...........................................USB 2.0 | Interface .......................................USB 2.0 | Interface........................................USB 2.0 | Memory Type..................................DDR3 |
| Dimensions..................124 x 84 x 18 mm | Dimensions...............129.9 x 82 x 17.3mm | Dimensions...............124 x 80 x 14mm | Frequency.................................2000MHz |

### TEST CENTRE RATINGS (All Scores out of 10)

**Features..............................6.5**
Impressive skin design, backup software can be downloaded from web site.

**Features..............................5.5**
Bundled backup software helps in backing up and synchronizing data easily.

**Features..............................7.5**
Rubberized strip on the body adds nice grip and appeal.

**Features..............................7.0**
Cool and good looking metal body. Metal tube for water to pass through.

**Performance .....................6.5**
Speeds are pretty decent, sequential read speed is 32.01 MBps , sequential write speed is 27.61 MBps.

**Performance .....................6.5**
Real world tests single 4GB file: 28 MBps write and 30 MBps read speed. Performance comparable with other drives.

**Performance .....................6.5**
Real world tests: 23.57MBps write and 30.14 read speeds. Photoshop CS2: 39 seconds. Average performer.

**Performance .....................6.5**
Good for overclocking. Setting up liquid cooling is easy. Low operating temperatures even without liquid cooling.

**Build quality ......................6.0**
Build quality is good. Decent grade plastic used for panels

**Build quality ......................7.0**
The drive comes in an all-white glossy finish with rubber feet.

**Build quality ......................7.0**
Sturdy, sleek and stylish build, weighing just 143grams.

**Build quality ...................6.5**
Light weight but sturdy. Good finish with rounded edges.

**Value for money...............5.0**
For this price, one can buy a larger capacity drive.

**Value for money...............6.0**
Quite economical for the price point of ₹6,300.

**Value for money............... 7.5**
At ₹4,250, it's pretty cheap and affordable. Recommended

**Value for money...............3.0**
A bit on the higher side as far as pricing goes.

### WE SAY

**6.0**

If looks and style matter to you, certainly this is a product for you. The performance is good and design is small and sturdy. A USB 3.0 interface would have been nice to see in this produce. Pricing does not seem fair but the stylish looks make it one of a kind product.

**ALSO SEE:**
1) WD My Passport Studio 640 GB
   *Digit June '10*
2) Hitachi Simple Tough 500 GB
   *Digit July '10*
3) WD My Book 3.0(march)
   *Digit March '10*
4) Iomega Prestige LPHD-UP
   *Digit February '10*

**6.0**

If you're a Mac enthusiast and looking for a good peforming portable drive this one is for you. Transcend bundles a travel pouch which is well design to fit in pockets enables user for easy carry option. It is an average performer with good looks compared to other in makets.

**ALSO SEE:**
1) Iomega Prestige LPHD-UP
   *Digit February '10*
2) Buffalo Mini Station  HD PX320
   *Digit February '10*
3) A-Data Nobility NH-92
   *Digit February '10*
4) Iomega eGo RPHD - TG
   *Digit February '10*

**7.0**

The Apacer AC203 external hard drive is reasonably sleek and stylish.  The 500 GB capacity is sufficient, and provides good value for money. At ₹4,250, it makes a decent buy.

**ALSO SEE:**
1) WD My Passport Studio 640 GB
   *Digit June '10*
2) Hitachi Simple Tough 500 GB
   *Digit July '10*
3) WD My Book 3.0(march)
   *Digit March '10*
4) Iomega Prestige LPHD-UP
   *Digit February '10*
5) Buffalo Mini Station  HD PX320
   *Digit February '10*

**7.0**

The Kingston HyperX H2O makes sense for high-end gaming enthusiasts. It is a lot cheaper than Corsair Dominator GT DDR3 kit and gives an overclocking option. Kingston on its website does not recommend overclocking but with liquid cooling it should do just fine.

**ALSO SEE:**
1) Kingston KHX1600C9D3K2
   *Digit September '10*
2) Corsair Dominator GT DDR3 6GB
   *Digit September '10*
3) Zion 4GB DDR3(april)
   *Digit April '10*

## Privacy charter from Google
German government has asked Google and its competitors in
online map services to come up with their own guidelines on
data protection by December

**Bazaar mini**

| POWER SUPPLIES | | MICE |
|---|---|---|



**Corsair AX1200**
Price: ₹18,000

**Cooler Master Silent PRO Gold**
Price: ₹14,000

**Verbatim Rapier V1**
Price: ₹5,400

### SPECIFICATIONS

| | | |
|---|---|---|
| Type....Intel Form Factor ATX 12V V2.31, SSI Form Factor EPS 12V V2.92 Dimension...................150 x 86 x 200 mm Output Power....................................1200W | Type....Intel Form Factor ATX 12V V2.3 SSI Form Factor EPS 12V V2.92 Dimension...............150 X 160 X 86 mm Output Power................................800W | Frame Rate.................................7800fps Modes.......Standard and Gaming mode Weight.................................................162 g |

### TEST CENTRE RATINGS (All Scores out of 10)

| | | |
|---|---|---|
| Features..................................7 Top of the line product - voltage and short circuit protection and modular design. | Features..................................7 Similar to AX1200 but the 24-pin connectors are not detachable like on the AX1200. | Features..............................7.0 The mouse has 9 buttons out of which 7 are programmable. Hot-key performs triple-click action. |
| Performance ........................8 Low operating temperature, Fan does not make much noise. Twelve cables should be enough. | Performance .....................7.5 Operating temperature are very low, Even on faster rotation, fan makes no noise | Performance ....................5.5 Gaming performance is good, there is no lag. However, the side buttons are tough to use and the click wheel is a little loose. |
| Build quality ......................... 8 Solid metal body, cable quality also very good. | Build quality ......................... 8 Black metal body is very strong, Cables are of good quality. | Build quality ..................... 6.0 Not very impressive. Sides have a sticky rubbery texture. |
| Value for money ...............7 Quality comes at a price and so does Corsair AX1200 | Value for money............... 7.5 This is a product which justifies the pricing. | Value for money...............4.0 Overpriced. You get better ones with more features, for cheaper. |

### WE SAY

| 7.5 | 7.5 | 6.0 |
|---|---|---|
| An 80plus Gold 1200W power supply is only for those who want to setup a 3 way SLI or Cross-fire. The AX1200 comes bundled with 16 SATA cables, 6 PCIe cables, 12 peripheral cables which is more than sufficient. For the price AX1200 is a good stable power supply. For those who constantly upgrade graphics it is a good investment. | For those who want to stick to 2-way SLI/CrossFire, the Cooler Master Silent PRO Gold is a good option. With the 80plus Gold rating it is a stable power supply. It comes bundled with 9 SATA cables, 4 PCIe cables, 4 peripheral cables which might just be enough. If you dont plan to upgrade your to 3 way SLI this is the product for you. | Verbatim Rapier V1 is used for playing games and normal us-age. In standard mode the side buttons can be used for web navigation. In gaming mode, it can emulate the entire keyboard. It is perfect for playing first person shooting games.  It is highly overpriced considering the build quality and discomfort to the user. There are cheaper mice with more functionalities. |

**ALSO SEE:**
1) **Corsair HX 850W**
   *Digit January '10*
2) **Cooler Master GX550**
   *Digit March'10*

**ALSO SEE:**
1) **Cooler Master Silent Pro 1000M**
   *Digit September '10*
2) **Corsair HX 850W**
   *Digit January '10*

**ALSO SEE:**
1) **Logitech G5**
   *Digit July '10*
2) **Razer Deathadder**
   *Digit July '10*

**Mobile internet traffic**
According to Zokem, a Finnish mobile analytics company, native apps drive 50% of all mobile data volume

**GPS on Exilim**
Casio's Exilim is GPS enabled megazoom that can record location data even when the camera is off

| MOTHERBOARD | SOFTWARE | DVD PLAYER | MEDIA STREAMER |
|---|---|---|---|

**Gigabyte G41m-Combo**
Price: ₹2,900

**Emsisoft Anti-malware 5.0**
Price: ₹560

**Intex Premium N-322**
Price: ₹2,629

**iRadioPOP Plus**
Price: ₹1,500

## SPECIFICATIONS

| | | | |
|---|---|---|---|
| Socket.................................................LGA775<br>North Bridge.................Intel G41 Chipset<br>South Bridge.............................Intel ICH7<br>Slots............................1 x PCI Express slot | OS supported.....Windows XP / Vista, 7<br>System requirement................100 MB<br>disk space, 512 MB memory, 1 GB<br>recommended | 5.1 channel, Dolby Digital Decoder,<br>USB Port, Formats supported : DVD,<br>ACD, VCD2.0, CD-R, CD-RW, USB,<br>MP3, MP4, JPEG, DivX | USB 2.0 Plug & Play. |

## TEST CENTRE RATINGS (All Scores out of 10)

| | | | |
|---|---|---|---|
| **Features** ............................ 6.0<br>Has support for both DDR3 and DDR2 memory in dual channel configuration. | **Features**..................................7<br>Complete scanning features like scheduled scan, browser integration, etc. | **Features**.............................5.5<br>Range of connectivity options User interface is not impressive. | **Features**.............................6.5<br>Access to counless internet radio and TV stations. Features Recording supported. |
| **Performance** .................... 6.0<br>3Dmark06 CPU score: 4094 Doom 3 FPS(800 x 600):31.4 Overall performance is okay but the gaming performance is poor. | **Performance** .....................6.5<br>Does not affect startup time, runs parallel to other antivirus. CPU usage 1 per cent on startup and 85 per cent during scans. | **Performance** .....................4.5<br>Performance is poor.Video quality isn't upto the mark Output on large screen shows lot of noise. | **Performance** .....................5.0<br>Offers good quality and the clear sound with proper streaming for radio station, but noise obvious in full screen. |
| **Build quality** .................... 6.0<br>Crowded layout on a compact - not very impressive. | **Build quality** .........................7<br>Clean interface with a separate menu for advanced controls. | **Build quality** .......................5.5<br>Buttons on remote are of poor quality | **Build quality** ................... 6.0<br>Design and build quality is similar to flash drives |
| **Value for money**............... 7.0<br>The G41m is priced very economically at ₹2,900. | **Value for money**...................7<br>Anti-malware cum Anti-virus for one price is a good buy. | **Value for money**...............6.0<br>Economically priced but not up to the mark on quality | **Value for money**............... 7.0<br>At ₹1,500, it's pretty inexpensive. bandwidth to play with. |

## WE SAY

| **6.0** | **7.0** | **5.5** | **6.0** |
|---|---|---|---|
| Installation of hardware components is time consuming. The chipset gets heated up while running benchmarks on integrated graphics. It is economically priced but performance is mediocre. Moreover, there is hardly any price difference in DDR3 and DDR2 RAM. Gop for the board if you have purchased a really expensive RAM or processor and want an economical board. | Considering the cost ($12 or Rs 560 approx) and the features (realtime protection, pretty large database, scanning and cleaning your computer of malware, scheduled scans and updates, etc.) the Anti-Malware is definitely worth a try. You can download a 30-day trial version from its website and after using it decide for yourself. | Go for this DVD player only if you are short on cash and want a no frills basic DVD player that can also play MP3 songs and read off a USB drive. It takes a lot of time to load. The quality of video is not upto the mark. There are a lot of grains visible when video played on large screen. | It's a small USB device helps you in streaming TV/ Radio station over internet at free of cost. Not great if you're expecting high quality and performance on low bandwidth connections. Require 2Mbps for good video streaming. Some stations work in the default player while some use a browser. If you are a person who travels a lot and want portable TV/radio with you, the iRadioPOP Plus can prove to be handy. |

**ALSO SEE:**
1) **Gigabyte GA P55A UD7**
   *Digit June '10*
2) **Gigabyte GA 510 UD**
   *Digit May '10*

**ALSO SEE:**
1) **McAfee Total Protection 2010**
   *Digit July '10*
2) **AVG Internet Security 9.0**
   *Digit February '10*
3) **K7 Total Security 10**
   *Digit February '10*

**ALSO SEE:**
1) **Soyer 338MC**
   *Digit July'10*
2) **Philips DVP 3588**
   *Digit July'10*
3) **Onida DFX 5979**
   *Digit July'10*
4) **Moserbaer MBI K666AMU**
   *Digit July'10*

## Apple's acquisition
Apple has acquired Polar Rose, a Swedish company specialising in face recognition technology and software

## IBM acquires analytics firm
IBM has announced its plans to acquire the analytics company Netezza for around $1.7 billion in cash

**Bazaar mini**

| DESKTOP PCS | | HEADSETS | |
|---|---|---|---|



**Lenovo Ideacentre B300**
Price: ₹38,200



**Simmtronics SDC2711S**
Price: ₹ 13,490



**Logitech USB Headset H530**
Price: ₹3,245



**Logitech Laptop H555**
Price: ₹3,295

### SPECIFICATIONS

| | | | |
|---|---|---|---|
| Processor..........................Intel Core 2 Duo RAM...............................................4 GB DDR2 HDD........................................................640 GB | Processor..........................Intel Pentium Dual-Core E5400 processor RAM..........................................................4GB HDD........................................500GB SATA | USB Connection, Frequency response: Headset: 20 Hz-20,000 Hz, Microphone: 100Hz – 10,000 Hz | USB Connection, Driver 31mm diameter, Frequency response: Headset: 20 Hz-20,000 Hz, Microphone:100Hz –10,000 Hz, |

### TEST CENTRE RATINGS (All Scores out of 10)

**Features................................. 6**
Not very feature rich, Comes with Wi-Fi and Bluetooth, bundled software for camera.

**Features.............................5.5**
It comes with the basic configuration with compact design.

**Features...............................7.0**
Enables noise cancellation and full stereo sound. Equalizer switch for changing music style.

**Features...............................7.0**
USB connection, microphone supports noise cancellation.

**Performance.....................6.5**
PC Mark score: 5,196 , Cinebench gave a score of 6101 using multi-CPU configuration. Doom ran at a decent 89.7 fps.

**Performance.....................4.5**
PC Mark Vantage score of 4023, 3D Mark 06 gives overall 266 points while 4 GB assorted file take 133 seconds.

**Performance..................... 6.0**
The sound quality is decent. The headset performs well with internet calls but not so great with music.

**Performance.....................6.0**
Test tracks gave satisfactory performance. Microphone mute switch doesn't work well while using it on voice call.

**Build quality.......................5.5**
Cheap plastic body and keyboard

**Build quality ......................... 5**
Glossy finish, compact design but not the best built chassis.

**Build quality .....................,,7.0**
Over the head design, cable is thick and sturdy.

**Build quality ..................... 6.0**
Neck strap design and adjustable ear pieces are quite clumsy.

**Value for money ............... 4**
Performance does not justify the pricing.

**Value for money...................6**
Well priced but could be priced much economically.

**Value for money...............6.0**
At ₹3,245, it's somewhat expensive.

**Value for money...............6.0**
While it has a decent feature set, it could have been cheaper.

### WE SAY

**5.5**

The Lenovo Ideacentre looks good on desk. It is a somewhat expensive product. It does not make sense to buy for a product just for the looks when it is expensive and does not perform well.

**5.0**

The PC is sufficient for desktop applications, but not for gaming. The pricing of ₹13,490 is not justified without an LCD. It's a good buy for people who do not want to assemble their PC.

**6.5**

The build quality for the headphones is good. It is an average performer. Great for internet calls but not so much for music. It's not a portable headset. Suitable for home or office use.

**6.0**

Not well isolated so those around you can easily hear your music. Ideal for chatting on Skype. We would not recommend these for heavy music listeners.

**Steam drivers**
Steam introduces feature which allows updating of graphics card drivers

**Cuil.com falls**
Cuil, the search engine started by ex-Google employees recently shut down

## EARPHONES

| | | | |
|---|---|---|---|
| **Philips SHQ 1000**<br>Price: ₹645 | **Philips SHQ 3000**<br>Price: ₹1,999 | **Philips SHQ 4000**<br>Price: ₹2,499 | **Skullcandy Titan**<br>Price: ₹2,099 |

### SPECIFICATIONS

| | | | |
|---|---|---|---|
| Sensitivity: 110dB; Impedance: 16 ohms; Cable length : 1.2m; Sweat proof | Sensitivity: 102dB; Impedance: 16 ohms; Cable length: 1.2m; Sweat proof | Sensitivity: 102dB; Impedance: 16 ohms; Cable length: 1.2m; Sweat proof | Impedance: 16 ohms; In-ear; Cable length: 1.3m; Frequency Response: 20 Hz to 20,000 Hz |

### TEST CENTRE RATINGS (All Scores out of 10)

| | | | |
|---|---|---|---|
| Features ..... 6.5<br>Performance ..... 6<br>Build Quality ..... 7<br>Value for money ..... 7.5 | Features ..... 6<br>Performance ..... 6<br>Build Quality ..... 7<br>Value for money ..... 4.5 | Features ..... 6<br>Performance ..... 7<br>Build Quality ..... 6<br>Value for money ..... 6.5 | Features ..... 6<br>Performance ..... 7.5<br>Build Quality ..... 6.5<br>Value for money ..... 5.5 |

### WE SAY

| | | | |
|---|---|---|---|
| The sound output is quite good, but not an audiophile grade good. Mids were very crisp and there is no distortion on medium volumes. Sound separation does get affected at higher volumes. Bass is mild and not very boomy. At ₹645, this is a decent buy. **7.0** | Sound quality is good. Mids are crisp but bass is mild. Sound separation isn't great at high volume. We did not experience any distortion. At a price point of ₹1,999, we felt that SHQ 3000 is a bit overpriced. **6.0** | Build quality of the headphones is strong as far as the in-ears are concerned, but the flexible neckband is not as strong as we would have liked. Sound signature is decent. Good at mids, but bass is subdued. A bit expensive at ₹2,499. **6.0** | Beautifully designed. Wire starts from driver section without sheathing - can cause loosening. Sound signature was quite good, mids were vivid. Most music genres sound good on these. The price of ₹2,099 is ideal for this set of earphones. **6.5** |

## EARPHONES | FLASH DRIVE | CPU COOLER

| | | | |
|---|---|---|---|
| **Skullcandy Full Metal Jacket**<br>Price: ₹3,559 | **Transcend JetFlash V90 Classic**<br>Price: ₹3,000 | **IQ Pro 4GB**<br>Price: ₹625 | **GlacialTech Alaska**<br>Price: ₹2,333 |

### SPECIFICATIONS

| | | | |
|---|---|---|---|
| Impedance : 16 ohms; In-ear; Cable length : 1.3m; Frequency Response : 20 Hz to 20,000 Hz | Capacity: 16 GB<br>Dimensions: 13.1 x 33.8 x 4.8mm<br>Weight: 7g | Capacity: 4 GB, USB 2.0 compatible | CPU sockets: Intel LGA775/ 1156/ 1366, AMD AM2/AMD AM3<br>Fan Speed: 700 – 1600 RPM |

### TEST CENTRE RATINGS (All Scores out of 10)

| | | | |
|---|---|---|---|
| Features ..... 6.5<br>Performance ..... 6.5<br>Build Quality ..... 7<br>Value for Money ..... 5.5 | Features ..... 7.0<br>Performance ..... 6.0<br>Build ..... 7.0<br>Value for money ..... 5.0 | Features ..... 5<br>Performance ..... 6.0<br>Build Quality ..... 5.5<br>Value for money ..... 4.0 | Features ..... 6.0<br>Performance ..... 8.0<br>Build Quality ..... 6.0<br>Value for money ..... 8.0 |

### WE SAY

| | | | |
|---|---|---|---|
| The performance is good and build is sturdy. At the price, Skullcandy Full Metal Jacket is definitely not a steal, but if you are a Skullcandy fan or the kind of person who likes stylish products you should definitely check it out. **6.5** | Comes with a fold-up design that keeps the drive safe within the metal body. Can be used as a keychain. Bundled software enables features such as PC locking and data backup. Average performer. Price is more than other 16 GB flash drives products. **6.0** | Looks are simple and the build quality is average. In synthetic tests, it gives an average read speed of 13.2 MBps. Although at par with the Trascend JetFlash V90 Classic, it's not as sturdy. At the price ₹625, it's somewhat high for its features. **5.0** | Installation is a little troublesome. Involves the overhead of tightening of screws at the base within a very limited area. However, you can have it installed and running in about 25 to 30 minutes. Highly recommended - performance delivered is pretty amazing. **7.0** |

## HEADSETS | SOFTWARE | SPEAKERS

| | | | |
|---|---|---|---|
| **Smart SH11**<br>Price: ₹915 | **Smartinfocomm SH-04**<br>Price: ₹895 | **Mundu IM for iPhone**<br>Price: Free | **F&D A111**<br>Price: ₹1,990 |

### SPECIFICATIONS

| | | | |
|---|---|---|---|
| Operation Distance: 30 m; Frequency Response: 30 - 20,000 Hz, Modulation : FM/Mono | Impedance: 32 Ohms; Sensitivity: 108dB; Cable length: 2.5 m | Supports open source protocols like Facebook, Gtalk and XMPP. | Power output 18W RMS output, USB/SD cards,frequency: 65Hz~20KHz |

### TEST CENTRE RATINGS (All Scores out of 10)

| | | | |
|---|---|---|---|
| Features ... 7.0<br>Performance ... 5.0<br>Build Quality ... 5.0<br>Value for money ... 5.0 | Features ... 6.5<br>Performance ... 6.5<br>Build Quality ... 6.0<br>Value for money ... 7.0 | Features ... 6.5<br>Performance ... 8.0<br>Build Quality ... 7.0<br>Value for money ... N.A | Features ... 5.5<br>Performance ... 5.5<br>Build Quality ... 6.0<br>Value for money ... 5.5 |

### WE SAY

| | | | |
|---|---|---|---|
| Overall build quality is poor. Sound quality is okay but needs adjusting using the scan and reset buttons on one of the ear pads. FM sound quality is good. Cheaper alternatives are available and for a little more, there are better quality products. **5.5** | Not the cheapest pair of headphone in the market but is among the best in the price band. If you are looking for a pair of headphones and are on a tight budget you should definitely check them out. **6.5** | It is a handy IM app to have but it does not support proprietary protocols like Yahoo, MSN, ICQ and AOL. Better alternatives such as Nimbuzz (free) are available. **6.5** | Audio quality is decent – some distortion at high volumes. Not having display makes navigation problematic while playing with USB. Poor low frequency reproduction. Built quality is good. For the price, one would expect more powerful speakers. **5.5** |

## SPEAKERS

| | | | |
|---|---|---|---|
| **F&D F700U**<br>Price: ₹3,990 | **Tech-Com SSD 5700R**<br>Price: ₹4,100 | **Tech-Com SSD 5900R**<br>Price: ₹3,889 | **Tech-Com SSD 6100R**<br>Price: ₹4,900 |

### SPECIFICATIONS

| | | | |
|---|---|---|---|
| Power output: 80W ouput, FM Radio, frequency: 28 Hz - 20KHz | Power output: 8W x 5 + 25W (RMS) | Power output: 8W x 5 + 25W (RMS) | Power Audio: 8W x 5 + 25W (RMS) |

### TEST CENTRE RATINGS (All Scores out of 10)

| | | | |
|---|---|---|---|
| Features ... 6.0<br>Performance ... 6.0<br>Build Quality ... 5.5<br>Value for money ... 6.0 | Features ... 5.5<br>Performance ... 5.5<br>Build Quality ... 5.0<br>Value for money ... 4.5 | Features ... 5.5<br>Performance ... 3.5<br>Build Quality ... 4.5<br>Value for money ... 4.0 | Features ... 5.5<br>Performance ... 4.5<br>Build Quality ... 5.5<br>Value for money ... 4.0 |

### WE SAY

| | | | |
|---|---|---|---|
| Sound quality is good with clear bass. Has external storage options such as USB/ SD memory cards. Good buy for its performance but we wish the price was lower. At ₹3990, it's a decent buy with a good feature set, build quality and performance. **6.0** | Very similar to the Tech-Com SSD 6100R. Performance wise, sound quality is better than the SSD 6100R and SSD 5900R. Compared to the F&D's F900U, these lag far behind. It is a wee bit overpriced, nonetheless, you can put this on your list. **5.0** | Build quality is not very good. At low volumes, it's average at best. At higher volumes however, it it loses all detail and it get somewhat irritating. These have better bass than the other SSD 6100R model. You really want to think before getting one of these. **4.0** | These 5.1 speakers might appeal to some with its cool dial on the front. However, the dial is made of poor quality without markings on it. Clarity is good, unless bass is switched on. Bass distorts. At this price, we suggest keeping this off your shopping list. **5.0** |

## Gmail

Eversince Google began its Gmail service, it has transformed the way we have interacted. Within a span of two years, Google has enhanced its customer base to over 170 million users. Its user interface is mostly self-descriptive and you'll find yourself at ease with most functions, but there are several other features that improve functionality to a very large extent.

## Priority Inbox

The latest feature Gmail has introduced is the new Priority Inbox. It targeted and incorporated multiple features from Google Labs into the primary Gmail UI. We recommend this new feature, especially if you receive large volume of incoming mail.

Priority Inbox promises to segregate your email into important and not so important, so that you don't have to waste unnecessary time.

The Priority Inbox works off algorithms that keep track of user choices and deciphers a relevant pattern in terms of importance in all incoming email. Based on this data and existing trends, it fixes priority for each incoming email. The

sections under Priority Inbox. Google employees report that such an interface saved about 13 per cent of their time.

For Priority Inbox to function efficiently it has to learn your preferences initially where you have to mark your mail either as important or not important. This is carried out by the two buttons that get added to the Gmail tool panel after enabling Priority Inbox. The yellow button with a '+'



One of Gmail's most efficient functions is its search

important mails are tagged and occupy the uppermost segment of your mailbox. Mail gets segregated into Important and unread, Starred and Everything else. Apart from these three default sections, you also have the ability to customise

sign marks a mail as important. The white button with a '-' sign deselects an important mail. The algorithm's efficiency is dependent on the usage of this feature. The degree of relevance shall get better only with a larger number of incoming



Priority Inbox saves you a lot of valuable time

mails, consistent mail content and predefined filters

The Priority Inbox has a certain degree of flexibility. After a user chooses to enable the Priority Inbox, an additional tab appears in the Google settings panel. The user is given the option to:
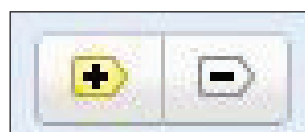


Mark your email as Important by clicking on the + sign

select Priority Mailbox as the default mailbox, disable priority inbox completely, override filters, or include all mails under a single label.

## Search queries

Say, you have postponed reading a lot of mail and have read a few in between and left many unread. Gmail only has 100 conversations per page but your unread items are scattered in subsequent pages. To be able to view all your unread mail at once, use the search query `label:unread` in the search box on top of the Gmail page. Similarly, appending queries such as `is:starred`, `is:unread`, `is:read` and `is:chat` can be used within Gmail to sort through starred, unread, read and chat message respectively. For example a search query like `in:trash is:unread` searches for all unread mail presently in the trash folder.

You can also search messages with tags like from, to, subject and folder. Use of operators such as `OR` is also allowed. For example `from:digit OR to:digit after:2010/04/02` searches for all mail sent to, and received from digit after April 2, 2010. The `|` character can also be used in place of `OR`. The search term followed by `in:foldername` will search for your search term only within the folder specified. Default folders include Inbox, Trash, Spam, and Sent Folder.

## Security options

Gmail always keeps a log of your activity. So if you are suspecting somebody of hacking into or logging into your



Make alterations to your Priority Inbox from the Settings page

account without your knowledge, you can keep track of this through the 'Last Account Activity' feature. You will find this feature at the bottom of the Gmail page, in the footer region. By clicking on details option present at the end of the 'Last Account Activity' line you can check the exact date, time, IP and type of access (browser, mobile, POP3) etc. used to log in into your account

While you are accessing your Gmail account if it is simultaneously being accessed from another location, the Last Account Activity will show its details on the 'Concurrent Session Information' list. From here you can choose to



Gmail multiple login information

terminate the other sessions by selecting the option 'Sign out of all other sessions'.

## Send an email to a Group in one shot

There might be instances where you keep mailing to a common list of people. It is a tedious job to remember each and every name and keep adding them every time you write a new mail. Gmail allows you to group a list of email addresses into a single group.

Click on "Contacts" on the left of your Gmail inbox, and then click on New group to create your new group. You can add new contacts into this group or just include existing contacts in this group. When you want to send a mail to the particular group, start typing

the group name in the To field while composing a new mail, the auto-complete feature of gmail will pick it up and give the group name under the suggested list of names. You can select the group from the list and the mail will be sent to all contacts added to the group.

## Hard disk full?

Gmail changed the game for free email services by introducing high storage inboxes. Now Gmail gives its users more than 7GB of storage. Most of the users never avail most of this space though. You can use up any vegetating space in your Gmail account with the Gmail Drive shell extension. Download this app at http://www.softpedia.com/get/Internet/E-mail/Mail-Utilities/GMail-Drive-shell-extension.shtml. It is a Shell Namespace extension that creates a virtual filesystem using your Gmail inbox, letting you use your Gmail account as a local storage medium. The free space available on your Gmail account appears as a drive in My Computer of your system. Any file copied into this drive is sent as a mail attachment to the mailbox.

## Irritated by ads?

If you get annoyed by ads appearing at the top above the tool panel of your Gmail account, they can be turned off by disabling the "Web Clips" option from Settings > Web Clips. These ads are Google sponsored links.



If you're low on disk space, add some space from Google

## Google Labs

Gmail has managed to give a cushion couch feel to its users with many Google labs features that save time and increase functionality. They enhance interactivity and handiness and are always a



An often ignored feature is web clips

respite from the conventional ways of mailbox management. All the Labs features can be enabled or disabled from the 'Settings' menu under the 'Labs' tab. Following is a list of a few important Lab features worth mentioning.

## Canned responses

If you are used to typing similar replies to certain incoming mails, this added feature to the Compose page enables a person to reuse a previously saved response. Just create a response, save it, and use it as and when required.

## Undo send

Very often we end up with a big 'oops' moment right after hitting that send button. If you accidentally sent a message you that you didn't mean to, Google Labs provides you with an Undo feature with the option to retrieve your mail and cancel sending for about 30 seconds after you have sent your email. A few seconds after the appearance of the "Your message has been sent" line, the retrieval of the message is possible.

## Wrong Bob

If you accidentally sent a mail to Tara instead of Taran, enabling this Labs feature automatically could save you from near disaster. It verifies similar names in your sent lists. If there are several people with

similar names in the list, it gives a prompt before sending out your email allowing the user to verify, and if required change the sender address.

## Mouse gestures

Mouse Gestures is a time saving and efficient feature added into Gmail. To go to the next mail after reading a mail, a user has to navigate to the "Older" tab at the corner of the page, or go back to Inbox and select the particular mail. This feature enables you to do the same by just the combination of clicks and gestures. First right-click your mouse, and with the key pressed, drag it towards the left. Similarly, if you hover to the right, you go to the next mail. If you hover to the left, you go to the previous mail. If you hover upwards, you go to the inbox.

## Inserting images

Normally with Gmail you can only attach images if you format it as an HTML email. Google Labs lets you activate another feature to incorporate graphics in the

main body itself. After enabling this feature all you have to do is just drag the picture from a folder and drop it in the body of the mail while it's being composed.

## Yahoo! Inquisitor

The Yahoo! Inquisitor is a free search plugin now available for three major internet browsers Internet Explorer, Firefox and Safari. It is also available as a free search app for the iPhone platform. Originally a search technology for the Safari browser before being acquired by Yahoo!, it now has two additional beta versions of search plugins for both IE and Firefox.

Yahoo! Inquisitor lets you simply type your query into the search box. Apart from assisting you with the regular auto complete feature and suggestions, its search technology uses a system of just in-time searching to show probable results for your query, related websites as well as suggestions for refining your search while you are typing in your search term. It personalises the results based on your search behaviour and keeps track of your search history and bookmarks to display results from your browsing history as well. Inquisitor try's to understand your usage and preferences,
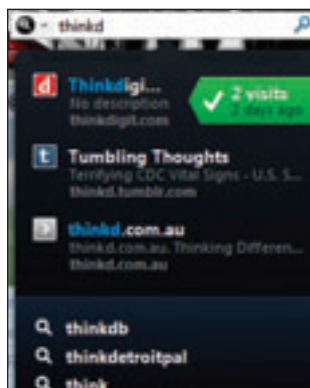

Auto suggest at its best

learning and modifying your results as you search.

Inquisitor by default uses Yahoo search for acquiring its results, but you can change your default search engine or use a different search engine entirely. You can also assign customised keyboard shortcuts for each of them. The latest version of Inquisitor also points to alternative relevant links from Amazon and Flickr based on the user preferences.

## UI design

The most appealing part of the inquisitor plugin is its user interface design. The UI presents results in large easy to read grey boxes directly in your browser below the search field where you type in your query rather than opening a new web page. The more letters you type the more refined

your search suggestions get. Favicons and two lines of content are also presented along with the search results to give you more details regarding the page. Abbreviated news results from two different sources also appear at the very top, as and when applicable. Apart from showing you the results while keeping track of your history, you can use it to find previously visited websites. It shows the link to previously visited websites, the number of times you have visited it and the time when you did it.

## Configuring Inquisitor Settings

To configure the setting for Inquisitor, in Safari go to Preferences and click the Inquisitor logo on the right. In Firefox, select Add-ons from the tools menu and locate Inquisitor on the list. Click on Options to change its settings. In Internet Explorer after starting a search using the plugin, an option for "Search Options..." will appear at the bottom of the drop down list containing the results. Click on it to access the settings. Using the settings you can change the number of results displayed and the default search engine.

## The Inquisitor iPhone App

Inquisitor also comes in the form of an iPhone App. The App more or less works like the browser plugin while the search results come streaming in without being heavy on the iPhone processor, or slowing down your key strokes. It is worth mentioning that the application is actually ridiculously fast and efficient. You can see results in the drop down being refined as you are typing in your search term. More importantly it's so fast that you can type in your query

in less than four seconds after launching the app on your iPhone making it faster than starting a cold search on the native Safari browser. You can view the presented results in an integrated Webkit browser


Inquisitor is lightning fast on the iPhone

without having to switch back to Safari.

After going through the results if you choose to go through to a particular webpage or article by clicking on it, it will then be framed by the app. A toolbar is present at the top of the app which allows you to go back to your search results making the process of navigation very fluid. You can always go out of the app into the iPhone's regular Safari browser to view the page. You can also choose to email yourself or anyone else the links for later viewing on your computer.

## Orb

Orb is a freeware (though not open source) utility which empowers users to stream their media to any Internet connected device, be it a mobile phone, a laptop or gaming consoles like Xbox 360 or Nintendo Wii. For the purpose of demonstration we shall be using a laptop as the media server and a Symbian 60v5 mobile


Search suggestions popout inside your browser

Search suggestions popout on iPhone

phone as the remote internet connected device.

Orb has a Windows/Mac only client on the server side but on the remote device side any device with a Web Browser and a streaming media player will do. Hopefully Orb will come up with a Linux Client soon (your mileage with WINE may vary) and then it can proudly call itself completely platform independent.

## On your laptop

As enunciated above, the laptop in this case will act like the streaming server via Orb. Orb can stream almost all kind of media including photographs, audio and video. It is assumed that the laptop has access to all the media you want to stream. The laptop is connected to a broadband Internet connection, preferably a proxy less line.

Your first step would be to obtain the Orb Client suitable for your system, you can get it either from http://www.orb.com/en/download_orb or if you are on Windows then you can find a copy of the latest setup (2.50+) on the Mindware DVD.

Installation has two major steps, the first being registering for your Orb account, if you already have one switch to the 'Login' tab at the prompt for registration and enter your 'Login Name' and 'Password'. If you don't have an account, it is important to register at this point as it will be difficult

to find the option for registering online. The next step during installation will be to select directories you want Orb to index in order to stream your media. You can add multiple paths and it automatically searches for all kinds of media it supports, recursively within the directories.

Once it has finished indexing Orb will minimize to an icon in your notification tray, from where the Orb Control Panel can always be invoked to change indexed media settings and other modifications. It is recommended to have a decent processor and ample RAM for smooth on the fly encoding.

## On your mobile

For the handset, we used a Nokia 5800 (running Symbian S60v5) as our remote device over an EDGE connection for accessing the media. Point your web browser to http://mycast.orb.com/ and authenticate yourself with the login credentials. It is important to note, that you should try and use the default web browser of your device and not a third-party application such as Opera Mini or Opera Mobile, the reason behind this is that Opera won't be able to launch your device's media player and instead will give you a 'sdp' link to download.

Past this point, the interface
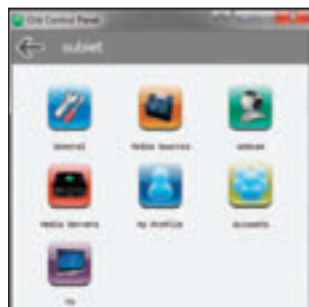


You can change your streaming settings from the Control Panel

is very intuitive. Whenever you will first try to stream it will do a self speed test, and the results will be displayed to you in Kilobits per second on the bottom right. Just below that in the bottom center, there is streaming quality selection bar, just click on any speed under or nearest to your network speeds, 80 might be a good compromise. The top navigation bar lets you select between Photographs, Audio, Video, TV (Only if you have a TV tuner card, else you would have to skip this option during installation) and File Browser mode, under each of them there is a similar interface with smart selections like most played and recently added.

One neat use we found of Orb was its ability to access the integrated web cam of your laptop if it has one, this can very easily be used as basic surveillance system. On a closing note we would like to point out that Orb enables the file browser function by default, so you are effectively streaming all your files (not just in the indexed directories) over the internet, so tread carefully.

## Soundbooth CS4

Adobe Soundbooth has always been the tool of choice for both amateur and semi-professional sound editing enthusiasts and now in its CS4 edition Soundbooth has added a whole lot more of functionality to an already impressive features



Orb's Interface on your remote device

list. In this tips and tricks section we'll look at some of the basics and touch upon some of the new features; such as version control through Snapshots, multi-track mixing, extract audio feature and a whole lot more.

For the purpose of this tutorial we played around with a few stock sounds downloaded from www.freesound.org – a great resource for getting your hands on different sound samples such as loops, bass lines, synths and riffs.

## Customising Workspace

Soundbooth's default workspace is full of panels and each panel has several tabs such as Effects, Markers, History, Properties etc. To the uninitiated it can all be a bit overwhelming. Thankfully Soundbooth allows you to customise and save your Workspace. There are three main panels on the screen apart from the main Editor window that shows your timelines. You can simply drag any of the tabs in the right panels into whichever section you desire. On dragging a tab you get a 3d box like indicator of where the tab will be placed. Dropping the tab when the central section of the box is highlighted will add it as a new tab in the same panel. Many of the tabs such as Properties, Video, Scores are not really required for quick access and you can simply close them by clicking on the X in the

tab name. Once you've customised the Workspace, click on `Window > Workspace > New Workspace` to save your workspace. If you want to go back to the default workspace, select Default from the drop-down menu at the top-right of the screen.

## Mixing multi-track files

Now this is one of the most long-awaited features in Soundbooth. This feature



Dragging the effects tab to the middle panel

allows you to layer one track over another to create multi-instrument compositions. You can either play around with loops of different instruments such as drums, bass and guitar riffs or work on a simpler project such as adding a background score to a voiceover. The process is pretty simple. When you first drag a file into your editing workspace, you will instantly see its waveform for the different channels. To insert multiple tracks click on the Tracks dropdown in the editor and click Insert Waveform into new Multitrack file. After that you can add many

more tracks from the same dropdown by clicking Add Audio track.

## On screen options

If you select a particular sound clip on the timeline you will notice controls that allow you to add fades, adjust volume, adjust panning, and edit in/
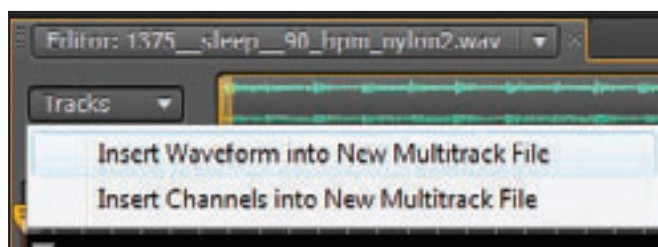


Creating a multitrack file
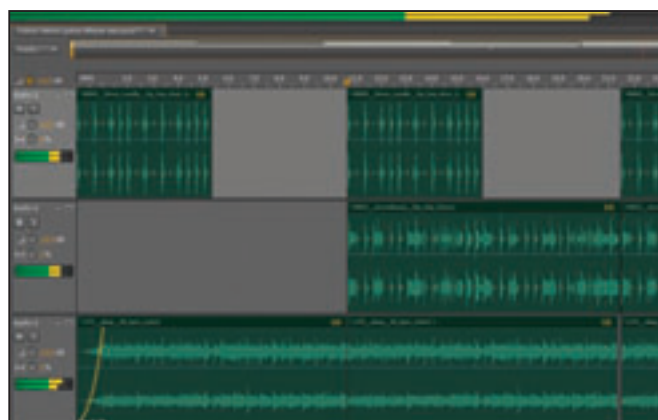


Mixing multiple tracks
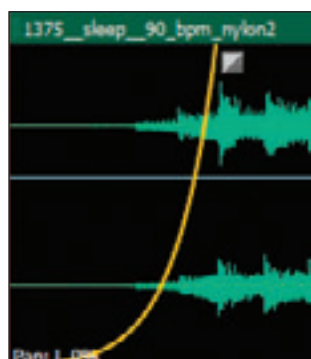


Adding fade

out points. To add fades simply drag the boxes at the top right or left hand corners of the sound clip. A yellow line will appear that reduces the volume of the clip along its slope. You will also notice buttons to adjust volume and panning i.e. spreading the sound signal into the left or right channel.

The in and out points basically crop the clip. If you hover your mouse at the edges of the clip, the points will appear automatically. You simple drag left or right to crop. The edit button will open the clip in zoomed view. This allows you to finely change certain elements of the waveform. Once

you're done with the edits you can return to the main window by clicking on back.

## Versioning and history

There are two ways to control versioning and history in Soundbooth. The application will keep a track of each and every step you take while you're working on your project. The steps are displayed in the history panel at the bottom left corner of the screen. You can click on any of the steps to go back to that previous state. But the history has a limitation – it will not be saved if you quit Soundbooth, even



On-Clip option to edit, change volume and panning

if you were to save the project. Which is why the new Snapshot feature comes in handy. To save a particular state that your work is in, click the Snapshot button in the History panel. To restore a Snapshot, click on the button and click the name of the Snapshot. This feature is very useful to get back to different states and try out different approaches to the processing that you're doing.

## Adding Effects

To add particular effects to a clip all you need to do is select the clip, and go into the edit function. Here you will find the effects panel consisting of the effects rack on the right hand side. You can click on Stereo Rack Preset to get a full list of effects presets that you can apply. Once you've selected a preset, say a special effect called Ethereal, the various sound processes component acting upon the effect will be shown in the rack. You can click the



Adding effects

green power button to activate or deactivate a particular component. You can even customise the effect by clicking on the settings button for each of the effects components. Once you're done with it, simply click
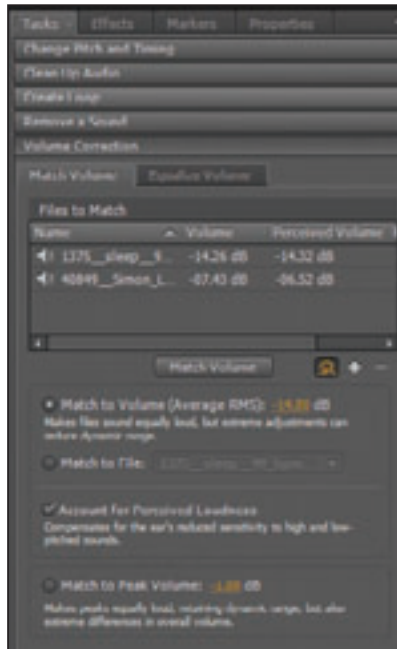


Adjust and match your file's volume

on Apply to File or Apply to Selection, whichever might be the case. Some of the effects are actually post production presets to fix audio such as Remove Hiss. To find some of the most standard effects, head to the Effects menu on the top menu of the application.

## Matching Volume

Very often we need to work with files or clips that vary greatly in loudness. The variation can be within the clip itself or when compared to another clip. To be able to mix such files, we have to make them sound the same volume level. There are two quick ways of doing this - Volume Equalisation and Volume Matching. To equalise volume within a clip select the Clip. Go to the edit view and click on `Processes>Equalize Volume Levels`. This is especially useful when working with voice recordings where

variations are common. To match volume levels of two or more separate clips you need to go to the Tasks tab in the left panel and click on Volume Correction. Now drag and drop the files that you wish to process, into the given space. To get stats on the files such as Volume, Perceived Volume and Peak click on the little magnifying glass button right next to the Match Volume button. Now, you can match the volume to a specified RMS value such as say -10 dB or match it to the average volume of one particular file. Tick the relevant option and hit the Match Volume button. You will see a summary of the changes in dB levels that were made to the various files.

## Recording voice

Once you launch Soundbooth you will see an empty editing area. To start recording a voice clip simply click on the red button at the bottom of this empty editing area. Alternatively you can also go to `File > Record` or hit `[Ctrl] + [R]`. This will launch the recording dialog. Here you just specify the source ie. Microphone device and click record. Once done name the file and click save.

## Important shortcuts

Since Soundbooth is an editing application it is of course more mouse friendly. Still, there are a few keyboard shortcuts that can help you get by in the interface very quickly. The first one every editing enthusiast should know is - `[Space]` for start and stop playing clip. Switching quickly between the Time Selection tool [T], the Move tool [M], the Hand tool [H], and the Zoom tool [Z] is important. As you make your
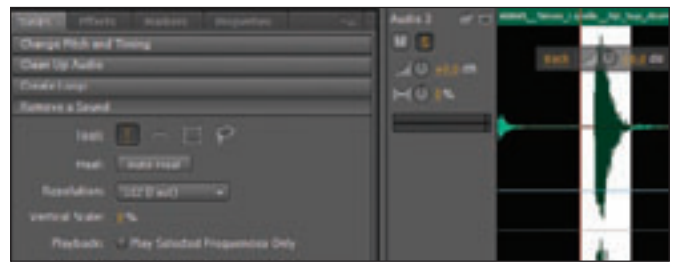


The Autoheal feature in Soundbooth at work

way in Soundbooth you will feel the need for more shortcuts. For a complete list of shortcuts, go to `Edit > Keyboard Shortcuts`.

## Extract Audio

Sound booth allows you to extract the audio from a video file and then work on it with the full range of editing options; not just volume etc. This is one of the new features introduced in CS4. To do this first import the video file into Soundbooth but in a multitrack file `[Ctrl]+Shift+[N]`. In the Editor panel, click Extract Audio in the upper right of the video clip. Soundbooth will create an audio clip on a new track.

## Using Auto Heal

The Auto Heal function allows you to get rid of unwanted disturbances that occur in your clips such as a loud noise or

a pop. To use this function go into the Remove a Sound option under the Tasks tab in the left panel. For removing a short burst type noise from your waveform zoom in as much

as possible by hitting `[Z]` and selecting the bit that you want to get rid of. Then hit the Auto Heal button. What this will do is edit the pop or noise to blend in with the surrounding audio.

## Normalising audio

Normalisation takes the highest peak points of the waveform and accordingly raises the entire wave form proportionately. This doesn't necessarily make the clip louder but more uniform sounding. To normalise a clip go into the edit view for that clip, hit `Process > Normalize`. Alternatively you can use the shortcut `[Ctrl] + [Alt] + [N]`.

## USBWebserver

If you're managing multiple domains using Drupal with USBWebserver and WinSCP, imagine a scenario where you



USBWebserver enables you to have all your site's files on your pen drive

wouldn't need to have your web server in one static location or computer. What if you are a web developer on the fly who works across multiple computers which are either

not connected to each other, or not on a web server connected to the internet. What if you are a developer who is testing out various versions of his site and just needs to present his platform or web site to a client or a friend and show how the site would look before it actually goes live? It is all possible to do this by having a web server and the site installed on a USB Drive and if you have the ability to launch a web server on any computer. All this can be done without having to install any software onto that computer or host your web site online.


Install the latest version of Drupal


Setting up USB webserver

Traditionally to be able to launch a dynamic web site you would have to install a web server bundle onto a computer on which you would be working on. For this workshop we shall be considering the popular Apache, MySQL, PHP bundle. The bundle lets you host your pages and databases required by your web site on a local server. Similarly, while deploying your site on the internet you would need to lease or setup your own physical web server and the site would be accessible through a unique domain.

To make any changes to the site you would need to use an FTP client like File Zilla or WinSCP. With the convenience of being able to setup a web server on a USB stick though,

you can take your work anywhere you go and not have to install any software on the computer you are presenting or temporarily working on. But it is important to keep in mind that while a USB stick increases portability and convenience but is not the fastest way to run a web server.

## Web Server on USB

USBWebserver is a bundle of major web software like Apache, MySQL, and PHP with additional features to help you run them from a USB device or simply a CD if necessary. Since it supports PHP, you can install popular software platforms like WordPress and Drupal onto it. We will be using Drupal later on in this workshop to illustrate the management of multiple domains. You can install the latest version of USBWebserver from www.usbwebserver.net.

Once you have downloaded the file, all you need to do is unzip the file to extract the folder with the necessary files. Note that there is no actual installation required. To run the server it's as simple as executing the usbwebserver.exe file present in this folder. Executing the file will launch the Apache server along with

PHP My Admin and MySQL services. So basically all you have to do is copy this folder onto a USB device like a pen drive or an external hard disk and run USBWebserver.

## Installing Drupal

Now let us look at installing Drupal onto this portable web server. Drupal is one of the leading open source content management systems primarily based to run on an Apache server running PHP. Download the most recent non development version of Drupal from www.drupal.org. Drupal comes with a net web interface for easy quick installation of the package. Just unpack the contents of the downloaded file and place the contents of the file into the root directory of your USB web server. The file
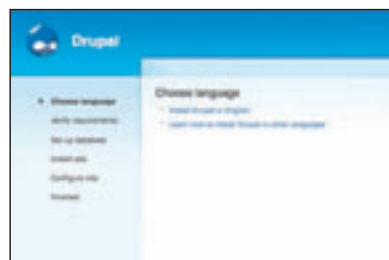

Follow the on screen instructions for installing Drupal

should unpack into a drupal-x.x folder. You might have to change the permissions for this particular site so that the installation file will automatically create a new configuration file for drupal. Make sure that writing is allowed onto this directory by the web server. The easiest way to set permissions to make it writable is by chmod o+w sites/default on the web server.

Next up is creating a database specifically for Drupal. Create a new database through MySQLadmin by using the following command

```
mysqladmin –u db_user
–p create drupaldb
```


Setting up site preferences

Now login to MySQL and set all permissions to allow the drupal installation to make the necessary changes to complete its installation

```
Mysql –u db_user –p
GRANT ALL PRIVILEGES
ON drupaldb.* TO nobody@
localhost IDENTIFIED
BY 'password';
   flush privileges;
```
Note that here the drupaldb is the database Drupal will be using to store its tables and 'nobody@localhost' will be your database account and the password for this database user will be 'password'. Make use of

your own username password as required.

Now you are all set to run the Drupal installation program by running your web server and accessing the localhost. Open the Drupal installation from the root of your web server and the installation will run automatically through your web browser. You just have to follow the instructions on screen to complete the installation. When asked to setup your database connection, use the same settings you used above. Since we are planning to use similar databases for other future Drupal installations, be sure to change the prefix in the "Advanced" options. Make sure you choose the "multi-domain" option during the Drupal installation process.

After you have completed the process of installation and setup your administrative details go to the root folder again and login to configure your settings. There are five sections you should be going through and setting up. These include content management, user management, reports, site building and site configuration.

## Using Drupal to manage multiple Domains

To setup Drupal to manage multiple domains proceed to the root directory of the web server and in the Drupal directory under the sites folder make a new folder and rename it to match the second domain you are going to manage using Drupal apart from your primary domain. You can follow structures like sites/site.com, sites/site.com.folder1, or sites/sumdomain.site.com.

Here site.com is the new domain Drupal will be managing and site.com/folder1 and subdomain.site.com also are part of this domain. Next you will have to copy the settings.



Edit directories to make correct database information

php file from the default sites folder in the Drupal directory into each of these individual domain directories you will be administering using Drupal. You have to edit each of these directories so that they have the correct database information in them. In most cases you just have to make a unique prefix for each of the databases linked to each domain to make maintenance easier. If not already done just point your second

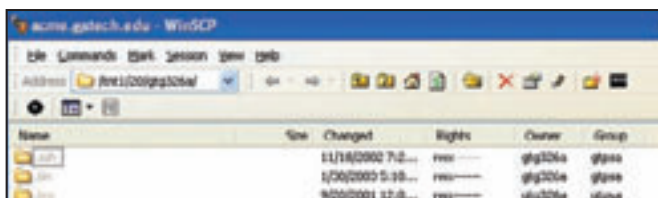second domain to follow the instructions to install your new domain. Multiple domains are also possible.

## Secure transfer

WinSCP which stands for Windows Secure Copy is a free open source SFTP client which can be used on Windows for secure transfer of files using the SSH protocol. Using WinSCP you can securely transfer files between your local and any remote com-
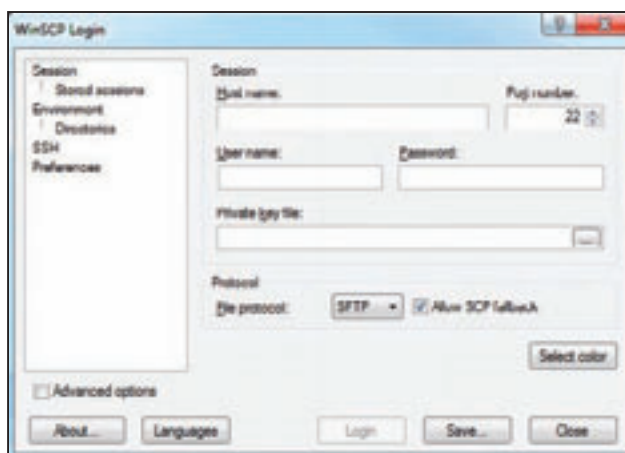


Secure login for file transfer

domain to the Drupal directory on your server and go to the install.php page on your

puter. WinSCP also has file managing and automated file synchronisation capabilities. It
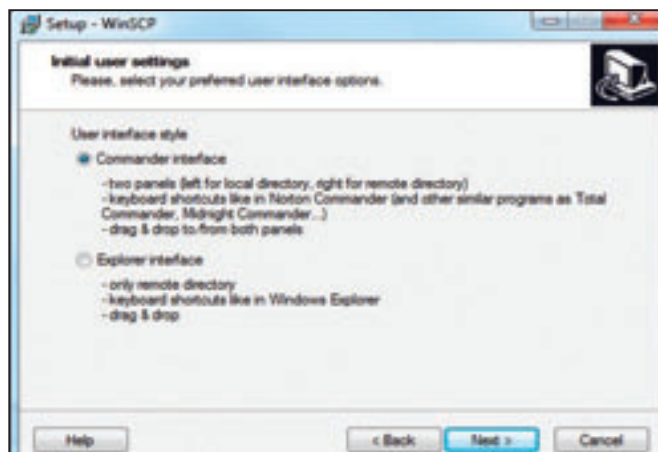


Select the interface that best suits your style of work

uses the SSH protocol for security and the FTP protocol same as FileZilla. WinSCP is also available as a portable stand-alone executable removing the necessity for installing it on a machine.

WinSCP acts as a remote editor where a user just has to click on a file on the web server and it is transferred to their local integrated text editor where he can make the necessary changes. Whenever the document is saved, the changes are committed to the remote server automatically.

## Connecting to remote server

WinSCP can be downloaded for free from www.winscp.net. While installing WinSCP the installer gives you an option between a Norton Commander like interface and a Windows Explorer like interface. The Norton Commander like interface has two panels one with the local computer directory and the other with the remote computer directory while the explorer like interface shows only the remote directory information. Once you are done with the installation you need to set up a secure connection with the remote server.

Open the WinSCP client and navigate through the menu to expand the sessions tab. Enter the ost name, port number, user name and password of the remote server, generally an IP of the computer the web server is running on if you are connected through your local LAN. Finally pick your preferred protocol. While you establish your connection you will be prompted for a pass phrase which is created during the ssh key pair generation. Once you have made a connection and have a running session you can perform all the basic standard FTP actions. The only difference is that this would be a highly secure connection. You can keep your connection details saved in the Stored Sessions subsection.

# "My elder brother lets me use his bike"

## Cricket Today. An addiction for over 29 lakh men.

When it comes to winning hearts of young Indian men, Cricket Today emerges as the clear winner. And we don't claim that. The IRS 2009R2 report proves that. According to this survey, Cricket Today is much ahead of Stardust, Femina, Autocar, Digit, Wisden and many such magazines. In other words it means that Cricket Today is not just a sports magazine. In fact, it is the most stylish and sleek lifestyle magazine that caters to upwardly mobile Indian males. The reason why men just can't help getting addicted to it.

## Cricket
### _Lifeline_of_Cricket_ today

IRS 2009R2- Total Readership Figures(In lakh): Cricket Today- 29.15*, Filmfare- 20.64, Stardust- 16.54, Femina- 10.01, Autocar- 8.64, Society- 5.49, Digit- 5.34, Overdrive- 3.55, Cosmopolitan- 2.11

*Combined English & Hindi figures. All figures as per IRS 2009R2.

www.cricketoday.com
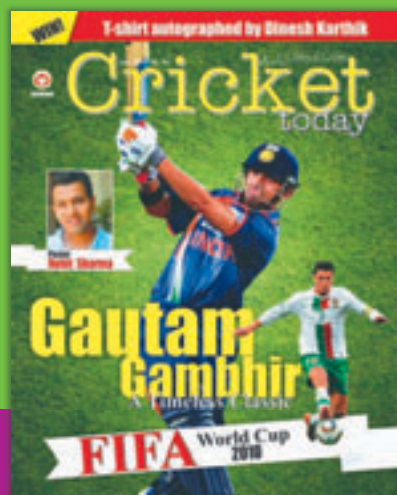
GRASS

T-shirt autographed by Dinesh Karthik

Cricket today

Gautam Gambhir

FIFA World Cup 2010

# Networking queries, software problems and the same old virus or two...

## Just another day for Digit QnA.....

### Will Mac OS X run fine on my PC?

I wanted to know whether my system is compatible with Mac OS X Leopard. I've attached a log report generated by HWiNFO32 for my system. Please check and tell me about the compatibility.

*Abhishek*

It's hard to say whether your system is compatible with Mac OS X. Mac OS X officially doesn't support components most PCs are built on. Also, those who run Mac OS X use hacked and modded copies that have to use custom drivers to work.

### Windows 7 theme won't go

I recently loaded a new Windows 7 theme. It showed up during startup, but I deleted it because I didn't like it. However, I still see it. What should I do? The configuration of my Dell PC is as follows:
1. Intel Core2duo E7500(2.93 GHz)
2. 3 GB RAM
3. 320 GB hard disk space

*Kushal Maheswari*

The theme may not have been uninstalled properly. Deleting the theme may not fix it. Try reinstalling it, and then remove the theme through the software. Finally, uninstall the software.

### Windows problems on my Sony VAIO laptop

I have a Vaio VPCEB16FG LAPTOP. When I boot my laptop, a "location not available C:Windowssystem32 configsystemprofiledesktop" message appears. It could be on a hard drive on this computer or on a network. It further says "Check to make sure that the disk is properly inserted or that you are connected to the Internet or your network, and then try again. If it still cannot be located the information might have been moved to a different location." There were also no icons on my desktop with the exception of the recycle bin. It happens within 5 or 10 days, but not daily. My K7 Total Security Antivirus is up to date. The Sony Service Centre says it's a virus problem.

*Ranjeet Kumar*

The problem could be due to a worm, virus or even corrupted hard drive. Use the SFC or SCANNOW command in the command prompt to fix the problem. You can also try restoring the Windows installation to a previous time using System Restore. The Repair mode in the Windows installation will also work. Sony might have provided a recovery system which can be used to restore the drive to its initial state. Just remember that you might lose data while doing so.

### Error while browsing the web

Recently when browsing the web page Hummaa.com, I started getting an error message "stack overflow at line No:1".

My PC is an Intel Core 2 Quad with Windows 7 Home Premium. I have a 320 kbps MTNL connection. Please help me what I can do to stop this error message

*Krishnakumar Panicker*

The error could be due to a bug in your browser. I'm assuming you're using Internet Explorer. Try another browser to see if it works. Also, update Internet Explorer to the latest version.

### Monitor trouble

I have an LG LCD 17-inch monitor (L177WSB). I think it's over a couple of years old. Several horizontal lines and some black spots have started appearing on the screen. The monitor is under its warranty period, but the problem is I have lost my warranty card and purchasing receipt, please suggest how I can replace or repair my monitor. I'm from Guwahati, is there any servicing center in Guwahati?

*Tallo Kano*

It's definitely a problem with your display. You can try contacting LG's Customer Care at 1860 180 9999. Also, we suggest you retain your bill of purchase, in the future so that you can present a copy of it when required. In case you don't have a bill, we recommend you get a duplicate copy from the seller. If none of these help, please go through our monthly Consumer Protection section that talks on the steps you need to take to safeguard your interests as a consumer.

### Will two operating systems slow down my PC?

I want to install Windows 7 Ultimate and Windows XP Service Pack 3.

I have the following configuration:
AMD Athlon II X4 630
ASUS M4A785D-M PRO
4GB DDR2 RAM
500GB Seagate Barracuda 72000.12
Windows 7 Home Basic
Will installing it slow down my computer? Will there be any other problem, or can I proceed?

*Rahul Roy*
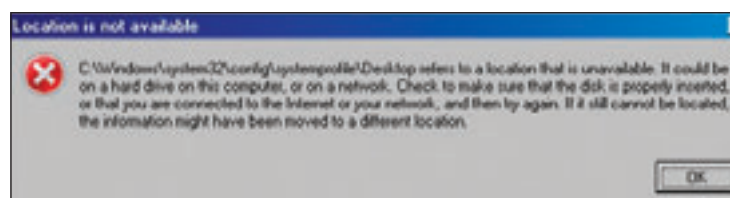
**Missing location errors maybe caused by a worm or virus**

**Cisco Skype**
There are rumours that Cisco
might be looking to buy Skype

**Fujitsu Lifebook AH530**
Fujitsu launches the Lifebook AH530 with
an onboard Radeon HD550 graphics solution
and an optional Blu-ray drive

**Q&A**

Installing two or more operating systems will not slow down the system at all. If you own a copy of Windows 7 Ultimate and Windows XP, by all means, install them.

### Faster performance with flash memory?

Is there any way I could use a pen drive as system memory? I had read an article online, but forgot about it.

*Jastinit*

What you saw might have been the ReadyBoost feature on Windows 7 which uses a performance flash drive to improve performance. From what we've seen though, there isn't a distinguishable boost in performance. If you use Windows 7, you can try it out for yourself.

### Splitting connection into two

I have a YouTelecom 512 Mbps broadband (Password & Login Required) connection. It uses a cable modem. I want to split the connection into two - one for my desktop and the other for my friend's laptop. A router is not an option, since we are really tight on budget.

Both PCs may be used at the same time, or individually also. I'm considering buying a cheap 5 port switch that I saw online. However, the You Telecom guys says that a switch won't work and that I need to opt for a Proxy or Router. Is this true?
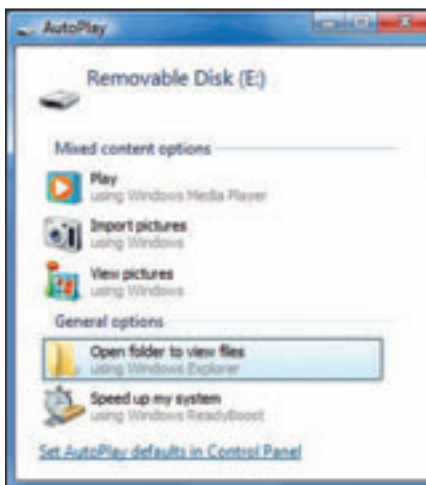


Missing location errors maybe caused by a worm or virus

Can you please guide me through the process of setting up a switch?

I have never handled a switch before, and dont know if it is plug and play or needs to configured. And also provide alternate options if possible.

*Kaushik*

Firstly, I'm not sure what the terms and conditions of the connection are. You can't split up the connection at the cable end. The easiest way is to use a router. A switch will only let you setup connections between multiple PCs, but may not let you share the internet connection. You'll need to set up one of your PCs as a gateway, and have the other connect to it through a switch. This main PC must always be on if you want internet access on the other PC. Windows has an inbuilt internet sharing feature that can be used to achieve what you're trying to do.

### Opening Ubuntu documents on Windows

I recently bought a Dell Laptop of following configuration:

P8700 2.57 GHz Core 2 Duo Intel Processor

4 GB DDR2 RAM

500 GB hard drive

Windows 7 operating system.

Along with Windows 7, I recently installed Ubuntu on my laptop as I need it in college.

Is there any software that can convert documents created in Ubuntu into the format that can be accessed in Windows or vice-versa?

*Upendra*

OpenOffice gives the user the option to export to other formats Windows NTFS partitions should be accessible from Ubuntu. Saving files on the Windows partition will allow you to open them once you boot into Windows. Being able to read those files depends on the format and software being used. If you are using Openoffice on Ubuntu to create documents, you can use OpenOffice for Windows to open those files as well.

The only files that won't be readable would be the ones created by software not available on Windows or the ones

that don't have the option to export to any other format.

### Driver installation failure

I am using a Samsung GT s3310. I want to access the internet on my Dell PC via my Phone. So I installed the PC Studio. After sometime it asked "Want to install drivers?" When I select Yes, it automatically shows "Failed to install drivers". My PC configuration is: RAM 4 GB, Windows 7, Core i3, 320 GB hard disc, 512 MB graphics card. Is my PC faulty or does the problem lie with the software? Can you provide the software with your October issue?

*Aritra Chatterjee*

The error you are facing might be because of the OS. If your PC runs 64-bit Windows, you might face problems with drivers. Visit Samsung's site and check if there are any versions available for 64-bit Windows 7. Also, check for any updates for 32-bit Windows 7 if your laptop uses it.

### Multiple queries

I have an Acer Aspire 5738 laptop with 4GB DDR3 RAM with 320GB hard disk and Intel Core2duo processor. I access the internet using my Samsung mobile using Samsung PC suite. I use Windows 7 Ultimate edition 32 bit. Whenever I remove the mobile cable from my laptop without disconnecting the internet connection, Windows 7 hangs and doesn't shut down. This problem does not occur if I use XP on the same system. Why does this happen, and how do I avoid this?

Also, Mozilla Firefox usually hangs while surfing the net. I even repaired and reinstalled it but in vain. Please give me a solution.

When I use Norton Ghost Backup, it restarts my sytem in DOS mode and starts backing up. But during backup, the bar doesn't move beyond 0 per cent. Even when I leave it for hours. Why?

(iv) I have 4 GB of RAM. So should i use 64 bit? What is he difference between 32 bit and 64 bit?

*Sarvesh Srivastava*

The lockups might be because of a bug or compatibility issue between the

**Goodbye ATI**
AMD bids farewell to the ATI brand, graphics card will be rebranded as AMD Radeon and AMD FireGL

**Nokia's new phone**
Nokia India has launched the X2, its latest music phone in the Indian market for approximately ₹6,500



Missing location errors maybe caused by a worm or virus

PC and the phone. Update to the latest version of the software.

The Firefox problem might be a bug with the current version. Try deleting the Firefox application data folder - `C:\Users\Username\AppData\Roaming` and `C:\Users\Username\AppData\Local`. Then, try reinstalling Firefox.

Norton Ghost's backup time maybe due to the size of the partitions being backed up. If you've set the compression level as high, it takes much longer. Using 64-bit Windows will allow you to use the entire 4 GB of memory. 32-bit operating systems allow a little more than 3 GB of memory.

## Networking problems

My friend and I live on different floors in same society. We have connected our computers using a cross cable so



Netmeter keeps track of the amount of data downloaded and upload on a connection

that we can share files without using pen drives. But now our cable is not working. I want to know how can we check whether the cross cable is fine or not?

Also, I have an MTNL broadband internet connection with 200 MB download free. I want to know if there is any command or method by which I can come to know how much I have downloaded so that I do not exeed my limit.

Rakesh Kumar

There's only one way to find out of the cable is fine or not - connect to any other PCs. Worst case, even if the cable is damaged, it's not very expensive to replace. We're not aware of a command but you can use a small software called Netmeter (http://www.metal-machine.de/read-error/). It shows the current upload and download speeds as well as logs amount of data transferred.

## Monitor controls gone haywire

I am facing some problem with my monitor. My PC configuration is dual core 2.8 GHz, 160 GB hard disk and all other components from HCL company. I bought my PC in 2007, and my problem is my PC monitor continuously showing contrast information on screen. It automatically increases contrast and also disturbes me while working. It continuously shows me contrast information on screen.

Laxmikanth Joshi

The problem might be with the buttons on the display. There's pretty much no other reason you might be facing that problem. Try pressing on all the buttons one after another in case they're jammed in. The only solution is to take it to HCL's service centre for repair.

## Wi-Fi problem

I want to connect my office and home wirelessly. My home has an

Airtel broadband connection and network ports are:

One Airtel Wi-Fi modem Binatone and one dt845w with four wired ports. Two desktop PCs with wired connection. Three laptop with wireless connection.
100 feet apart my office, the network without internet connection contains.
1 BSNL ZTE ZXDSLl 531b Wi-Fi modem with 4 wired port: 1 no.
2 Desktop PC wired connection: 2 no.
3 Laptop with wireless connection: 2 nos.

I want to share internet access and files between my home and office without wires and if possible without any new networking hardware. Wi-Fi shouldn't loose wireless connectivity to office laptops.

Sushil Sen

What you need is a wireless access point that connects to your home router. There should be no walls or obstructions between the two wireless devices for it to be within range. If that works, you should be able to connect to the Wi-Fi router in your office. If the router isn't in range, you will have to setup a Wi-Fi repeater or amplifier in between. Then, connect to this new access point from your home and you should be able to access the internet.

## Starting out

I am regular subscriber of Digit. I am going to start a cyber cafe. I can install LAN using a switch for 5 computers. But I do not know how to share single internet connection among 5 PCs.Will I be able to use internet connection on all PCs if I connect DSL cable (Cable internet) to the switch.

Rajesh Kumar

A switch will not be able to distribute internet connections to your five PCs. With a switch, you'll need to setup a primary server that receives the internet connection and then distributes it other PCs through the switch using Internet sharing. You will need two LAN cards on the primary server for this kind of setup. A easier solution would to purchase an ADSL router that has multiple wired ports to connect to the different PCs directly.

# Low-cost mobile phones are revolutionising communication all over India

## Join us at COMPONEX NEPCON India
### 16 - 18 December 2010, Pragati Maidan New Delhi
### You just might discover the next BIG THING in Electronics Manufacturing

For 15 years now, Componex, India's most trusted EMS trade fair brand, has consistently delivered a high end annual event that draws professionals from across all sectors of the global electronics industry.

The Nepcon series of events, have for the past 25 years, been the only true networking platform for the SMT community across Asia.

Together, COMPONEX NEPCON India 2010 offer India's EMS and SMT sectors the best choice of global and local manufacturing and technology. And of course, an opportunity to discover the next BIG THING.

For more information on COMPONEX NEPCON India 2010, please call Vidula Kagal at +91 22 6771 6666 or email vidula.kagal@reedexpo.co.uk

**COMPONEX NEPCON** India 2010

REGISTER ONLINE at
www.componex-nepcon.in

**Norton reports**
A study conducted by Norton reports that nearly two-thirds of internet users globally and almost three-quarters in the U.S. have fallen victim to cybercrime, with even worse numbers in China, where 83 per cent have been hacked

**High-Def Hacked**
HDCP (High-bandwidth Digital Content Protection) keeps devices such as Blu-ray players and HD set-top boxes protected, has been hacked
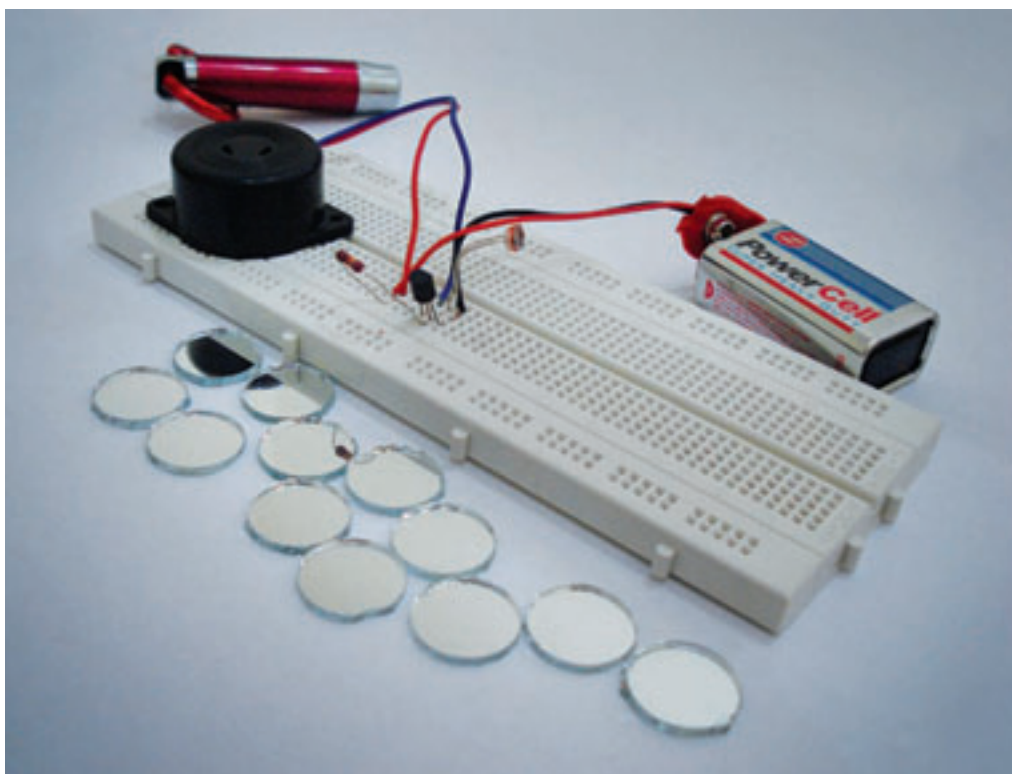
# Secure your belongings,
## the smarter way

With every instance of shopping sprees indulge in, there is a higher possibility of theft that haunts us. We show you how you could safeguard your possesions in just ₹100!

**Nash David**
*nash.david@thinkdigit.com*

I f you've seen the 1999 Hollywood movie Entrapment starring Catherine Zeta-Jones, you'll know exactly what we're talking about here. No we're not interested in the attractive female secret agents steering through laser controlled security systems! We're excited about the technology that goes along with it. We're talking about you being able to safeguard your valuables, so that you can enjoy a good night's sleep. If someone wants to steal from you, they should at least have a tough time getting past your security shield.

### This is how it works
The working principle of the circuit we're building this month is really simple. What is critical is the set up. Although you'll find several versions and alternatives available to achieve the same ulterior motive, we're presenting you this circuit purely for its simplicity and efficiency. It's so simple you can build it even if you don't know anything about electronics. To take you through its working, we use one of those laser key chains that we're used to seeing

while growing up. You use one of the laser pointers and direct its beam at the laser receiver we're building.

The basic component that detects the laser is a simple light dependent resistor (LDR). We discussed about electronic components in this month's webinar on our website at www.thinkdigit.com/webinars.php. If you read through our presentation, you'll get a better understanding of what a light dependent resistor is.

The laser beam should be incident on the LDR during normal operation of the circuit. In the event of an intrusion, the laser network that you'll create using tiny mirrors is obstructed. The LDR detects this obstruction and in conjunction with the transistor interprets it as a change in state. The resultant change in electrical signals triggers the buzzer to alert anyone around you of the ongoing theft attempt. Vigilant neighbours and friends are all you need to foil the intrusion attempt.

### Identifying your components
The picture alongside gives you a glimpse of the components you are going to use for this DIY. The buzzer has two wires – one red and the other blue. Connect the red wire to the positive terminal, and the

---

**What you will need:**
Transistor 2N3904 – 1 no.
Capacitor: 1000uF – 1 no.
Laser pointer
LDR
Resistor: 10K
Breadboard
Piezo buzzer (3 – 12 V)
9V battery – 1 no.
Battery snap
A pack of tiny mirrors, commonly available with tailoring shops specialising in embroidery work.
Fevikwik for fixing your mirror pieces

**Google Apps doubly secure**
Google Apps is launching two-factor verification, allowing the capability to verify a person's identity with a code sent to the user's mobile device

**Phishing galore**
A Spanish security firm called PandaLabs estimates 57,000 sites designed to look like other popular sites go up on the web each week. These phishers try to trick users into handing over personal details

**DIY**
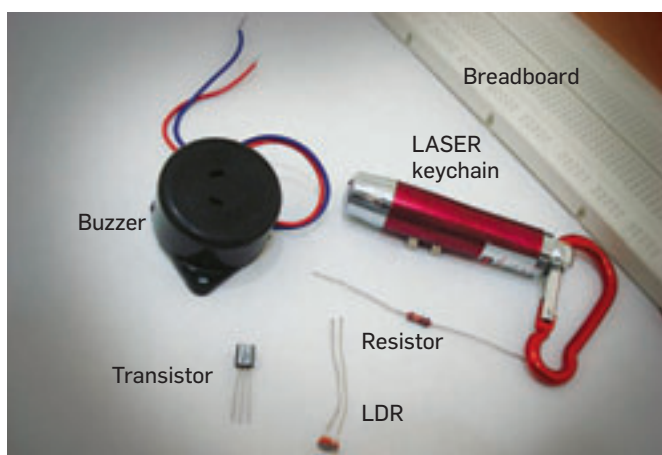
Components for your new security system
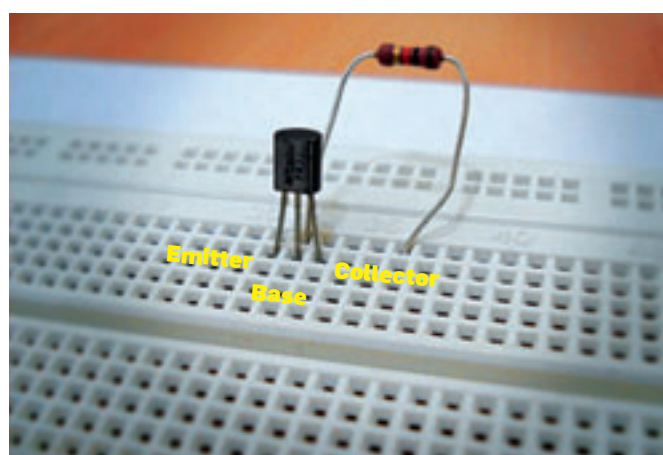


The 10 kilo ohm resistor is connected to the base of the transistor

other wire to the negative terminal. The transistor is an NPN transistor and has three terminals known as collector, base and emitter. You can identify the terminals from the photo or you can also refer to a datasheet. If you place the circular side of the case to the left (resembling a C), with the flat side to the right and the terminal facing down, then the terminal towards you is the emitter. The terminal in the middle is the base and the terminal on top is the collector. ie. The terminal on top of your C is the collector, the middle is the base and the terminal on the base of your C is the emitter. The LDR or light dependent resistor has two terminals with a wavy line on it.

## Connecting the components together

You can start with a breadboard to test this project so that you don't get frustrated if it doesn't work. As you can see, the circuit is very small and simple. With just three components in it, you should be able to get it without any prior knowledge of electronics. To start, place the transistor on the breadboard, as shown in the photo – the flat side facing you. If you'd
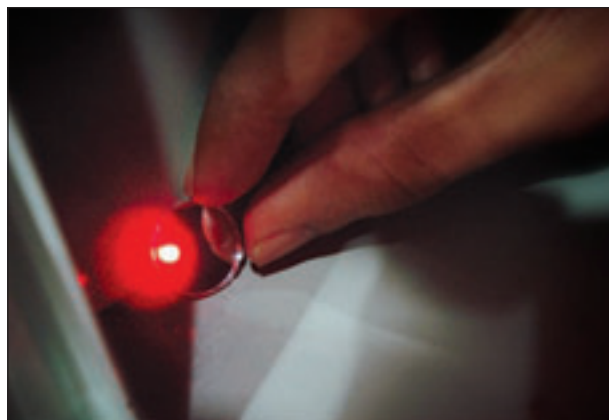


Create a mesh around your belongings using LASER and mirrors



Just four components as you can see in the circuit diagram



You can now relax

try and recollect now, the terminals from left to right are emitter, base and collector.

Connect the LDR between the two terminals to the left of the transistor (base ans emitter). Connect the buzzer between the third terminal of the transistor (collector) and a new point X on the board. To this point, connect one terminal of the resistor (10K). The other terminal of the resistor connects to the collector of the transistor.

To the common point between the resistor and the red wire of the buzzer, connect the red wire (positive) of the battery. Similarly, connect the black wire (negative) of the battery to the emitter of the transistor.

## You're done...really!

Believe it or not, half your work is done. Although, by way of constructing the circuit you've completed your

job. Now, you are left with craft work literally. Strategically place the mirrors such that they are not easily visible and create a amesh of LASER around your valuables. We prefer mirrors because other reflective materials tend to dissipate or distort the beams, thereby causing problems with the sensitivity of the circuit. There's no limit to the network you could form by the mirrors. All you need to do is ensure that the beam finally falls on the LDR in normal circumstances. This way your buzzer will be off in normal state. If you want a more permanent solution, solder the components together and keep the LDR concealed so that the LASER beam is not seen.

**Digital life**

**102**

**Reading redefined**
Are ebook readers here to transform the way we read? We look at what the future holds

**3D mirror on the wall...**
German TV maker Ad Notam's 46-inch mirror monitor converts 2D content into Above & Below or side-by-side 3D format

## Icon A5

A personal aircraft that runs on both auto and aviation gas, does not require a professional commercial pilot license, is capable of landing on both land and water, its consoles and meters are designed like any sports car interiors for ease of use. What more can you ask for? Not a lot perhaps, since you're only paying $139,000! Start saving...





## Roth MC4

The MC4 is a tube amp for Apple iPod / iPhone. You can pop in any other MP3 player apart from the iPod as well. This dock produces pure hi-fi tube sound, and can be connected to your PC or laptop too. Its main USP is the vacuum tubes that amplify never-before-heard sounds, giving you a new listening experience.

## Hasselblad H3DII-50

An ideal camera for professionals, the Hasselblad houses a 50 megapixel CCD sensor and is a multi-shot full colour camera. It can capture four shots in a row, records full RGB values at each position by moving the sensor one pixel between shots. Go out and start shooting with this high-end camera for $52,128.

## Sleek Schulte
The EVOline Vertical speaker lookalike docking station from Schulte Elektrotechnik features international sockets and a movable design

## Compute bling!
Computer Choppers now offer you the option of plating your iPad with 24kt gold, studding it with diamonds among many other precious stones and metals

**Drool maal**

## Vusix iWear VR920

Don't just stare at the screen be a part of it...and with the iWearVR 920 that's exactly what you can do. This device is capable of showing 3D content on a 62-inch screen at a perceived distance of 9 feet, and also supports NVIDIA's stereo drivers. Just $400 too.

## Ryobi Tek4 4V 8 MP Digital Camera

Meet the big daddy of all durable and rugged cameras. The Ryobi TEK4 has some cool features – steel lens protection that protects its 3x lens, even when it's extended, it's dust- and water-proof, impact resistant, and also sports a flash light that can light-up objects up to 15 feet away. It shoots in 8 megapixel and comes with a 1GB SD card. But the coolest thing in the price, a mere $199.

## Cabestan's Nostromo

A look at this watch and you would probably think – but how do I tell time? The catch is that the Cabestan's Nostromo doesn't work and look like your normal watch. A series of gears power up this watch and the current time is displayed in the top left corner. It's made of titanium with a coating of phosphorescence on top. Yours for only $1,41,400!

**Digital life**

**India at work**
India's answer to Amazon, Infibeam also has a range of ebooks and an ebook reader the Pi that displays several Indian languages

**Wink**
EC Media, another Indian company has also launched the Wink reader that supports English, Hindi, Malayalam and Marathi

# READING REDEFINED

Nash David
*nash.david@thinkdigit.com*

*"The man who does not read good books has no advantage over the man who can't read them."*
*- Mark Twain*

Knowledge has been regarded as the epitome of power, for as long as we can remember. In fact, most modern day thinkers advocate technology for the very sake of advancement, with the genesis of the idea lying in *better* knowledge. Ever since Gutenberg printed the Bible on his press in 1439, generations have been transformed. The most significant one being the abolishment of slavery in the United States owing to the advocacy of freedom, liberty and equality.

Since the days of Gutenberg and his revolutionary press, the printing and publishing industry has witnessed a phenomenal growth, spiralling over centuries. Flipping through the ages (and pages) and stepping into our era, the internet has enfolded the business of knowledge with its vast web.

In our age, information has been available through waves, wires and of course, the all inclusive web. It's hard to think of a life void of these three. The love of reading while tanning has sustained a thriving industry now witnessing downward spirals in its DNA. If the w3 we spoke of wasn't enough, there's eBooks.

We all know what happened to the paging industry not too long ago. A text-only means of communication could never sustain itself with a much better conglomerate of voice, data, text and video at lower costs. With books, we're witnessing a similar scenario.

To satiate your thirst for knowledge, and especially reading, the latest offering is that of eBook readers. The idea is to be able to read a digital copy (PDF, TXT or the rather secure ePub) of your favourite novel or book using dedicated hardware. This concept was popularised by Amazon with its classic Kindle Reader in 2007. In the three years of its business in this product category, Amazon has revamped the Kindle through 3 generations. The current one being Kindle 3 announced in July this year. It's slimmer, faster and cheaper than the earlier models.

## Consumer leanings

E-ink is indeed pleasant to read. Digit community member Sanket Naik believes in urban India, space and storage of a book collection is a major concern. Due to space constraints, he prefers eBook readers to print. Also, he finds it uncomfortable to read more than 20 pages at one stretch on a laptop or LCD display. That's one of the highlights and advantage of e-ink.

Another Digit reader, Milind Shah prefers software and apps for mobile and smartphone platforms (BlackBerry, Android, iPhone), iPad and PC, rather than buying an eBook reader. According to Shah, "with these apps, you no longer need an ebook reader. This does away with the need for paper". Effectively, is the transition from paper to eBooks really worth it? One major concern is the effect of paper production on the environment. Another Digit reader says she doesn't need another gadget to spoil her eyes and rather prefers good old books with paper.

## Market research findings

Echoing the growing concern to the print and publishing industry is Forrester Research with its report that recommends "strategists planning the next wave of ebook readers diversify the portfolio of eReading devices to secure their ownership of the reading experience, offering devices that range from stripped-down $49 pocket readers to full-color touch readers that erase the gap between today's ebook readers and tablet PCs." Clearly, the single largest threat to eBook Readers appears to be in the form of tablet PCs, at least for now. But, a ₹1,500 ebook reader – really?

Eventually, there's one question that still dodges us. Why use eBook readers – for convenience, cost or charm? In the

## What about 35?
India's cheap $35 tablet could be a nice deal as a reader, but at the cost of readability and comfort

## Kindle's selling
Amazon's latest Kindle model, the Kindle 3 has proved to be the most successful ebook reader till date

**Geek life**

present market scenario, eBooks come at a price. In emerging economies such as India, even ₹6,000 for an ebook reader is still on the high considering the fact that technological penetration and consumption is limited to the lofty. The USP of most ebook readers is either its display (often promoted as glare free or e-ink), or the number of formats it supports. In stark contrast, according to figures gathered by an authoritative body on the print and publishing industry PIRA, "Amazon has been growing its digital book range since the launch of the Kindle in 2007 and in August 2009 added 13,713 titles. In July 2009, Barnes and Noble in the US was offering 7,00,000 titles. Putting this growth in perspective, according to the Association of American Publishers, between 2002 and 2008, e-book sales grew at a compound annual rate of 58 per cent, compared to 1.6 per cent for the overall book industry. Adding to the woes of paper producers, Amazon announced at the start of October 2009 that for all books it sells in both print and e-book versions, Kindle versions now account for 48 per cent of unit sales. Six months earlier the figure was around 12

per cent. Clearly this trend will impact paper demand. For paper producers in North America and Europe, the situation is exacerbated by the continued growth of books imported from the Far East. For example, Asia exported almost $1.5 billion worth of books into the US during 2007."

Definitely, eBook readers do pose a threat to the paper and print industry. However, more of this seems to affect the saturated and sapped American market. All the eBook reader activity seems to be happening in the world's largest market. The Asian print and publishing industry seems to be growing. A trend seconded in a report on the Media and Entertainment industry by global auditing firm Ernst & Young forecasting the industry trend till 2014.

According to the media and entertainment industry assessment by PricewaterhouseCoopers, the global consumer magazine market is worth $80 billion, compared to $71 billion five years ago. However, a closer look shows that while

advertising rose by a compound annual growth rate (CAGR) of 4 per cent, circulation went up by just 1.9 per cent between 2003 and 2007. This does speak of alternative sources for content for the consumer. Does it mean online content, piracy, or ebook readers?

We know for sure ebook readers are not responsible for the slow growth in these figures. The industry picked up only post 2007 with the launch of the Amazon Kindle. What is universally agreed by all analysts globally is that advertising will increase significantly (by double digit figures in the online and digital space in BRIC countries such as Brazil, China and India.

From a more practical standpoint, PlasticLogic's ProReader (announced at CES 2010, but later scrapped) held great potential. It's no coincidence these kneejerk moves are a result of 3 million iPads selling in just 3 months of its launch. If you're still wondering what the future could be, the October 2008 issue of Esquire, a men's magazine could hold the key. This issue has the world's first e-ink cover. Watch a video on http://is.gd/eRoLZ. With the iPad changing the market scenario, several eBook readers are looking at a reduced demand for reader-only devices. For the ultimate experience, companies would have to offer the feel of "touch" to their ebook readers. Flexible displays as promoted by PlasticLogic did promise this. Nevertheless, pricing is another critical factor.

What would hold true till the end is substance. As billionaire investor Warren Buffet puts it, "Price is what you pay. Value is what you get." As far as the future of eBook readers is concerned, there is growing opinion among a vast section of analysts and market researchers that the growth for eBook readers can only be sustained till 2015. According to Informa Telecoms & Media, ebook reader sales are expected to peak at 14 million units in 2013, before falling by 7 per cent in 2014. Perhaps the smell of paper would be the deciding factor, or a perfect synergy between paper and print like the Esquire cover! Write in to us and let us know your take on this matter.

**Street smart**

**112** **Price watch**
The latest prices of all your computing accessories
and peripherals, so you can plan your purchase better

**114** **Know your rights**
All your concerns as a
consumer addressed here

# Look ma no wires!

## Agent 001 goes hunting for the best Wi-Fi routers in town

**Agent 001**
*agent001@thinkdigit.com*

A trend I've been observing for sometime now is home users increasingly going in for Wi-Fi routers. This rise can be attributed to a couple of use case scenarios. People now have multiple browsing devices at home – most commonly laptops, while some even connect via mobile phones and high end PMPs such as the iPod Touch. Obviously, connecting to the internet from any part of your home, say from the comfort of your couch or the picturesque beauty of your balcony, is a tempting proposition. Another factor for increase in the offtake of this product category is that high-end users have started to set up purpose specific rigs such as download or media center rigs at home and don't want the cable clutter that comes along with it. Besides, the price drop and implementation of the 802.11n make this perhaps the perfect time to go in for a Wi-Fi router.

That being said the world of Wi-Fi routers is a little complex, simply because of the various types of routers available; each with a specific purpose, performance level and price range. For instance, there are routers that come with a USB port – to share flash drives, Dual Band, and even torrent downloading features. Buying a Wi-Fi router hence can be as simple as going over to the nearest electronics/hardware shop and announcing to the shopkeeper "Give me one Wi-Fi router", or it can be a nerve wracking process filled with choices and options. No self-respecting Digit reader is going to go for the first option. No wonder

Belkin N150

I've been getting so many mails regarding Wi-Fi routers. So I decided to take a little trip down to the local electronics market to check out what was available and give you a bit of gyan on choosing the right Wi-Fi router for your needs.

At the first shop that I went to, I put on my poker face and did what most consumers do, "*Ek Wi-Fi router dena*". The shopkeeper plonked the Belkin G Wireless Router and nonchalantly stated the price, Rs 1350. On getting a similar response at most places I went to, with shop guys either pushing either the aforementioned Belkin or the Netgear G54 (₹1550), I could easily deduce that they're trying to get rid of the outdated their stock of routers based on the older and inferior 802.11g standard. The g routers are cheap yes, but offer a maximum speed of 54Mbps. This is fine if you're sole purpose is browsing and the area that you require to be covered is relatively small, say a maximum of two small rooms, seperated by a thin wall. The moment you enter into the territory of media streaming or if your home is a duplex with rooms not adjacent but one above the other, you need to go for an N router. These routers offer a wider range and the N standard supports speeds of upto 600Mbps. They don't cost a whole lot more either, the cheapest N router I found was the Digisol DG-BR4000N for ₹1650 and it came with a warranty. Since the brand is an offshoot of D-Link, service and quality should not be a problem. This mean that for just a ₹300 increase in

your budget you get better range and faster speeds. The other N-supported routers that was easily available over-the-counter was the Belkin N150 for Rs 1850 – a decent performer in our recent Wi-Fi test. When it came to routers with a USB port that facilitate sharing content from a portable drive, the market seems to have only one option over-the-counter, the Belkin N+ for ₹4550.

If you have a higher budget, you can look at the higher-end routers in the July issue. These are feature rich in terms of the interface, design and other factors. But since they're not easily available your best bet is to look for them in online shops or have them specifically ordered though your local store. One such router is the Asus RT-N16, which is a robust performer and has features like torrent downloading, FTP and P2P all for ₹6,600. The Linksys WRT610N, priced around ₹9,400 is a dual-band router, which means that it supports the lesser used 5Ghz frequency range. It also has options to set traffic priority to certain applications for better performance – good for gamers.

For those looking for ADSL routers, the Linksys WAG160N for ₹6,500 is a good option. It comes with an ADSL

Asus RT N16

component built into it, so you can get rid of the ADSL modem that your ISP provides (and probably charges you rent for), plus reduce the device clutter. It also has an option to use one of the other LAN ports as a WAN connection if you choose to move to an ISP that uses Ethernet to distribute connections.

My little trip down to Lamington Road has proved useful and will definitely help out those of you who have been writing to me with your Wi-Fi woes. Remember you have many options, simply assess your need and choose the right product.

**116**

**Killer rigs**
Build the system to suit your needs.
Choose from 4 configurations

**Whitespace Wi-Fi**
The US FCC is on the verge of allowing the use of the unused spectrum or
whitespace caused in the broadcast of TV Channels for Wi-Fi improvement

**Agent 001**

## Graphics card around ₹8,000

Please recommend a suitable graphics card in the range of 8000 on the following configuration: Pentium Dual Core, 2 GB RAM and with a mainboard Acer G31T-M5
Debadyuti Bhattacharya

A graphics card in that price range will be overkill for your configuration. It is recommended that you upgrade your system if you're looking for a graphics card such as the GeForce GTS250 or Radeon 5750. The processor will be somewhat of a bottleneck and you won't find frame rates going up beyond a certain point. If you have no plans of upgrading, purchase a somewhat cheaper GeForce GTS240 for the time being.

## Sound card for new speakers

I recently purchased a Philips 5.1 surround speaker (Model no - MMS 5130). It has three pin to plug into the processor. But My sound card is 2.1 channel. So please suggest me a sound card which has three point which I can plug in the speakers pins. All are 3.5 mm jack. My budget is within ₹2,000 - 3,000.
Subham Gartia

Most sound cards on motherboards over the years have come with 5.1 audio outputs. Ensure that your card isn't one of them. Some speakers use RCA connectors to input audio to the amplifier/woofer. If that's the case, you can simply purchase these 3.5 mm - RCA converters and use
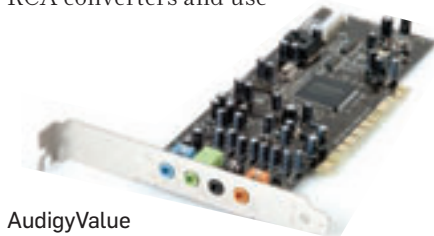
AudigyValue

those speakers. Few or almost no sound cards come with RCA connectors. If you're looking for a 5.1 sound capable sound card, look at the Creative Sound Blaster Audigy Value 7.1 card. It should be priced around ₹ 1,800.

## PC or graphics card upgrade?

I need your help in selecting a graphics card for my PC. Also suggest some game titles that we could play. Please do not suggest gory titles. I am a doctor and my son is 11 years old.

My budget is between ₹4,000. I can stretch it to a maximum of ₹6,500. I read about the Graphics cards in the July issue of Digit.

My PC is a low cost Zotac 610i value Motherboard, with a 400W power supply. It has one PCIe x16 slot, Pentium-D 2 GHz, 3 GB DDR2 533 RAM, 80 GB, IDE HDD, onboard NVIDIA Geforce 7050 running Windows 7 Professional.

I need to know whether my PC suitable for a graphics card upgrade?

We prefer games of the milder kind. For example, *Heart of Darkness*, *Road Rash*, *NFS*, and *Trine* to name a few.

However, the games we have been playing have been restricted due to hardware limitations in our PC.

We really loved Trine. It's the latest game we liked, but cannot play it beyond 640x480 resolution, and so we cannot truly enjoy the game.

We look forward to your suggestions.
Dr. Vijay & Jacob

Considering your requirements, we would suggest going in for a GeForce GT240 graphics card for the gaming if you aren't planning to upgrade anytime soon. It won't improve performance by a whole lot because of the older processor. An entire system overhaul seems overdue. If that's the plan, a graphics card in the price range of ₹6,000 - ₹8,000 would be the way to go.

Some games with little or no gore that you must try *FIFA 2010*, *Pro Evolution Soccer 2009/2010*, *Braid*, *World of Goo*, *Sins of a Solar Empire*, *Spore* and *Overlord*.

## Need to purchase a new monitor

I am planning to buy a new Full HD monitor. I have selected two Dell monitors. These are as the Dell ST2210 and the Dell ST2220L.

Of these two, which one is better? Also, tell me the price of these monitors.

Further, I want to buy a graphics card. My budget is ₹5,000. However, the monitor should have an HDMI port. I am not too much into gaming, but I need it for movie viewing and normal stuff.

My PC configuration is Intel Dual core processor on original Intel 945 GNT Motherboard with 2 GB RAM.
Anupam Parekh

The two displays are almost identical to each other. The Dell ST2220 looks like a newer model with the same specifications. For accurate prices, you should contact Dell from their web site or their customer care numbers. For under Rs. 5,000, you can find a GeForce GT240 graphics card.

## Laptop for around ₹25,000

I admire your magazine and have never been let down by the Digit team. The thing is, I want to buy a laptop that I would be using for general operations such as surfing the net, writing documents, watching movies and listening to music. My budget is around ₹25,000. I am totally against using Compaq and HCL laptops. Please exclude them.

This is urgent and it would be very kind of you if you can reply via mail.
Pratik

Look for the Acer Aspire 4736Z model. It should fall in the price range.

## Best tablet for media?

I want to buy an Android based tablet. It should have Wi-Fi connectivity, 720p video playback (if 1080p is available then I would prefer that), full Flash support, large screen at least 7-inch (10.1-inch is recommended). The tablet should have the latest version of Android.

Basically, I just want to watch high definition movies and have a rich web experience. I am not limited by budget. Please suggest accordingly.
Abhishek Kumar

The OlivePad VT100 is the only one available in India. It's not particularly great. If budget is no issue, the iPad is your best option. You'll have to get it shipped from the US.

**Street smart**

**Facebook in theatres**
'The Social network', a movie on social networking sites,
is about to be released on October 01, 2010

Powered by
bitfang.com
IT is better here

# SPEND SMART

**The latest peripheral prices updated every month. Go ahead, plan your configuration today**

## PC Cabinets

| Brand | Model | Market Price (₹) | Type | 5.25-inch bays | 3.5-inch bays | Number of fans |
|---|---|---|---|---|---|---|
| Antec | Skeleton | 10920 | ATX | 2 | 2/0 | 5 |
| Antec | Three Hundred | 4000 | ATX | 3 | 1 | 5 |
| Cooler Master | Elite 360 | 2160 | ATX | 2 | 2 | 1 |
| Cooler Master | Gladiator RC-600-KKN1-GP | 4000 | ATX | 5 | 1 | 5 |
| Cooler Master | HAF 932 RC-932-KKN1-GP ATX | 9800 | Full ATX | 6 | 5/1 | 4 |
| Cooler Master | RC-310-RKN1-GP | 1800 | ATX | 4 | 2 | 2 |
| Cooler Master | RC-690-KWN1-GP | 4930 | ATX | 5 | 6 | 7 |
| Gigabyte | GZ-AX1CBS-SNB | 3610 | ATX | 4 | 6/1 | 2 |
| Gigabyte | GZ-X4BPD-500 | 2270 | ATX | 4 | 3/1 | 1 |
| Gigabyte | Poseidon 310 GZ-AA3CB | 8040 | Micro ATX | 5 | 3/2 | 2 |
| LanCool | PC-K60W | 5980 | ATX / Micro-ATX | 5 | 4 | 4 |
| LanCool | PC-K62 | 6700 | ATX / Micro-ATX | 5 | 4 | 4 |
| Lian Li | PC-7FN | 7940 | ATX / Micro-ATX | 5 | 4 | 2 |
| Lian Li | Q07B | 4120 | Mini ITX | 1 | 1 | 1 |
| Thermaltake | M9 VI1000BWS | 4610 | ATX | 6 | 3/1 | 2 |
| Thermaltake | VI90001W2Z | 11590 | Micro ATX | 7 | 6/1 | 5 |
| Thermaltake | VJ400G1N2Z | 5980 | ATX | 4 | 5/2 | 3 |
| Thermaltake | Vl60001N2Z | 3250 | ATX | 4 | 4/1 | 1 |
| Zebronics | INVADER | 8240 | ATX | 5 | 5 | 3 |

## Motherboards - AMD

| Brand | Model | Market Price (₹) | Socket/Interface | Chipset | PCI/SATA/USB |
|---|---|---|---|---|---|
| Asus | M4A785TD-V EVO | 6,650 | AM3 | AMD 785G + AMD SB710 | 3/5/6 |
| Asus | M4A78T-E | 7,730 | AM3 | AMD 790GX + SB750 | 2/2/5 |
| Asus | M4A79 Deluxe | 12,550 | AM3 | AMD 790FX + SB750 | 2/5/12 |
| Biostar | TA785G3 | 4,200 | AM3 | AMD 785G + SB710 | 1/2/4 |
| Biostar | TA785GE | 3,740 | AM2+ | AMD 785G + AMD SB710 | 2/6/7 |
| Biostar | TA890GXE | 7,650 | AM3 | AMD 890GX + AMD SB850 | 2/5/6 |
| Gigabyte | 880GM-UD2H | 5,970 | AM3 | AMD 880G + AMD SB710 | 2/6/6 |
| Gigabyte | 890FXA-UD5 | 12,670 | AM3 | AMD 890FX + AMD SB850 | 1/6/14 |
| Gigabyte | GA-MA785GMT-US2H | 5,570 | AM3 | AMD 785G + AMD SB710 | 2/5/6 |
| Gigabyte | GA-MA78GPM-DS2H | 5,050 | AM2+ | AMD 780G + SB700 | 1/2/5 |
| MSI | 785G-E53 | 5,260 | AM3 | AMD 785G + AMD SB710 | 2/5/6 |
| MSI | 785GM-E51 | 4,100 | AM3 | AMD 785G + SB710 | 1/2/5 |
| MSI | 890FXA-GD70 | 10,150 | AM3 | AMD RD890 + AMD SB850 | 1/6/6 |
| MSI | 890GXM-G65 | 7,340 | AM3 | AMD 890GX + AMD SB850 | 1/5/4 |

## Motherboards - Intel

| Brand | Model | Market Price (₹) | Socket/Interface | Chipset | PCI/SATA/USB |
|---|---|---|---|---|---|
| Asus | Rampage II GENE | 15,200 | LGA 1366 | Intel X58 + Intel ICH10R | 1/7/6 |
| Biostar | TPOWER i55 | 11,900 | LGA 1156 | Intel P55 | 2/6/8 |
| Biostar | TPOWER X58A | 12,480 | LGA 1366 | Intel X58 + Intel ICH10R | 2/6/10 |
| Gigabyte | GA-EP43T-UD3L | 5,700 | LGA 775 | Intel P43 Express + Intel ICH10 | 2/6/12 |
| Gigabyte | GA-EP45-UD3L | 7,110 | LGA 775 | Intel P45 + Intel ICH10 | 2/6/12 |
| Gigabyte | GA-EX58-UD3R | 18,030 | LGA 1366 | Intel X58 Express + Intel ICH10R | 2/6/12 |
| Gigabyte | GA-P55A-UD4P | 14,420 | LGA 1156 | Intel P55 Express | 2/6/12 |
| Gigabyte | GA-P55M-UD2 | 6,290 | LGA 1156 | Intel P55 | 2/7/10 |
| Gigabyte | GA-P55-USB3 | 9,270 | LGA 1156 | Intel P55 Express | 3/6/14 |
| Gigabyte | X58-AUD3R | 14,450 | LGA 1366 | Intel X58 Express + Intel ICH10R | 1/2/10 |
| Intel | BOXDP45SG | 7,010 | LGA 775 | Intel P45 Express | 3/6/12 |
| MSI | MSI X58 PRO-E | 10,920 | LGA 1366 | Intel X58 + Intel ICH10R | 2/2/6 |
| MSI | P55-CD53 | 6,080 | LGA 1156 | Intel P55 | 3/8/10 |
| MSI | P55-GD65 | 8,400 | LGA 1156 | Intel P55 | 2/7/8 |
| MSI | P55M-GD45 | 5,640 | LGA 1156 | Intel P55 | 1/6/10 |

**Red Alert!**
A malware named 'Spy rootkit' is suspected to infect most of the critical infrastructure systems in India and Iran

Powered by

bitfang.com
IT is better here

**Price watch**

## Processors

| Brand | Model | Market Price (₹) | Socket/Interface | Number of cores | Clock speed |
|---|---|---|---|---|---|
| AMD | Sempron 140 | 2,140 | AM3 | 1 | 2.70 GHz |
| AMD | Athlon II X2 240 | 3,283 | AM3 | 2 | 2.80 GHz |
| AMD | Athlon II X2 245 | 3,310 | AM3 | 2 | 2.90 GHz |
| AMD | Athlon II X2 250 | 3,500 | AM3 | 2 | 3.00 GHz |
| AMD | Athlon II X2 255 | 3,860 | AM3 | 2 | 3.10 GHz |
| AMD | Athlon II X3 440 | 4,500 | AM3 | 3 | 3.00 GHz |
| AMD | Phenom II X2 550 | 4,940 | AM3 | 2 | 3.10 GHz |
| AMD | Phenom II X2 545 | 4,957 | AM3 | 2 | 3.00 GHz |
| AMD | Athlon II X2 620 | 5,626 | AM3 | 4 | 2.60 GHz |
| AMD | Athlon II X4 635 | 5,670 | AM3 | 4 | 2.90 GHz |
| AMD | Athlon II X4 630 | 5,842 | AM3 | 4 | 2.80 GHz |
| AMD | Phenom II X4 925 | 7,110 | AM3 | 4 | 2.80 GHz |
| AMD | Phenom II X4 945 | 7,500 | AM3 | 4 | 3.00 GHz |
| AMD | Phenom II X4 955 | 8,530 | AM3 | 4 | 3.20 GHz |
| AMD | Phenom II X6 1055T | 11,150 | AM3 | 6 | 2.80 GHz |
| AMD | Phenom II X6 1090T | 16,030 | AM3 | 6 | 3.20 GHz |
| Intel | Core E5300 | 3,080 | LGA 775 | 2 | 2.60 GHz |
| Intel | Core E5400 | 3,330 | LGA 775 | 2 | 2.70 GHz |
| Intel | Core i3 530 | 5,880 | LGA 1156 | 2 | 2.93 GHz |
| Intel | Core i3 540 | 6,290 | LGA 1156 | 2 | 3.06 GHz |
| Intel | Core 2 Duo E7500 | 6,610 | LGA 775 | 2 | 2.93 GHz |
| Intel | Core 2 Quad Q8400 | 7,880 | LGA 775 | 4 | 2.66 GHz |
| Intel | Core i5-650 | 9,270 | LGA 1156 | 2 | 3.20 GHz |
| Intel | Core 2 Quad Q9400 | 10,000 | LGA 775 | 4 | 2.66 GHz |
| Intel | Core i5-661 | 10,170 | LGA 1156 | 2 | 3.33 GHz |
| Intel | Xeon E5405 | 11,690 | LGA 771 | 4 | 2.00 GHz |
| Intel | Xeon E5410 | 14,610 | LGA 771 | 4 | 2.33 GHz |
| Intel | Core i7-860 | 15,250 | LGA 1156 | 4 | 2.80 GHz |
| Intel | Core i7-870 | 15,660 | LGA 1156 | 4 | 2.93 GHz |
| Intel | Xeon E5420 | 18,570 | LGA 771 | 4 | 2.50 GHz |
| Intel | Core i7-980X | 55,620 | LGA 1366 | 6 | 3.33 GHz |

## Point and shoot cameras

| Brand | Model | Market Price (₹) | Optical Zoom | Aperture |
|---|---|---|---|---|
| Canon | 120IS | 11,540 | 4x | f/2.8-8.0 |
| Canon | A1100 IS | 8,550 | 4x | f/2.7-5.6 |
| Canon | PowerShot A495 | 6,030 | 4x | f/2.8-5.6 |
| Canon | PowerShot S90 | 22,970 | 3.8x | f/2.0-4.9 |
| Casio | EX-Z35 | 7,940 | 4x | f/3.2-5.9 |
| Casio | Z280 | 9,380 | 4x | f/2.8-7.8 |
| Casio | Z90 | 8,450 | 3x | f/3.1-5.6 |
| Kodak | M530 | 6,080 | 3x | f/2.8-5.6 |
| Kodak | M575 | 9,849 | 5x | f/2.8-5.6 |
| Nikon | L22 | 6,240 | 3.6x | f/3.1-5.5 |
| Nikon | S220 | 7,210 | 3x | f/3.1-5.9 |
| Nikon | S570 | 9,070 | 5x | f/2.7-6.6 |
| Nikon | S640 | 14,420 | 5x | f/2.7-6.6 |
| Olympus | FE-5030 | 9,790 | 5x | f/2.8-6.5 |
| Olympus | MJU-7030 | 11,700 | 7x | f/3.0-5.9 |
| Panasonic | DMC-FS4 | 5,350 | 4x | f/2.8-5.9 |
| Panasonic | DMC-FS42 | 6,700 | 4x | f/2.8-5.9 |
| Panasonic | DMC-TZ6 | 15,450 | 12x | f/3.3-5.9 |
| Samsung | EC-PL80 | 9,070 | 5x | f/3.4-5.9 |
| Samsung | EC-ST70 | 10,180 | 5x | f/3.5-5.9 |
| Samsung | EC-WB650 | 15,270 | 15x | f/3.2-5.8 |
| Sony | DSC H55 | 14,360 | 10x | f/3.5-5.5 |
| Sony | DSC T90 | 11,490 | 4x | f/3.5-10 |

**Street smart**

**Nokia's budget offering**
Nokia Launches First Dual SIM Phone The C1:
http://bit.ly/csJzXq

**N8 coming soon**
Symbian 3 Powered Power House, Nokia N8 To
Hit Stores Soon: http://bit.ly/9Dz8uw

# UNDERSTANDING WARRANTY FOR YOUR PEACE OF MIND

PHOTOS.COM

After receiving his pay hike, Balvinder, a High Court employee felt it was prudent to fulfil his wife's long standing desire for a front loading washing machine. He was quite meticulous in finding the best deal possible. Eventually, the shop owner persuaded the couple to buy a lesser known brand with a five-year guarantee that covered fault and damage of all sorts. A year, the product started giving way.

That began the game of passing the buck. The seller would say it's the company's responsibility to offer guarantee and their only job was to sell the product. The only help rendered by the seller in this matter was providing the service centre's helpline number. To add to their woes, the couple realised their warranty was over as it was only for one year! The only option left was to approach the consumer court for action against the company and the seller. This is not an isolated case.

In recent times, guarantees and warranties have emerged as a safeguard to consumer rights. By means of a guarantee or warranty, the seller or service provider is liable to replace or repair the product or service provided, if it is below the expectation of the benchmark. Normally, this is a promise made by the manufacturer to the customer for a fixed time frame.

Although similar, in commercial parlance and legal practice, especially in the consumer law arena these are two different concepts with a slight difference. While guarantee refers to the post sale stand of a seller or service provider in the capacity of a guarantor. In the event of any fault or malfunction with the product or service, the onus will be on the company to sort matters out. Consumers can seek a replacement of the product or service. Generally, it is believed that one can get hold

*This content is brought to you by*
**consumer mate**

**If you're facing a problem with your purchase, write to us at help@consumermate.com**

of their money back simply because they have a guarantee. Warranty, on the other hand, implies the provision of getting the article repaired when the product is defective. However, the recent commercial trend is the use of the word limited warranty that puts conditions on the specifics of a product, the nature of damage incurred and the time period of the validity of the document. Consequently, the prospect in a warranty is abridged by the expression "limited". Therefore there is a distinction in the real meaning and strength of guarantee and warranty which consumer must appreciate before

expecting the benefit of such condition. Another term you need to be aware of is that of express and implied guarantees. An express guarantee which is a clear import of the product purchased. A television is a good example. The picture and sound of television has to be good, which is an express implication or warranty. However, if consumer needs to have television for his restaurant requiring a minimum continuous functioning of 13 to 14 hours a day, then it is the duty of the seller to provide accurate information regarding the consumer's warranty rights. Another example is if someone buys sports shoes, there is an implied warranty that it will go good for rough terrain and tough use.

Unless the shopkeeper gives you something in writing, do not assume you have any warranty or guarantee. Make sure you have in your possession documents such as bill and warranty cards. For the sake of convenience, make it a habit to write the important dates when the warranty or guarantee of your product is to going to end. The best way is to call the company people to check all the things a month before when it actually ends. If a particular problem recurs, then keep the details of the complaint. One can a make a good case of the getting the things repaired it the problem was the recurring and inherent in the product even after the warranty or guarantee expires.

Another trait which has been commonly found in Indian customers is that once they've got a good deal, they don't think about the other aspects. They generally do not get the warranty document stamped and signed which is very common requirement for most products. So the next time you purchase anything, grill them rather than merely concentrating on price.

**Expert buying advice**

**Visit Consumermate.com for expert buying advice and comprehensive information on Laptops, Mobiles, TVs, Cameras and Camcorders**

**Touch or keypad?**
Best Touch Screen Phones With a Full QWERTY
Keypad: http://bit.ly/cvqOuI

**Godrej TVs**
Godrej launches Game LCD TV:
http://bit.ly/bSVTwn

**Consumer protection**

## COMPLAINTS RECEIVED

### Mobile Phones
### Case File #855
**1.Subject: My Boss Mobile phone is not working**
I purchased a Boss mobile phone recently from Naaptol.com. My mobile phone has not been switching on for the past couple of weeks. I have tried getting it checked at most shops, but none of them were of any help. In lieu of no company service centre, I'm in a fix and feel completely cheated and dissatisfied. I have even asked all my near and dear ones never to trust any such web sites or their products.
**Megha Aggarwal**

**Answer by Consumermate:**
Thanks for sharing your views. Do not feel cheated as you can always take legal recourse against the company. At this stage, you can write a registered letter to the company about your problems in shape of a legal demand notice. You can call upon them to rectify all your problems with in 15 days failing which you can file consumer complaint with the consumer court. I hope some sense will prevail over them and they will sort the things.

### Case File #872
**HTC Tatoo mobile is provided with 2G feature instead of 3G**
I bought an HTC Tatoo mobile in November 2009. When I visited the HTC site, it described it as a 3G-enabled phone. Also when I purchased the mobile from their authorised dealer M/s Ascentel from Commercial Street branch, Bangalore, I was told it was a 3G mobile. Later when BSNL introduced 3G services in Bangalore, I was surprised to note that it was only a 2G mobile. When, I contacted HTC, I was told that it was a 2G mobile marketed in India, and 3G in other parts of the world. Initially, the HTC site went into the world page and now the company has changed and it directs you to the India site of the company. The retailer also says he was unaware of the features of the handset sold in India. Repeated complaints with the company over phone

and email has yielded no results. They say it's my fault for having viewed the international site and not the Indian site, and want me to sort out the problem with the retailer. The discussions with the retailer while buying the handset was only oral, hence there is no proof for what they told me about the features. Once, the company told me they are coordinating with the retailer to sort out the issue and even had asked me to forward a scanned copy of purchase proof, which I did. Is there any remedy for me?
**Sudhakar Sundersingh**

**Answer by Consumermate:**
Dear Customer,
Yours is a typical case of a big company backing out once the product is sold. Any company that sells a product is duty bound to provide all essential features in a product that they have sold for a consideration. For now, you can write a legal demand notice to them for selling a different and unwanted product. It is a case of gross misrepresentation and negligence on part of the retailer. They just cannot fool you by representing anything just to sell the product. In your notice, you can ask for the damages for the loss of work incurred due to non function of the mobile. I hope things will be sorted out.

### Miscellanous
### Case File #963
**Nokia care is not repairing the phone under warranty**
I have a Reliance CDMA Nokia handset. It had a problem that it used to display CONTACT SERVICE and neither can I make nor receive any calls. But instead of repairing the mobile, they told me to take the handset in same condition because they were not able to repair the mobile in guarantee or warranty period. What should I do?
**Vijay Kumar Bagaria**

**Answer by Consumermate:**
Dear Customer,

As long as the product is under warranty/guarantee, you have a legitimate right to get it repaired. The company cannot wash off its hand from its liability when the complaint or any problematic issue is raised during the guarantee period.

### Case File #969
**Subject: Service center of HTC is not providing customer satisfaction**
I have an HTC T3320 Touch 2. My complaint number is 19419. I have been to the service centre twice. First the customer service advisor informed me to upgrade the handset as it was getting switch off. After 2-3 days I was facing the same problem. Then I visited the service centre again on August 24th. They asked me to submit the cellphone and advice to call after 24 hours. When I contacted the service centre, they asked me to wait for a week. I spoke to the manager who told me to call after 24 hours. When I contacted them, they said that the phone is defective, and that they're investigating the matter and would inform that they will contact in 48 hours. What kind of customer satisfaction is this? We either want our money or a replacement. Kindly reply.
**Bhupat Singh**

**Answer by Consumermate:**
Dear Customer,
We appreciate your stand, and even more the fact that you're aware of your rights as a consumer, and have made it clear to the phone company that you will be taking action in case they don't listen to you. The gravest mistake commited by most consumers is of not pursuing matters related to rights. The only thing that we suggest is that you write a letter and send it to them via registered post, containing all the details of your complaint. In case they don't come up with a solution, then you may go ahead with your complaint in the district forum. I hope some sense will prevail over them at this stage itself, and that they sort out things.

# digit
# KILLER RIGS

everything you will ever need to build your own PC. whatever your budget.

- Basic rig = ₹21,400
- Multimedia cum gaming rig = ₹31,600
- High-end Multimedia / Gaming rig = ₹49,500
- High-end gaming PC = ₹62,350
- Ultra high-end PC / Gaming rig = ₹1,70,110

## PRIMARY COMPONENTS

### PROCESSOR
- AMD Athlon II X2 245 / ₹2,950
- AMD Athlon II X4 635 / ₹5,050
- Phenom X4 945 / ₹6,950
- Intel Core i5 750 / ₹10,100
- Intel Core i7 960 / ₹31,100

### MOTHERBOARD
- ASUS NVIDIA 7025 M2N68-AM / ₹2,275
- Gigabyte MA78GM-US2H / ₹4,200
- ASUS M4A78-PRO / ₹5,850
- Biostar Tpower P55 / ₹6,700
- ASUS P6T Deluxe V2 / ₹19,300

### RAM
- 2 x 1 GB DDR2 800 MHz (Kingston) / ₹2,500
- 2 x 1 GB DDR2 800 MHz (Kingston) / ₹2,500
- 2 x 2 GB DDR2 800 MHz (Corsair) / ₹4,600
- 2 x 2 GB DDR3 1333 MHz (Kingston) / ₹4,800
- 3 x 2 GB Kingston HyperX T1 2,000 MHz / ₹10,800

### GRAPHICS CARD
- None
- Galaxy GeForce GT240 / ₹4,750
- Powercolor Radeon HD 5750 / ₹7,550
- XFX Radeon HD 5850 / ₹16,200
- ASUS GeForce GTX 470 x 2 (SLI) / ₹41,400

### HARD DRIVE
- Seagate 500 GB 7200.11 / ₹1,900
- Seagate 500 GB 7200.11 / ₹1,900
- Seagate 1 TB 7200.12 / ₹3,150
- Seagate 1 TB 7200.12 / ₹3,150
- WD Black Edition 1 TB x2 / ₹9,000

### MONITOR
- Dell S2009W / ₹6,975
- AOC 2236Vw / ₹8,400
- AOC 2236Vw / ₹8,400
- AOC 2236Vw / ₹8,400
- BenQ G2420HD / ₹12,000

### CABINET
- NZXT Gamma Classic / ₹2,150
- NZXT Gamma Classic / ₹2,150
- Cooler Master 690 / ₹4,200
- Cooler Master 690 / ₹4,200
- Cooler Master HAF 922 / ₹6,600

### SOUND CARD
- None
- None
- None
- None
- ASUS Xonar DX / ₹4,300

## SECONDARY COMPONENTS

### POWER SUPPLY
- VIP 350 Watts / ₹850
- VIP 400W Gold / ₹850
- Corsair VX450 / ₹3,700
- Corsair VX450 / ₹3,700
- Corsair HX850W / ₹10,000

### SPEAKER
- None
- None
- Altec Lansing VS2421 / ₹2,200
- Altec Lansing VS2421 / ₹2,200
- Altec Lansing MX 5021 / ₹6,500

### MOUSE
- Logitech 3 button scroll / ₹300
- Logitech 3 button scroll / ₹300
- Logitech MX518 / ₹1,300
- Logitech MX518 / ₹1,300
- Logitech G500 / ₹3,700

### OPTICAL DRIVE
- LG H55N / ₹1,100
- LG H55N / ₹1,100
- LG H55N / ₹1,100
- LG H55N / ₹1,100
- LG WH10LS30 / ₹11,010

### KEYBOARD
- Logitech Multimedia / ₹400
- Logitech Multimedia / ₹400
- Logitech Multimedia / ₹500
- Logitech Multimedia / ₹500
- Logitech G15 / ₹4,400

## MISCELLANEOUS

### TABLET
- None
- iBall Design Tablet PF1209 / ₹8,900
- Wacom Intuos4 Medium (PTK-640) ₹21,280

### MOUSEPAD
- None
- Razer Goliathus Speed (Oversized) / ₹1,400
- Everglide Titan / ₹1,650
- Steel Series QCK Heavy / ₹2,000

### HEADPHONES
- None
- Sennheiser HD 201 / ₹1,500
- Sennheiser HD 280 Pro / ₹5,500

### GAMING CONTROLLERS
- MS Xbox 360 Controller / ₹1,350
- Logitech Momo / ₹5,500
- Logitech G27 / ₹15,520

### PRINTING SOLUTIONS
- Canon PIXMA iP1980 / ₹2,695
- Canon iP3680 / ₹5,595
- Epson B-500DN / ₹22,999

### POWER PROTECTION
- None
- APC 550W / ₹2,400
- Numeric 1 KVA / ₹4,200

**Did you know**
Flex applications can be written using Adobe Flash Builder
or by using the freely available Flex compiler from Adobe

**Additional Skills**
Understanding of browsers, C++, CSS, XML,
JavaScript, various APIs will help you excel
in Flash development

**Work@tech**

# Careers in Flash

**The demand for good Flash developers is going sky high, while the scarcity is driving up salaries considerably. There couldn't be a better time to look at it as a viable career option**



SOURCE: FLASH PLATFORM SUMMIT

Siddharth Parwatay
*siddharth.parwatay@thinkdigit.com*

**W**hen someone talks about Flash what is the first thing that comes to your mind? Our guess would be "moving images, animation, and Flashy Stuff". If your thoughts hover in that area, you're not wrong but you're not completely right either. In reality, Flash has now grown from a mere animation tool that it was, into a platform. The word platform is being thrown about loosely these days, so we'll come to that in a bit and explain what makes Flash a platform. But first, let's take a step back and understand how Flash has evolved. "Initially when Flash started off as an animation tool, people looked at it simply as something that can help creating animations for the web – things like banners and ads. But there's a huge interactive angle to it that made the adoption of Flash so rampant," says Himanshu Mody, CEO Tekno Point Multimedia, one of the leading Flash Training institutes in the country. Speaking of adoption, a 2008 survey by Research & Markets, Ireland pegged the software developer workforce in India at 1.7 million developers and projected a growth of 25 per cent by 2010. Though impressive by itself, the actual figures may have gone way above the now dated projections.

## Lay of the land

At the very broad level we can classify two distinct streams that Flash allows you to pursue in terms of a career. There's the creative side involving design, that's now increasingly being termed as Digital Content Creation. "For a designer it's always Photoshop first. Then we take our design, import it in Flash and bring it to life. Flash gives you the ability to bring motion into still images and that's what attracted me. It gives your website/animation/movie a sleekness. That's how I started out", says Abhilash Krishnan, Creative Director, UFO Digital. You have story telling mediums like film, television, or even advertising who use Flash for storyboarding and advertising companies that use it for creating rich media interactive banners. In the current scenario the digital content designer is in the next stage of evolution. Such designers will eventually have capabilities to create content in Print, Web and Mobile as well. "In the future I don't see companies hiring print, web and mobile designers separately," said Himanshu. "These next generation designers will be able to service any of these segments".

Then there's the programming-heavy development side of Flash that entails everything from RIAs (Rich Internet Applications) and Web Development to Gaming, to eLearing and Enterprise Level applications. Gaming companies leverage it for casual as well as high end MMORPGs games, while at the enterprise level there are consulting companies such as Accenture and Deloitte besides system integration companies such as Wipro and Infosys that use Flex to build solutions for their customers. These streams are not mutually exclusive. There are a lot of overlaps and that's where things start to get interesting.

When it was just Flash, good interactive programmers or developers stayed a little shy off it, because the environment was not supportive of the best programming practices that were available in some of the other tools like Java. With the inclusion of Adobe Flex and other tools it transformed into a true platform for creating some of the most robust apps complete with interactivity, business logic, server side communication, data linkages *et al*. The best of the programmers got attracted to Flash and because everyone wanted to have rich, good looking interfaces for their applications the natural progression was to go with Adobe Flash. The programming side evolved with time to an object oriented approach, starting with Actionscript 1.0 to now Actionscript 3.0. A lot of flexibility was added for development of widgets as well.

**"Though industry requires professionals with certifications it also gives importance to individuals with strong portfolios. So it would be good for budding enthusiasts to work on creating their portfolios while studying Flash"**
**Abhilash Krishnan,** Creative Director, UFO Digital

**Work@tech**

**There's more to Flash**
With Android supporting Flash 10.1 content, you will soon see set-top boxes and maybe even Google TV running Flash content

**Open Screen Project**
A project that aims to provide a consistent runtime environment for open web browsing and standalone applications built on Flash Platform on various devices

"The recent development of Papervision 3D (incorporates 3D into Flash) and the ability to simulate augmented reality in Flash gives it a lot of scope for both experience based advertising, gaming and online availability," says Abhilash.

## Certifications and training

Both career oriented and tool specific courses are available from various training institutes such as NIIT, Arena, Tekno Point Multimedia, Animaster (Bangalore), etc. Training institutes offer both design as well as development/programming tailored courses. The Career courses are usually the best choice and are structured towards an objective. For instance the two new courses at Tekno Point offer training in two streams – either to help you become a Digital Content Designer or RIA Developer. So these kind of courses are not tool specific i.e. learning either Flash or Flex or Illustrator. Instead they will help you get familiar with whatever tools you need to learn to achieve your desired skill be it Acrobat, Action-Script or Flex. There are also short courses for working professionals that last no more than 10 days. These short courses help you transition from other programming backgrounds to Flex.

As for certification, there are two main accreditations offered by Adobe in this field. Adobe Certified Associate is an entry level qualification. It's for people who use Adobe products, usually as students as part of a college curriculum, and want an official certification to qualify their abilities. Adobe Certified Expert is for working professionals who are into Adobe products already and want to enhance their career. While ACA is general, ACE on the other hand is specific to a particular tool from Adobe. You can become an ACE Master in Flash, Photoshop and Illustrator. "It gives you a distinct identity if you've cleared these certifications. There are several Adobe training partners such as Tekno Point that offer training for these exams, while to actually take the exams you have to go to any of the testing centers in India," adds Mody.

## Let the games begin

Game development in Flash is one of the most exciting and high paying verticals in this sector. Anyone who has learnt Flash

from the development standpoint would most certainly be interested in game development. Most of the Flash developers in India are into e-learning – which is a more simplistic from a development standpoint. Their coding logic is very linear. In gaming you have to use physics and more complex algorithms to make a fun game.

There's a lot of opportunity across the gaming industry for qualified Flash developers, supported by an acute shortage resulting in a lot of competition to get the best people. "The opportunities for game development are not just casual gaming which are PC based or browser / download-able games, there are larger scale games such as virtual worlds and massively multiplayer online games also being done in Flash. The backends often end up being PHP with the programming done in Java. But the entire front end is handled in Flash." says Robin Alter, CTO and Founder, Kreeda Games India Pvt. Ltd.

Flash and Flex make it easy to make games and applications but at the interna-



**"I suggest building a two player game on any of the multiplayer engines that exist, to see how messages, and interactivity are done between two cross clients, how media can be dynamically served into a flash file to create an ever changing virtual world. Learning these kinds of things is where everyone is going"**
**Robin Alter,** CTO and Founder, Kreeda Games India Pvt. Ltd.

tional level, companies such as Kreeda look at the quality of code, the re-usability of the code, and whether a person optimises the game. Emphasis is laid on the efficiency of the code as well as the performance. Candidates are given simple tasks to ascertain whether they think in an object oriented manner and see if "their code is elegant." People who have come from Java into Flash often come with a good set of skills. The syntax is similar and the migration is easier. People with good Flash programming skills can pick up Flex more easily than vice versa. "Apart from having a good academic record a person needs to have a good eye for details and logical reasoning. This helps in working on the game concept and to visualize the game before getting down to actual development", says Deepak Abbot, VP-Product, Zapak Digital Entertainment.

As a game developer you would generally start as a junior developer and then progress to developer, then senior developer, next comes project lead and then a tech lead. A junior developer with say a year and a half of experience on Flash can get anywhere from ₹3.5 to 4.5 lakhs per annum. It goes up considerably after each level. "I've interviewed people that are in the 20 lakhs range. People with around ten years of experience are in the 30 lakhs range. These high pay scales are for tech leads doing multiple projects and doing very complex stuff like large scale social games" says Robin.

One would think game designing would require a high degree of creativity. "You know what, I don't stress so much on creativity from a game development or programming standpoint because a game developer is not required to be a game designer. They're separate roles. But creativity does help". To be a good game developer in Flash also requires you to do R&D. The gaming environment is ever changing – there's always new technology, there are always new challenges therefore you need to be constantly interacting with the international community, constantly finding out how to do new things. Gaming is about new innovations.

**Best of the web**
If you want to check out some of the best
websites built on today's cutting edge
technologies head over to www.thefwa.com

**Digit webinars**
Go to www.thinkdigit.com/webinars for a
video of a previous webinar on IT security

**Work@tech**

## Enterprise level

At the enterprise level Flash and Flex are being used to create engaging client-server applications, web applications, CRM applications and financial services applications that help businesses bring a new level of interactivity for their customers. "Almost everyone is talking about creating compelling user experiences. Companies themselves are investing a lot in generating this kind of a user experience for their customers – take for instance Harley Davidson or Allen Solly – they've made their web experience fully in line with their brand and what it stands for. Flash is indeed letting them engage better with their customers." says Prabhjeet Singh, Country Marketing Head, Adobe Systems India.

Adobe Flash is the front end for these applications while you have a lot of application logic code sitting behind the animation or motion you see on your screen. Flex takes care of this server side communication and loading data from databases etc. Designing at the enterprise level happens at three levels. First is the usability and interface design side, which requires a person with knowledge of data architecture on the web, someone who can create a good menu layout and pageflow etc. The second part is designing the prototypes which requires Photoshop and Flash based animation designers who create movable designs. The third is writing of the business code, connecting it to the server side, working with the database logic etc which is done by the Flex developers. Different organisations use different sets of people or they use one person for all three. Companies, usually outsourcing units, who are into building these kinds of applications require people with an Engineering or MCA type of background with good programming ability. "For Flex candidates, we have a written test for assessing knowledge and programming ability, and we also look at previous work, if they have any. Then technical interviews follow where problems on Business Logic are asked and candidates have to come up with the thought process for a solution. Similarly we test creativity for Flash candidates by giving them a particular component and ask them how they could make it look better," said Sandeep Dasgupta, Director-Engineering, Tavant Technologies.

Freshers can expect anywhere between three to five lakhs per annum. At the Architect or Technology Lead level it's even more difficult to find the right people, so the premium goes as high as 50 to 100 percent over a similar Java person. These are technologies that are at the most three to five years old. So when you're asking for an Architect with 10 plus years of experience, you're assuming that at least five would be spent on Flash or Flex. Not many companies or individuals made the switch in the early days. Architects oversee design, program architecture, ensure code quality is good, and mentor programmers. The take away at this level ranges from ₹14 lacs pa all the way upto ₹30 lacs p.a.

"**The premise that HTML5 will eventually replace Flash to me is a myth. We're comparing what Flash already did some time back to what HTML5 is only promising to do.**"
**Himanshu Mody** CEO Tekno Point Multimedia

## The HTML5 debate

Reams have been written about this subject and everyone is waiting with bated breath to see the outcome. If indeed HTML5 will let you do many of the things Flash can, it's not a stretch of imagination to think of the eventual questions – Will Flash be phased out? Will Flash developers be left redundant? If so, can they transition to the new standard? – The industry opinion seems to be unanimously similar. "It is a step in the right direction. HTML 4 didn't support a lot of functions, you had a lot of add on components being done like XML, XHTML, XForms etc. So HTML5 is a right step towards taking everything back into the standard hyper text model. Having said that it is still evolving," said Sandeep. It is still an evolving technology standard. Besides, each of these tools are meant for different things. So in the future you'll see a proper position for each of these. It's more likely to work in conjunction. "Take for instance YouTube - They're thinking of HTML5, but they believe it'll be five years till they completely move to it. The kind of control you get over video with flash – the way they've built it – be it full screen, scrolling, encapsulated embedding etc – is something that Flash

does so much better." Sandeep adds.

Himanshu (Tekho Point) seconds this sentiment. "The kind of enterprise level apps (with security) and rapid development using Adobe tools is something unique to Flash. In the long term HTML5 and Flash will be complementary. There will be some places where it would be beneficial to use Flash and at others HTML5. As a designer or developer you have a freedom of choice. You keep in mind your client's objectives and choose the technology accordingly. I won't be surprised if from a tool perspective, a Flash developer makes something in Flash and in future they're allowed to simply export it in HTML5, so that they can skip the learning curve completely" he goes on to add. What about the gaming industry? Robin Alter CTO Kreeda, says, "Nurturing the developer community is important and so is nurturing the publisher. Publishers generally support one technology for their games. HTML5 and Flash may actually be pretty complimentary so you may be able to use both" As for the question of being able to transition the answer is pretty simple. Yes transitioning, if at all needed, is not that difficult. Both technologies are based on similar programming principles. For all these languages have the same object oriented programming elements. If you're coding in Flash you write in ActionScript and do the styling in CSS. If on Flex you'll use MXML. Similar kind of concept exists on HTML5. Your code might contain JavaScript, and it'll definitely contain CSS style sheet. You'll still be using the same technologies in a different way, so its not really a transition. You just need to make yourself aware of newer concepts like HGML where you can do 3D images, and you should be set.

So to conclude, since so many industry experts we spoke to believe in a coexistence perhaps it would be beneficial to dabble in both technologies. Diversification after all can only add value. Who knows, maybe in five years you might be one of those rare and sought after Flash + HTML5 professionals who can slice through code with a double edged sword.

**Flex 4.5 code named "Hero"**
It includes a few more Spark components, and will eventually support building mobile applications

**Adobe previewing Melrose SDK**
This can be used for developing for-pay application using Adobe AIR for sale in the Adobe marketplace and Intel's AppUp Store

# Extending our AIR Feed Reader application with Flash Builder 4

Previously we created an RSS Feed reading application in Adobe AIR using Flash Builder 4. Our previous application had a simple UI which allowed us to enter a URL for the feed, and has two panes one below another. One to list the items in the feed, and the other to display the summary of the selected item.

We assume you have completed the previous part in this series (refer to page 104 of the September 2010 issue). Alternatively, you can check out the article at http://www.thinkdigit.com/d/fb4_tut1_4.

Our previous application could only handle a single feed at a time, which is a rather huge limitation for a feed reading application. In this article we will develop our application further by adding support for reading multiple feeds. We will make a Feed browser of sorts which will display a "tab bar" for switching between active feeds. Each "tab" will display its own list of feed items, and we will be able to select any item read the summary.

## Understanding the changes to our application

So how do we go about this exactly? Let us first take into account the visual additions, in the form on controls / components. We will need:

## A tab bar

We will simply use a button bar for this. A ButtonBar component makes it easy to add multiple buttons in a row. Each button will have a label corresponding to the title of the feed.

## A button to add a new feed

Since we have to handle multiple feeds now, we need to have a button for adding a new feed. We will re-purpose the "Load" button of our previous application for this.


The interface is rather clean

## A close button

We should have some way to remove the currently active tab if we want. This could be a simple button labelled "X" or if you wish to make it look better you can create an icon for it. That's about it; this will cover our needs from this application.

Now about the changes inside the application. Since we are now going to handle multiple feeds at the same time, we will need to have an array holding data for all the feeds, so it is ready when we click on it.

To wire everything so that it works, with minimal coding we will bind the array of feeds to the ButtonBar. This will automatically ensure that the feeds and tabs are in sync. We will also bind the feed data for active tab to the list showing the data items. This way the data will automatically change as we change the current tab.

The HTML component is already bound to this list, so that bit will work as always. What we need to do is to write the code that will add tabs to this array of tabs and load the corresponding data. We also need code for closing a tab and removing that feed from the array. The rest will work by itself!

## The UI

Our UI is not changing drastically. Our load button will now transform to a

button labelled, "Add Feed". Our previous code was simply a horizontal group with a text input for the URL and a load button. Right after this we will now add the following:

```
<s:HGroup width="100%">
    <s:ButtonBar id="feedTabs"

requireSelection="true"
            width="100%" />
    <s:Button label="X" />
</s:HGroup>
```

This is another horizontal group with two components. The first is a ButtonBar which will display our tabs and let us switch between them. We have set its width to 100% so it takes us as much space as is available and pushes the close button to the edge. The second is the button to close the currently active tab, labelled simply "X". The requireSelection="true" bit in the code is to ensure that at least one tab is selected at any given time (if there is at least one tab of course). This is all we need to add, however the old "Load" button may be renamed to "Add Feed" or simply "+" if required.

## The code

First of all we will define a new data type for the data associated with out feeds. For each feed tab, we will need to store a title and the feed data at least. Since this is a simple example, we will not manage refreshing the feeds every few minutes, otherwise it would have been wise to store the feed URL as well.

For this we will define a new Action-Script 3 class. This is simple to do with Flash Builder 4; simply right-click on your project, and under the "New" menu select `ActionScript Class`. This will pop up a new dialog box wherein you can enter details of your new class. Here is a little about some of the relevant parameters in the dialog:

**Native installers**
Adobe Air 2.0 can be used to create native installers for multiple operating systems

**PixelBender**
You can develop custom custom filters for Adobe Flash that can be used to process image and other kinds of data

**Developer corner**

The first option is labelled "Package". When you create a new libraries of code, it is a good idea to organise them so that they can be reused later on without problems. If you are creating a new Class for retrieving stocks information from Yahoo! called "YahooStocks" for a project called "Stock Manager", you might want to have a package such as `com.stockmanager`. Although it is recommended that you always place your classes inside a package, we will do without one here since it is a simple example.

The second option is for a name for your class. We are giving our class a name of "FeedTab". The convention is to have a class name where each word begins with a capital such as `MultiTouchManager` or `ArrayCollection`.

Superclass is used if you are extending an already existing class. Those familiar with object-oriented programming will understand what this means. Those unfamiliar, should look up inheritance in object-oriented programming. You could use this feature for example to create your custom version of the "Video" class called "SubtitledVideo" to provide support for subtitles.

Interfaces are a way of making different classes compatible with each other. For example, while the `ArrayCollection`, and `XMLListCollection` classes are very different — one stores data as an unstructured array, and the other as structured XML — both can be used as a source for the list. This is because both implement the IList interface. For them to be part of a list they both need to provide a few features, such as moving forward and backward in a list and getting the length of the list. If you create your own custom class which implements IList, it too will be usable.

This is the entirety of our "FeedTab" class:

```
package
{
    import mx.collections.
XMLListCollection;
    public class FeedTab
    {
```

```
        public var title:String
        public var
data:XMLListCollection;
    public function
FeedTab(title:String,
    data:XMLListCollection){
            this.title = title;
            this.data = data;
        }
    }
}
```

All it is doing is storing the data needed by our tab, which is: a title for the feed, and the feed data itself. The feed data itself contains a title, however this makes things a little bit simpler. The FeedTab function which serves as a constructor for this Class takes two the two pieces of data this class needs and stores them in the public variables which make up this class.

Finally we will modify our main code. First of all remove the variable feedData, we will no longer need it as we handle multiple feeds. Secondly, we will add a new variable, and array to store all our feeds' data.

```
[Bindable]
    private var
feeds:ArrayCollection = new
ArrayCollection();
```

Now in our onFeedLoaded function, we will need to add this feed to our list of feeds instead.

```
    private function
onFeedLoaded(event:Event):void {
        var rssFeed:XML =
XML((event.target as URLLoader).
data);
```

```
    var
feedData:XMLListCollection
            = new
XMLListCollection(rssFeed.
channel.item);
        var feedTab:FeedTab
            = new
FeedTab(rssFeed.channel.titles,
feedData);
        feeds.addItem(feedTab);
        feedTabs.selectedItem =
feed;
    }
```

The first line remains unchanged, and in the second line we are temporarily storing the XMLListCollection made up of all the items in the RSS feed, in a variable called feedData. Then we go on to create a new FeedTab item (which is the class we just created), by giving it the title of the feed (which can be found under `channel.item` of the RSS feed), and the feedData. We then push this FeedTab item into our list of feeds, and finally make the newly added FeedTab the new selected tab.

We should now go ahead and add "feeds" as the dataProvider for the `ButtonBar`, and set the ButtonBar's `labelField` attribute to "title" since that is the name of the field where we are storing the title of the feed that is to be used as a label for the button.

Finally, we need to handle removing tabs. This is easily done by adding a click handler for the close button with the following simple line of code:

```
    feeds.removeItemAt(feedTabs.
selectedIndex);
```

Here feedTabs is the id of the ButtonBar that lists the feed items. We are removing the item at the selectedIndex of the `ButtonBar` based tab bar, from the feeds array. This is only working as expected as the order of items in the feeds array and the tab bar is the same.

Believe it or not, at this point we have a functional multi-tab feed browser! Go ahead and test your code.

For an expanded version of this tutorial and the full code of this application you can check out this article online at http://www.thinkdigit.com/d/fb4_tut1_5.


You now have an RSS browser of your own

# Minting millions, the crazy way

There are hoards of people out there who have crazy business ideas, some of them work while the others just fail. People make a fortune by hosting pointless services on the web that no one ever thought of. Obviously because they are dumb in a way, yet they are laughing their way to the bank.
**Makes us wonder 'Gosh why didn't we think of that'?**

## Million dollar homepage

If pixels are up for sale for a dollar each, and someone thinks it's a good idea for advertising on a pixel of space, then we get the million dollar homepage. Over a million small businesses and brands advertise on a single homepage making it worth a million.
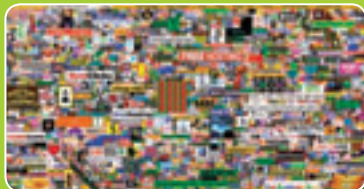
## Doggles

Well this one would just make you go... Whattt??? This team is dedicated to make your dog look cool in the summers. That's what 'Doggles' do – make goggles for your dog. They should be awarded the best dumb business idea of the year, which makes loads of moolah.

## Laser Monks

Hallelujah! We've seen the light! We mean the printed page. Monks at the Cistercian Abbey would refill your printer cartridge for free. Okay not for free, it's a full for-profit business with sales soaring above $2.5 million annually.

## Picky Domains

You've put in long hours and made your cool web site, but that does not guarantee decent amount of traffic for it. Guys at picky domains could choose the best names for your site. Saleable? It's making a six a figure sum annually.

## Mail from North Pole

If all your business ideas have failed, shift to the North Pole, pretend you're Santa and send postcards to little children telling them to behave and be good kids. Santamail.org does this and makes crazy millions each year.

## Buy my stupid ebook

Please guys, just go and buy this chap's stupid ebook and you would be earning in millions too. This is no joke. Look for affiliate programs and google ads on the site, and you'll know its making money.

## Antenna Balls

Think you can make money by selling car antennas online? Touted to be the largest online car antenna service, this million-dollar business is on a roll with just a simple, effective idea. Go to antennaballs.com to find out more.

## Fit Deck

We all have reminiscences of playing WWE trump cards in our childhood. A gentleman has taken this simple idea and sells trump cards online that showcase different exercise routines. Wonder how to use them? We're wondering as well!

## Designer Diaper Bags

If your business has 120 chains across the globe, then no doubt you are a business czar selling diaper bags! Rewind that a little bit. You read it right the first time. It's not going to change. Diapees and Wipees is a global business conglomerate doing swift business online and through its stores.

**121**

**Mafia II**
Explore Empire Bay during the World War 2 era

**HP sues ex-CEO**
HP has filed a lawsuit against its ex-CEO Mark Hurd who was part of a very public sex scandal. The suit aims to prevent him from joining Oracle and leaking HP's trade secrets

*Unwind*

# Weirdest video game titles

How some game designers just run out of new ideas to base their video games on, and instead design some really stupid plot lines and titles.

### Super Columbine massacre

Based on an unfortunate school shootout incident, *Super Columbine Massacre* was released on the sixth anniversary of the tragic event. Why would anyone develop a game with such a sensitive topic? A lot of criticism and objections made the game so popular it has been downloaded 4,00,000 times.

### Hong Kong 97

Following in the league of poor game titles and plot is *Hong Kong 97*. Set in the year 1997, when the UK officially handed over the city of Hong Kong back to the Chinese. The game's plot revolves around killing Chinese who've moved to the city, and increasing the crime rate ten fold.

### Communist mutants from space

Communist mutants from the planet Rooskee are searching for peaceful democratic planets like ours to destroy. The title and plot would surely make you wonder what a waste of time? Made by a US company called Starpath during the Cold War, the game was available on the Atari 2600.

---
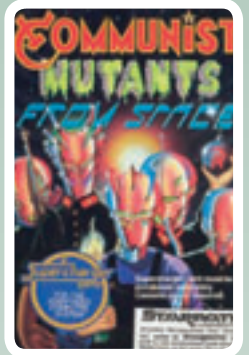
**How we unwind**

## Kickass

This superhero movie ain't about saving the damsel in distress and thrashing up the bad guys. Here the main dude gets hell of a beating but doesn't give up being a superhero

## Lullabies to Paralyze

We delved into some alternative rock this time. As the title suggests the tunes don't paralyze you but they sure have a numbing effect on your brain for a while, the album is by Queens of the stone Age.

## Mafia 2

Critics have been calling it a GTA rip off but we enjoyed our time playing this classic mob, gangster rip off. Check it out for its detailed narrative drama and some 50's style car and gun handling.

---

## Do more with Google

Apart from being your every day search engine Google offers much more. Here's a look at some other cool features of Google

褐牛跳升超过白

(http://bit.ly/MUE2X)
Can't figure out whether your text is Japanese or Korean use the Google language detector.

### Google Fast Flip

(http://bit.ly/3plHXw)
Fast flip aggregates news and presents them in a pictorial format. Trending topics are segregated under tags such as popular, recent, etc.

### Google Goggles

(http://bit.ly/dgDrww)
An app for smart phones, Google goggles searches for content based on pictures. Users can simply click a picture and get to know about it.

---

**DIARY**

The office has been buzzing with Samyukta's speaker test noises that very well went above acceptable decibel levels leaving Robert in a sound frenzy. Our team has been growing by leaps and bounds for the past three months. Rudresh has joined us from Bangalore, he'll be reviewing stuff for the Test centre. Speaking of Bangalore, Nash went there to attend FIRA (annual Robot World Cup) and came back with some awesome footage of mini mechas running around with the ball. Rossi has been donning an almost monk like hair style (he should seriously try changing that) for quite a while now. Kareena now climbs the parapet and has a tough time getting down, she says meow to all.

**$1 billion decline**
Facebook founder Mark Zuckerberg doesn't seem to be carried away by wealth. He recently turned down a $1-billion offer for his social networking business

**YouTube live**
Video hosting web site YouTube is testing the possibility of live video streaming as a service

Sony Computer Entertainment (SCE) and Microsoft have big releases this winter with the launch of motion-control peripherals for their respective consoles. It looks like SCE will be first among the two to launch its motion controller in the Indian market, with is expected to be already on sale by the time you are reading this. Microsoft's Kinect is expected to follow shortly as the official word is that they are committed to a launch before the year ends. In this issue, we will look at PlayStation Move, its technology and our hands-on impressions of the system. In the next issue we hope you bring you a more detailed review of PlayStation Move and impressions on Microsoft's Kinect.

# PlayStation Move: First Impression

## Eye on the Orb

The basic setup required to add motion sensing capabilities to PlayStation 3 includes a PlayStation Eye camera and a PlayStation Move motion controller. PlayStation Eye is a camera that can capture images at frame rate of 60 hertz at 640×480 pixel resolution, and 120 hertz at 320×240 pixels. The camera has been around in the market for a few years now, but it seemingly has not caught on among PlayStation 3 users. Reasons for this could be the device's dismal performance under certain lighting conditions, the constant need for calibration and its rudimentary capturing capabilities, which made for less than inspiring applications. The camera's performance in detecting motion has been infinitely improved with the introduction of PlayStation Move controller. The camera is better at tracking the movements because the controller has its own light source in the form of a glowing orb on the top. The LEDs inside the orb is capable of dynamically changing color depending on rooms lighting conditions. The orb's dynamic lighting ability also allows the camera to distinguish between different controllers when there is more than one in use. This has also reduced processing latency since the camera only needs to track the orb as opposed to the need to track entire scene, before Move was introduced.

## Sensors

The camera and the glowing orb are not the only things that are part of Move's motion sensing technology. The Move controller has a three-axis gyroscope, three-axis accelerometer and a terrestrial magnetic field sensor.

The gyroscope and accelerometer combine to form the controller's inertial sensors that can not only track movement in all three-axis but also detect subtle movements like twisting of the wrist. The magnetic field sensor (magnetometer) tracks the controller's orientation in relation to Earth's magnetic field. This third sensor compensates for drift and allows the system to keep track of the controller even when it is hidden from the camera, with the help of dead reckoning algorithms. The information from these sensors is sent to the console using Bluetooth.

## Move Controller

It is relieving to see that Sony has already included vibration feedback support from the start, unlike what they did with the Six Axis controller. On the outside, the controller has smaller version of all the four game buttons (circle, triangle, square and X) and the new 'Move' button in front. The Start and Select button are on the sides and the back of the controller has a single trigger button with better tactile feel than the standard controllers. The four game buttons are a little too small and are hard to press. Thankfully, all the game demos we tried barely make use of these buttons and this practice is likely to continue.

## Navigation controller

The Move navigation controller is meant for games that require a combination of gamepad controls and gestures. This is technically an optional add-on since the system allows the use of Dual Shock 3 or Six Axis controller instead of the navigation controller. However, as you can imagine, using the gamepad with one hand is easier said than done. This one-handed navigation controller has
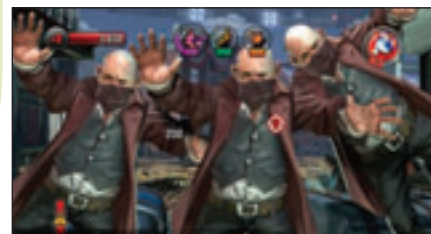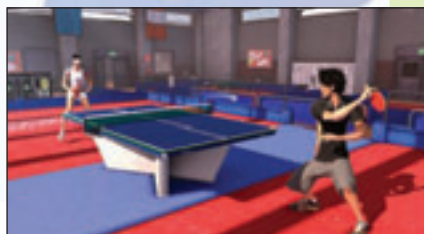
**Craiglist cleanup**
After being accused of promoting trafficking, Craighlist reportedly has decided to pull the plugs on its adult services section

**Samsung Galaxy tab**
Samsung claims its Galaxy tab is better than the iPad. It supports Flash, will run Froyo and will be upgradeable to Gingerbread

**Feature**

a single analog stick, a D-pad, two trigger buttons, two game buttons (X and circle) and the PS button. This controller will become quite absolutely crucial while playing first person shooter games, with the navigation controller in the left hand mimicking the function of a keyboard and the motion controller in the other hand doing the work of a mouse.

## Add-ons for an add-on

Sony is releasing PlayStation Move along with two accessories for the controllers. A charging station which can charge two Move controllers (or one pair of Move and Navigation controller) will be available in India for Rs. 1,999. In lieu of the charging stations, the controllers can be charged by connecting them to PlayStation 3's USB ports. However, this limits the number of controllers that can be simultaneously charged to just two.

The other accessory that Sony is releasing is the "Shooting Attachment" for the PlayStation Move controller. The controller fits snugly into the attachment which appears to be the size of a hand-gun making it easy to operate with one hand. This attachment will be available at launch for Rupees 999.

## Hands-on

We got our hands on the PlayStation Move Starter Pack for about two hours. This pack contains includes Move motion controller, PlayStation Eye camera and a demo disc. The disc contains a video tutorial for setting up the system, firmware update and nine game demos. The demo system was already updated and setup for us, so we really cannot comment on the process. We were told that the game demos on the disc need to be installed on the console's hard drive. The PlayStation Eye camera was placed under the television and it was switched to wide-angle mode. The motion controller can be used to navigate through the XMB by moving it around while holding down the trigger.

The motion controller needs to be calibrated each time you start the game. Games that can be played sitting down have a simple

calibration process which requires the user to point the controller towards the camera and press a button. A more complex calibration process used by some games requires the user to stand in front of the camera, such that his or hers captured image fits into a white box on the screen. Then you need to press a button on the controller once while holding it over the head and then again while holding it to the side. This way the camera records how high and wide the user's body profile is.

One game in particular, Eye Pet Move Edition, had a peculiar calibration process in which the user needs to sit on the floor and hold the controller in a position outlined on the screen. It was hard to figure out what exactly the system wanted us to do and neither we nor the Sony reps were able to get it to work. This was a worrisome sign which reminded us of the frustration with getting the Eye Toy or the PlayStation Eye camera to cooperate during calibration process. We faced similar issue with another game called Beat Sketcher which actually had a very simple, point and push calibration process. In this case, the system failed to respond to button presses on the controller, even after several attempts.

Apart from these couple of setbacks, the two hours we spent was generally a pleasant experience. The technology and its applications did not overwhelm us; however, at the very least it reassured us. We were quite relieved to know that Sony has finally nailed motion-sensing technology with PlayStation Move, after its less than successful attempts in the past. The underlying technology may be more advanced than what Wii uses. However, for all practical purposes, the overall experience with PlayStation Move was like Wii in the early days all over again. The applications of the technology that we saw at the demo were pretty straightforward and mostly predictable. We may have to wait a while longer till the developers get the hang of the technology and start applying it in innovative ways, just like

we have seen with Nintendo Wii. As it stands, the only advantage Sony has over Nintendo is that PlayStation 3 console is capable of HD graphics, as opposed to SD graphics on Wii.

## Games on the move

The PlayStation Move will launch alongside four games that are specifically designed for the technology. Some games will be exclusively available through PSN, whereas there are a few games already in the market that can work with Move controller after downloading a patch. Here is a quick word about the games that were part for the PlayStation Move demo.

## The Shoot

This is an on-the-rail shooter where the player is part of various movie shoots. The core game-play is pretty straightforward about shooting the bad guys and not hitting civilians. This game had the best visuals of the lot and was the easiest to kill time with.

## Sports Champion

Sports Champion can best be described as Sony's version of Wii Sports. The disc contains games like Table Tennis, Beach Volleyball, Archery, Gladiator Duels, Bocce and Disc Golf. Out of this lot, Table Tennis and Disc Golf were on demo and Table Tennis in particular was impressive in terms of control. The system was able to capture subtle movement like twisting of the arm which lets the player add spin to the strokes. The game also tracks player's position and accordingly the character on the screen switches between forehand and backhand. On the flipside, this game may require a pretty wide room to play—with minimum chances of collision— particularly when there are two people playing simultaneously.

## Echocrome ii [PSN Only]

The developers of Japan Studio have done it again with another brilliant game design which uses light and shadows for some mind-bending puzzles. A solid structure is placed against a white background and a flashlight in front of the structure casts shadow on the background. Player controls the position of the flashlight to change the shape of the shadow and solve the puzzle. Of all the games we tried at the demo, this one was by far the most interesting application of the motion controller. 🔲

**Genre:** First person shooter
**Studio:** Bungie
**Publisher:** Microsoft Game Studios
***Platforms:** Xbox 360

# HALO REACH

Halo Reach takes the player to the birthplace of Spartan program and one of humanities most populous and prosperous space colonies. The story explores the last few days of Planet Reach's defense against the full force of the mighty Covenant war-machine. It follows the exploits of a team of Spartans soldiers called Noble Team, and the player takes on the role of Noble Six.

## This is how we do it

*Halo Reach*'s goodness is not just in its emotive storytelling, but the action is just as engaging. If you liked the game-play changes made with *Halo 3* over its predecessors, then chances are good that you will enjoy *Reach* all the more. A significant and interesting addition in Halo Reach is Armor Abilities. Extending over the concept of equipment which was introduced in Halo 3, Armor Abilities are reusable pick-ups with a cool-down timer. There are a total of seven such abilities in the game, but the player can equip only one at any time. Effective use of these abilities becomes crucial during certain set-pieces in the Campaign mode on higher difficulties. On 'Heroic' difficulty level — which happens to be the recommended level — the enemy AI is quite efficient at flanking and cornering. This mixes well with the game's level design which has a fair bit of variety. Between the arsenal of human and Covenant weapons, vehicles, mounted weapons and Armor Abilities, there is a good deal of combinations and strategies to experiment with. This keeps things fresh and challenging right till you fire your last bullet.

## Reach online

The Halo series owes much of its fame to the series' multiplayer component and Reach has been built well around that tradition. Bungie has extended the Service Record and armor customization options, along with commendation, in a new credits-based content unlocking system. The sheer number of multiplayer game types and game customization options available in Halo Reach is very impressive and could very well be unique, at least among console games.

We played Halo Reach on Xbox Live using the free two-day Gold Access card that comes with the game, on a 1 mbps connection. The experience was without glitches and completely lag-free. One exception to an otherwise solid system is a standalone program called Halo Waypoint. This is meant to serve as a hub for all Xbox 360 releases of Halo games. This program consolidated Service Records and Achievements from Halo Wars, Halo 3, Halo ODST and Halo Reach into one epic career record. Unfortunately, the system appears to be broken or reeling under a lot of traffic, as we experienced constant disconnects with the server after every minute or so. There may be more to Halo Waypoint, but it's hard to tell when the system is not playing nice.

Halo Reach has earned its reputation as the killer-app for the Xbox 360 with its immersive single-player campaign, coupled with wide variety of multiplayer options. If you have ever loved a shooter, this game deserves your attention even if you not particularly a fan of the series.

Halo 3 boasts of emotive storytelling
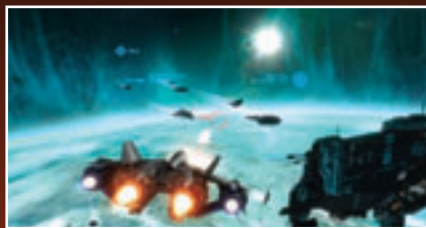
You'll find the enemy's AI quite challenging

# MAFIA II

**2K** Czech has returned back to the world of organized crime after a hiatus of nearly eight years. Mafia II is set during the WWII era in a fictional city called Empire Bay, which draws its inspiration from multiple American cities. The game's protagonist, Vito Scaletta, is from a poor family of Sicilian immigrants and a decorated WWII veteran. Vito, along with his sister and widow mother, stays in an unsavory part of the city and he quickly finds himself on the wrong side of the law while in pursuit of good times.

## An unfortunate tale

Mafia II stands out from all other gangland games in its more realistic and authentic approach to designing the game world and scripting the storyline. Even though Vito eventually fulfills his ambition, the journey to the top is wrought with betrayal, bloodshed and even a few years in the slammer. The game takes off the sheen of glamour that is generally associated with gangsters in popular media and offers a hard look at life in the underworld. The effect this has on the game is two folds—on one hand this makes for a very convincing and immersive world, but at the same there are no long lasting rewards. Each time you think you can just kickback and count your fortunes; something really drastic happens and you find yourself working for


Vito embroiled with crime

scraps again. As a player, you are constantly on the run from the law and from other members of the crime world. The game's storyline creates an uneasy air of paranoia, where you expect betrayal at every turn.

## This is not GTA

Mafia and GTA games may have a lot in common, but they differ in some very fundamental ways. While recent releases of GTA are sandbox games, Mafia II simply uses an open-world system to create a more convincing world. There is no place in this game for a mad rampage across town with cars, tanks and choppers on your tail. Mafia is about organized crime, so the law is broken only when there is money to be made and not just because you feel like it.

Mafia II has a very robust cover system which works better than in most other games. There is also a fair bit of close quarter combat in the game, which uses a fluid and responsive system of blows, blocks and counter attacks.

There is a handsome variety of cars and weapons in the game; however, they are all specific to the era. The game also has


Drive through the streets of Empire Bay

**Genre: Action adventure, Shooter**
**Studio: 2K Czech**
**Publisher: 2K Games**
***Platforms: PC (Windows),**
**PlayStation 3, Xbox 360**
***Reviewed on PC**

minor car customization options and also character customization by way of classy suits and trousers. There is very little else to do in Mafia II besides completing the main story. You can stickup stores or sell stolen cars in the scrap yard to earn some cash, but the reward does not match the effort.

Mafia II is highly recommended for those that do not always look for instant and constant gratification from their games. It is one of the more polished and convincing tribute to the era and the affairs of the underworld by a game; making it fit for the fans of that period. Wish the game had more to do after completing the Story Mode; however, it is not such a bad deal at a price-tag of Rupees 499 on PC.

## SKOAR! Expo 2010

**22nd to 24th October, 2010, at NSIC Exhibition Center, Okhla, New Delhi.**

**Play games**

**Compete with other fragmasters**

**Experience the latest gaming gadgets & gear...**

Email
editor@thinkdigit.com
for free passes

# The Open Source Challenge

Calling all developers out there! It's time for you to don your thinking caps and start cracking. Digit brings you a chance to prove your expertise in Open Source Development. Take the Open Source Challenge by completing three steps and win exciting prizes such as Canon cameras, Sheaffer pens, 8GB iPod Nanos, bags, and more.

digit DEV.WORKS presents OPEN SOURCE CHALLENGE CONTEST
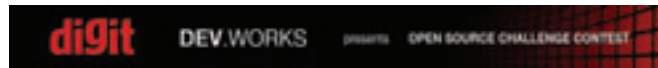
**Step 1:** Head over to http://devworks.thinkdigit.com/tosc
**Step 2:** Answer 10 simple questions.
**Step 3:** Fill in your personal details.

**Here's a teaser question:**
The popular GPL license was created by:
○ The Open Source Licensing committee
○ Geppetto Public Licencing
○ Germal Public Library
○ The Free Software Foundation

**HINT**
Read the e-book on Open Source Development found on the same link

Test your open source skills with Digit and win exciting Prizes

## DON'T MISS!

# digit Collector's Edition

Book the **Collector's Edition** in advance and get **November** issue for just ₹**50**. Find the subscription form attached on page 84.

## Digit Facebook Pages

JOIN THE GROUP THAT SUITS YOUR NEED!

http://www.facebook.com/thinkdigit
Your favourite magazine on your favourite social network. Interact with thousands of Digit readers and have some geeky fun!

http://www.facebook.com/consumermate
Expert buying advice and some awesome offers

http://www.facebook.com/IThinkGadgets
Community of People who love mobiles, laptops, cameras & other gadgets

http://www.facebook.com/IThinkGreen
Each one of us can make a difference to the environment around us and benefit ourselves by adopting green tools, technology & practices.

http://www.facebook.com/techkranti
Let's wake ourselves up and gather the tools of tech to change the future of our great nation. Join The Revolution!

http://www.facebook.com/gladtobeaprogrammer
Community of software programmers who enjoy writing code and want to grow their career in software development

## Survey for Developers

Digit has launched a new initiative called devworks some time back. With this initiative, we bring you content that can enhance your programming skills. We would like to understand from you areas that most interest you. This would help us deliver content that is most relevant to you.

digit {dev.works}
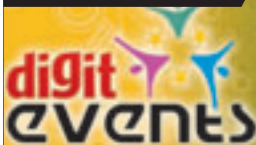the news source for Codewarriors

Every participant gets an assured gift voucher from Digit worth Rs.50. The voucher can be used to buy any of the current or past issues of Digit from Digit Store or can be used to book in advance the future issues of Digit.

Visit **www.devworks.thinkdigit.com/survey** for details

## October 2010

# digit events

Digit is taking interactivity to a new level, and will be organising events every month. You get to meet and interact with people that you wouldn't in the normal course of your life — industry experts, Team Digit, and other readers with similar interests. Stay updated and stay ahead of the curve by looking for this page in every month's magazine.

**OCTOBER 30 TIME: 1700 HRS**

1 **Webinar**          **Choose your PC components**

Want to build a new PC? Cant decide whether to go in for a Core i5 or Core 2 Duo? How good are the new NVIDIA Fermi 400 series cards in comparison to the ATI 5xxx series? Attended this sequel to our previous webinar and have all your doubts cleared. Due to the overwhelming response for our previous webinar, here we'll feature besides customised configs to suit your every need, an even longer question answer session. Your definitive guide to getting advice on what configuration suits your needs best.

For details on upcoming webinars and to view past webinars, visit thinkdigit.com/webinars

# Mobile touch screens

**Navigating your phone through keys is slowly going the dodo way. Touchscreen mobiles are flooding the market at an alarming rate. Here's a brief reference guide on the two most widely used types of touchscreens and how they work.**

**Resistive:** Cheaper option in the touchscreen category. Touch response lags a little bit, generally used with a stylus.
**How it works:** Air gap or microdots separate two resistive touch screens. Upon contact these two sheets are pressed together registering the touch, the corresponding menu or function is then opened.
**Life Span:** About 35 million clicks, or about four thumb-replacement surgeries
**Examples:** Samsung Corby series, Nokia 5800

**Capacitive:** Resistant to dust and shock, a capacitive touch screen is capable of multi-touch. Its highly touch sensitive and reacts with just a flick.
**How it works:** Mixed signal integrated circuits are placed on the alternative sides of the phone which are connected with two highly sensitive electrodes. Touching the screen results in distortion of electrostatic field, the touched location is then processed to deliver outcome.
**Life Span:** About 225 million clicks, or simply get a robot to operate it for you
**Examples:** Motorola Milestone, Samsung Galaxy and Wave

## New age chat lingo

**Just when you thought you had got a hang of chat-lingo, these darn teenagers go and change it all over again. Here's a quick guide to some new-age lingo, so that you're not left scratching that bald head of yours.**

- **AAK-** Alive And Kicking
- **AAR -** At Any Rate
- **BWL -** Bursting with Laughter
- **CRS -** Can't Remember Sh**
- **GFN -** Gone for Now
- **GMTA -** Great Minds Think Alike
- **IRL-** In Real Life
- **JMO -** Just My Opinion
- **LMAO** Laughing My #$$ Off
- **LHM -** Lord Help Me
- **OTW -** On The Way
- **PMJI** Pardon Me for Jumping In (when you intrude a conversation)
- **PMP -** No, not portable media player, this means Peed My Pants
- **\*poof\*-** (when someone leaves a chat room)
- **SETE -** Smiling Ear to Ear
- **TNT -** 'Til Next Time
- **WTGP?-** Want To Go Private? (move to a private chat window with that septuagenarian who's pretending to be a teen)

# POWERCOM
## GLOBAL LEADER IN POWER PROTECTION

## UPS
We use GREEN UPS technology

## UNINTERRUPTIBLE POWER SUPPLY
=
## UNINTERRUPTIBLE
### WORK
### GAMING
### SURFING

**Wider voltage range – 140V to 300V**
Powercom UPS can comfortably handle
voltage fluctuations without switching to battery mode.

**Compatiblity with major power backup alternatives**
Works with BOTH generators & inverters.

**Fully DIGITAL UPS range**
Only DIGITAL UPS can check its battery thus
ensuring long lasting & trouble free working of UPS.

**OFF mode battery charging**
The only UPS in this price category to
give offline battery charging.

## AP1050 UPS
Backup time
1 PC for 60 mins or 4 PC's for 15mins

## IND606A UPS *
Backup time
1 PC for 15 mins

## ASIA POWERCOM PVT. LTD
H.O. 7A/4, New Sion CHS, Sion (w), Mumbai-400022. Tel: +91 22 43332222 • Fax: +91 22 24012277
Email: sales@asiapowercom.com | www.asiapowercom.com

SALES AND SERVICE AVAILABLE ACROSS INDIA.

*93% A++ user satisfaction rating in SD Award 2009