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September 2005

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Dual Core Processors May Soon Be Mainstream. Are Two Really Better Than One?

SPECIAL

Tech Shopping Ideas For This Festive Season

3 Booklets complimentary with this magazine

Jasubhai DIGITAL MEDIA

Robots-Much Misunderstood

Maulik Jasubhai Publisher

WHAT IS THE first image that comes to your mind when you hear the term 'robot'? Most likely it will be R2D2 or C-3PO or even Hal (from *2001: A Space Odyssey*). If indeed 'robot' conjures up any of these images, then this term is actually jeopardising the future of robotics by a decade or more. The complexities that are implicit in these images are so high that no company in the world can make it a reality today.

The answer lies in simplifying the entire field of robotics. We need a new frame of reference for what our expectations from a robot are. In the industrial setup, we have made significant progress through simplification—we have robots that can weld and those that can lift heavy machinery. Then there are those that can test products for defects again and again and again... taking away the rote mechanical and menial jobs from us humans, dramatically increasing efficiencies and removing the element of human error.

Similarly, early computers started with the ability to perform simple tasks with unerring accuracy, be it calculations or record keeping. The success of the computer industry was predicated on taking care of simple tasks before entrusting and developing machines to handle things more complex, such as cleaning dishes and washing clothes!

Technologies required to develop truly consumer friendly robots already exist. We have made progress in the motion sensors, voice recognition, and processing power of robots in the past several years. We have also seen significant progress on the AI (artificial intelligence) front. Carnegie Mellon and other universities have been able to develop this technology to such levels that a robot is able to drive a car at speeds of up to 20mph.

Then the obvious question is: So why have we not seen an explosion of the consumer robotics industry?

The future of consumer robotics depends on—knowing what the customers want and what they are willing to pay for it. This is easier said than done. An industry driven by the nerds and people who love robotics for its own sake may not help consumers meet their needs. Today, robotics is more like a solution in search of a problem. Too many robotics businesses are built as if they were part of a university programme where every graduate student wants to add that one last feature to the product, just because he or she can. Sounds familiar to the Silicon Valley of three decades ago?

Let us start simple... Define the need. That may be the first step for the consumer robotics industry.

"We need a new frame of reference for what our expectations from robots are"

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YOUR TECHNOLOGY NAVIGATOR

September 2005 • Volume 5 • Issue 9

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Plot No D-222/2, TTC Industrial Area, MIDC Shirvane, Nerul, Navi Mumbai 400 706
Phone: +91 022-27629191/9200
Fax: +91 022-27629164

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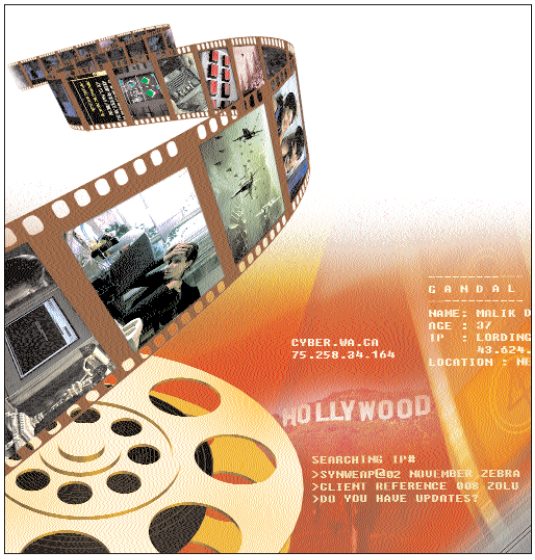
25 Movie Madness
Movies today use technology more than ever—think breathtaking special effects and digitised post-production techniques. But what about when it comes to depicting technology and how it is used?



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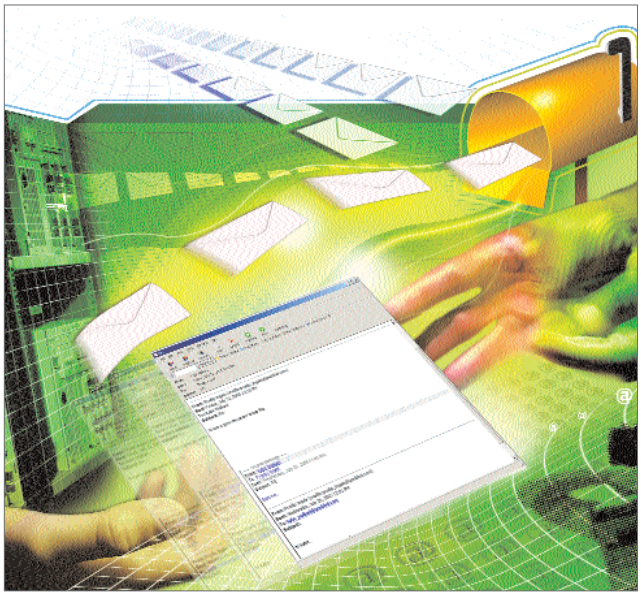

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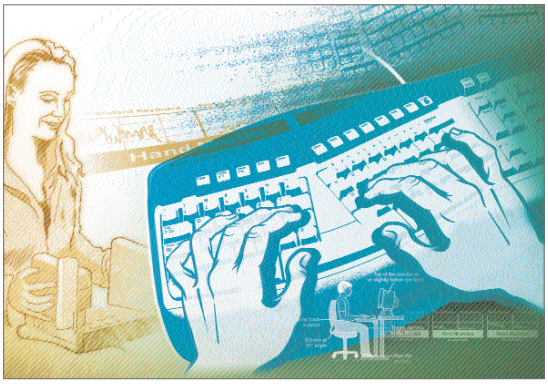
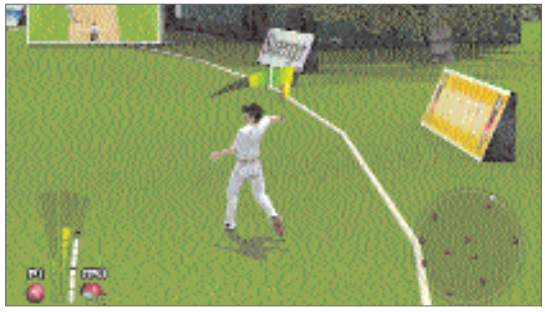
125 Ergonomics At Work

Get the right keyboard for your computer and save yourself from injuries due to constant typing. It's all about ergonomics





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F.E.A.R. Demo

This single-player demo for the action-horror FPS F.E.A.R. features an introductory cut-scene and a portion of the mission from the full game where you must find and neutralise Paxon Fettel

Brian Lara International Cricket 2005 Demo

Brian Lara International Cricket 2005 delivers all the atmosphere and excitement of major international cricket, in one-dayers, tests and tournaments

(*Read the review of the game on page 130*)

ASP Express DotNet Edition 4.1

ASP Express provides extensive automation for laborious ASP/ASP.Net chores without having to give up the necessary HTML automation needed to provide ASP documents

DEVELOPER TOOLS

- EasyASP 4.0.2
- InstallWizard XP 2005 4.7
- Visual Basic Express Edition Beta 2
- Visual C# Express Edition Beta 2
- Visual C++ Express Edition Beta 2
- Visual Web Developer 2005 Express Edition Beta 2

LINUX

- ImageMagick version 6.2.3
- Cycas version 3.20
- Griffith version 0.3
- Opera version 8.02
- SWF Widgets version 1.5
- Wine version 20050725
- Xpdf version 3.00pl3

GAMES

- War World: Tactical Combat

- Worms 4: Mayhem

DIGITAL TOOLS

Adobe Illustrator CS2 tryout

Rediscover what you love about illustration with the new Adobe Illustrator CS2. Convert bitmaps to scalable, editable artwork in seconds

Internet Explorer 7.0 Beta 1

The first stage of the beta process for Internet Explorer 7 has begun—developer testing! The latest version of the world's most popular browser has been released for technical evaluation

Adobe Encore DVD 1.5

Adobe Encore takes DVD authoring to a new level of creativity with a streamlined workflow, a comprehensive set of design tools, and smooth integration with other Adobe software

MULTIMEDIA

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- Roxio Easy Media Creator 7.5.0.47
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- Windows 2000 Service Pack 4 (SP4)
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- LogiGuard Master Mechanic 1.4
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- Automize 6.21

DIGIT IN PDF

By popular demand, archives of the past 12 months are back!

DIGITAL BUSINESS

The Logo Creator 3.6.1

This software consists of professional logo templates you can manipulate in dozens of ways with designs that will help brand your company

Solid Converter PDF to Word 2.2

Recover and reuse your PDF content with Solid Converter PDF to Word

Whitepapers on Bluetooth Security

Think your piconet is safe while you're sitting in a coffee shop? These whitepapers should give you a better idea

PRODUCTIVITY TOOLS

- Visual Studio .Net - Step by Step 7.0
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- PHP Designer 2005 3.0.6
- EasyOffice with PDF Filter 9.0
- MOBILedit Lite 1.97.7

WHITEPAPERS

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- Bluetooth Networking—Taking Handheld Computing to the Next Level
- Intel Software Insight: Multi-Core Capability by Intel
- Maximise the Business Value of Software by Borland Software Corporation
- Successfully Managing Geographically Distributed Development by IBM Software Group

DIGITAL LEISURE

NASA World Wind 1.3.1.1

World Wind lets you zoom from satellite altitude into any place on Earth. Leveraging Landsat satellite imagery and Shuttle Radar Topography Mission data, World Wind lets you experience terrain in visually rich 3D, just as if you were there

Google Earth

Want to know more about a specific location? Dive right in—Google Earth combines satellite imagery, maps and the power of Google Search to put the world's geographic information at your fingertips

Star Wars: Empire At War Official Trailer 1

Storm troopers, rancours, and even the occasional Sith lord enter the fray in *Star Wars: Empire at War*

E-BOOKS

- Sherlock Holmes: The Complete Collection
- A reader's Roadmap For The 21st Century
- Netwriting Masters
- The Mulder Dreams Series by xgirl
- Have Some Fun : Laugh Your Blues Away
- 130 Funniest News Stories
- Twilight: In the Spaces Between

VIDEOS

- Open Book
- Final Fantasy VII: Advent Children Official Trailer 2

- Project Gotham Racing 3 Official Trailer 2
- Ninja Gaiden Black Official Trailer 1

Note: If you do not want to boot from the DVD, remove it from the drive at startup

Certain systems need Macromedia Flash Player to view the contents of the DVD/CD. Get it from http://snipurl.com/90oh

Contents Interactive

CD

DIGITAL PASSION

MyDbConverter 3.0
A very powerful tool to convert your MS Access databases to MySQL or MySQL to MS Access, which features an easy-to-use Wizard-style interface

ToWeb 1.01

ToWeb is designed for persons and organisations without any Web designing skills wishing to quickly create a blog or Web site

AVIRA for Unix Server
AVIRA for Unix Server is a versatile AntiVirus solution designed to ensure flawless protection against viruses and unwanted programs in any-size corporate networks

DEVELOPER TOOLS
- VLViewPort 1.0
- VLPropertyList 1.2
- Doodle 2.1
- Visual Web Developer 2005 Express Edition Beta 2
- Gecko.NET GIS Control and Library 1.0 ProxyGen 1.1
- HTML To PHP Converter 4.2.1.9
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- MyDbConverter 3.0
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- Xmahjongg 3.6.1
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- XFree86 Base 3.3.6 glibc

DIGITAL TOOLS

Mozilla Firefox 1.0.6
Mozilla Firefox is a fast, full-featured Web browser that makes browsing more efficient than ever before

MSN Messenger 7.0
This is the latest version of the ever-popular MSN Messenger. Check out its new features

Spybot - Search & Destroy 1.4
Spybot - Search & Destroy can detect and remove a multitude of adware files and modules from your computer.

MULTIMEDIA
- Visual Communicator 1.60.1297
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- Alcohol 120% 1.9.5.3105

INTERNET
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ESSENTIALS
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- Keynesis Lockngo Professional 3.1
- JiWire SpotLock 1.6.91

DIGITAL BUSINESS

Xingtone Ringtone Maker
Make your own true-tone ringtones from your favourite audio files and send them to your phone wirelessly without cables or Bluetooth

OmniFleet Shop 8.1
OmniFleet Shop is an easy-to-use maintenance management application for in-house repair shops. Track information for equipment, employees, vendors, repairs, fuel, parts inventory, and PM

RelayFax Server 6.5.1
RelayFax is an e-mail-to-fax and fax-to-e-mail fax server. RelayFax Pro automates the process of sending, receiving, and managing your network fax traffic

PRODUCTIVITY TOOLS
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- RelayFax Server 6.5.1
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- Outlook Helper 1.1
- Yeah Write 1.7
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MOBILE APPS
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- BeetzStream SmartRss for Windows
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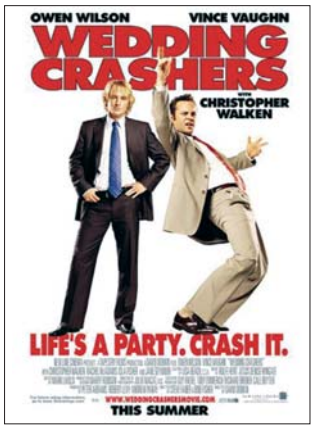

Wedding Crashers Trailer
Watch the trailer for the latest comedy staring Vince Vaughn and Owen Wilson

Mario Forever 2.16
This Super Mario 3 clone from Poland features a mustachioed plumber on a quest to save his true love

ICC Cricket Captain 2005
Exciting cricket action comes to your desktop

100 WALLPAPERS
- Wallpapers based on aircraft, nature, animals and celebs

SIMS 2 VIDEO REVIEW
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F.E.A.R. Game Demo
Google Earth

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How much will you spend on technology-related products this festive season?

- ☐ Nothing
- ☐ Up to Rs 5,000
- ☐ Rs 5,000 to Rs 15,000
- ☐ Rs 15,000 to Rs 30,000
- ☐ Rs 30,000 to Rs 50,000
- ☐ More than Rs 50,000

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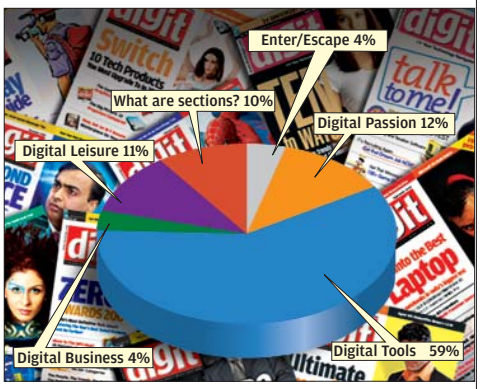

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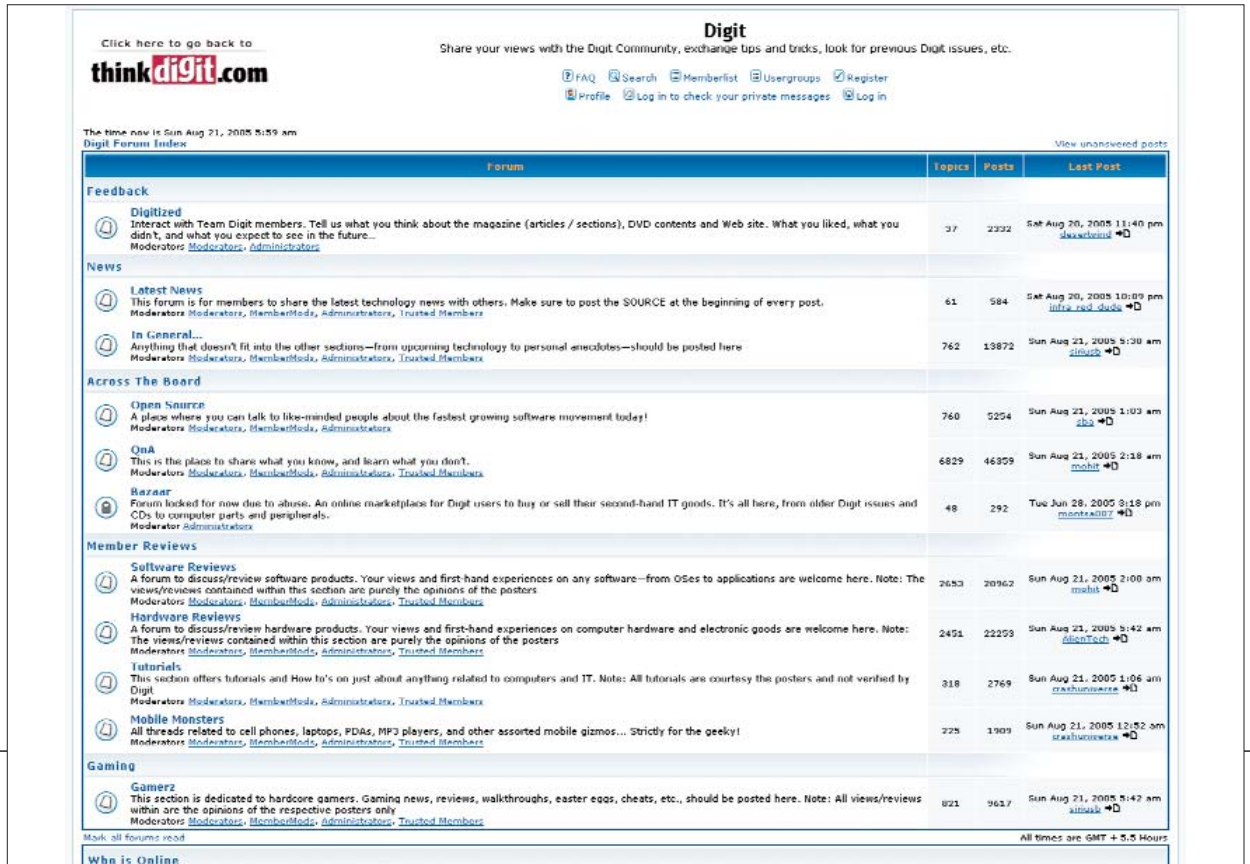


Xbox Pricing Announced

Microsoft will be selling the Xbox 360 at $299 (Rs 13,000). A more expensive version costing $399 (Rs 17,400) will include a 20 GB hard drive, wireless controller, headset and remote control. Microsoft is aiming to get the console onto shelves in time for Christmas this year.

Pre-Paid Phone Tabs

The Malaysian government will stop the anonymous use of mobiles—people using prepaid services will have to register their details with phone companies. The decision follows worries about the use of unregistered phones by members of violent militant groups, either to communicate or to trigger explosions.

Enter

Pooja Bedi
Actress and model

Pooja Bedi is India's original glam girl and is today a name that commands respect in the glam industry. As a model, actress, TV host, author, candid columnist and a doting mom, Bedi is a trendsetter. Here's her take on technology.

What does technology mean to you?
Technology helps me enhance my life in more ways than you can imagine. It's a necessity when it comes to work, entertainment, recreation and even on the household front.

How do you use technology in your day-to-day life?
I am very computer-savvy. At home, I make extensive use of the Internet. I love music and I burn and compile my own music collection. I like the facility of online photo albums as well—and I even take prints as and when needed!

What gadgets do you own?
I have a smartphone on which I can record one hour of video. My mobile helps me remain accessible at all times—I realise its importance even more when I am overseas. I also use a digital camcorder. I love shopping for gadgets.

Has technology influenced your career?
Technology has increased my productivity manifold. For instance, when I'm researching a topic or person for my TV show, I get lots of data online. I consider Google a good friend! Essentially, technology is a requisite and I advocate using it to the fullest to make life easier and more exciting.

FOES IN WAITING

Hackers And Virus Writers Eye Vista

Although there's still more than a year before Microsoft's new Vista OS hits the shelves, work is on in full swing to bring it down! Virus writers are already working on ways of hacking Vista.

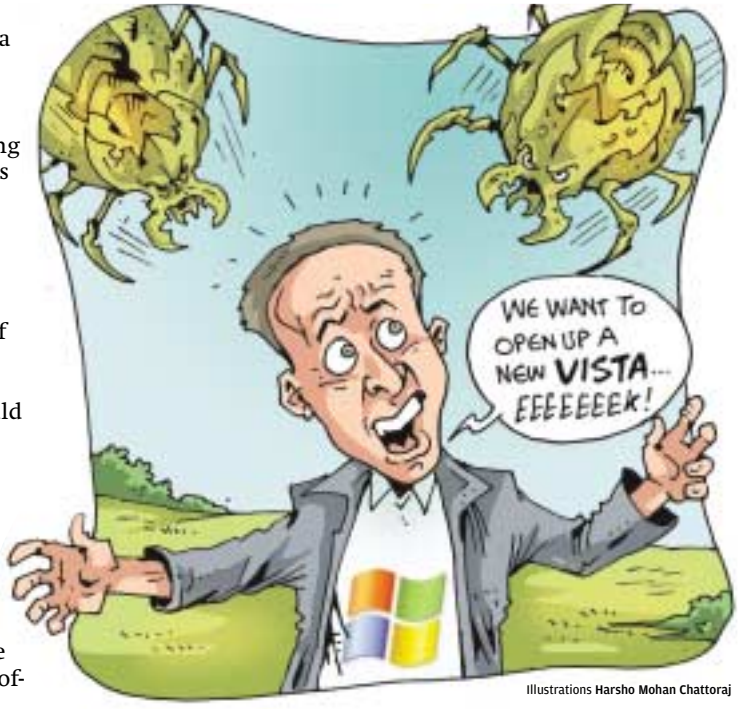
An Austrian programmer has published examples of malicious code that exploits loopholes in technology which could be part of Vista. The viruses affect Microsoft's command shell technology, which is expected to replace the current command prompt. Security company F-Secure described the malicious code as proof-of-concept viruses to highlight potential vulnerabilities in Vista.

Security experts had, in 2004, sounded warning bells about a possible attack on the command shell. But Microsoft has announced that the new technology will not ship with the final version of Vista.

Windows runs on almost 90 per cent of PCs worldwide. In view of this, the security risks that an exploit might pose are heightened.

According to Microsoft, security would not be an add-on but an integral part of the operating system.

As it stands, though, one has to wonder whether things would be any different with Vista if MS cannot plug information holes within its organisation to start with.



Illustrations **Harsho Mohan Chattoraj**

For a sneak peek at Vista, turn to 'New and Notable' in this issue

THEY'VE JOINED THE BANDWAGON

Download MP3s @ Amazon.com

They already sell books, clothes, computers and peripherals, sporting goods, electronics, shoes and what not! But online retail major Amazon.com is preparing to offer a digital-music service. According to *The Wall Street Journal* executives, the online retailer recently held talks with record-label executives. The licensing options discussed included song-by-song downloads and a monthly subscription service similar to the iTunes music download packages.

The paper also reported that Amazon has discussed tapping MusicNet, a New York distributor of digital music, to support the service. The online retailer

Security Watch

Adobe Buffer Overflow

The Problem

On August 16, Adobe reported a vulnerability in Reader and Acrobat. The vulnerability is caused due to a 'boundary error' in the core application plug-in, and can be exploited to cause a buffer overflow when a specially-crafted file is opened.

A boundary error happens due to an invalid value entered into an application. For example, if there are too many characters in a text entry, a boundary error occurs.

The Damages

If the vulnerability were successfully exploited, the application could crash, with an increased risk of arbitrary code execution by the hacker.

Precautions

Since the vulnerability is rated as "highly critical", you'll need to update your Adobe software.

For Reader versions 7.0-7.0.2, use the automatic update facility. The 7.0.3 update files can also be manually installed from www.adobe.com/support/downloads. This is the page for all the updates mentioned below.

For Reader versions prior to 7.0, Adobe strongly recommends upgrading to Reader 7.0.3.

For Acrobat versions 7.0-7.0.2, use the automatic update facility. The update files can also be manually installed from the site.

For Acrobat versions 6.0-6.0.3, use the automatic update facility, or install the update from the site. And for Acrobat versions 5.0-5.0.5, download and install the 5.0.10 update from the download site.

indicated it is interested in launching a digital-music service by the end of 2005.

The company had earlier posted a job listing on its Web site for a content acquisition manager for "our forthcoming Digital Music Service." This employee "would seek and license digital-music content worldwide, including content from major recording labels and independent recording labels and artists."

Amazon CEO Jeff Bezos had stated he wanted to increase the digital content offerings on the site. Explaining that the move would bring in larger volumes of traffic to the site, Bezos said that streaming content and video downloads were also being looked into as future options.

With this move, Amazon would join an already crowded but continuously growing segment of online music retailers, led by Apple Computer, Napster and RealNetworks.

CHAMELEON KEYBOARDS

Keyboards To Change Characters For You

Is your 104-key keyboard boring you to death? How about a set of new programmable keyboards? A couple of Russian companies are working on just that so you don't have to deal with those dreary QWERTY keys any more.

iKeyInfinity, a Moscow-based company, is expected to launch its new multi-language design for the Windows and Macintosh platforms early next year. Connected via a USB 2.0 cable, each key has a 17 x 17 pixel LCD to show the character according to the language used in the operating system.

When the language changes, the image on each key changes accordingly. The company says the image could be any alphabetic letter, mathematic symbol, punctuation or musical notation—or any graphic symbol or glyph.

In addition to English, the keyboard can switch over to Cyrillic, Ancient Greek, Georgian or Arabic, just by changing the language configuration on the computer.

Designers at Art Lebedev Studio have come up with a keyboard called the Optimus. The group hopes to have the final product ready by next year. Similar to the iKeyInfinity device, Optimus can handle non-English characters as well as special symbols, HTML codes and the like. Two versions on the Web site show keyboards specially designed for someone using Adobe Photoshop and another for someone who might be playing *Quake*.

Designers said the keyboard will be OS-independent, and will use organic light-emitting diode (OLED) technology to give it a soft glow. The software development kit will be made available as an open-source code package.

HOT

RSS-Enabled Browsers

What better than getting news and updates straight into your browser? All major browsers, such as Firefox, Opera and IE7 Beta 1, today integrate multiple RSS feed readers.

NOT

RSS Aggregators

Why waste hard disk space on an RSS Aggregator when you can get the same feeds in your browser? In addition, RSS Agregators are cluttered and are not easy to use.

STAMP HERE!

A New 'Fingerprinting' Technique

A low-cost laser scanning system could help in the fight against document and ID fraud, according to its developers at Imperial College in London.

The Laser Surface Authentication (LSA) system scans tiny surface variations of paper, plastic, metal and ceramics to detect the

One Silly Question "How long would you like to live if you were a Cyborg?"

"As long as possible, as I am a doctor and I would like to help others"
Bhavik Shah, Gujarat

"I don't really know. Maybe not very long"
Ketaki Likhite, Goa

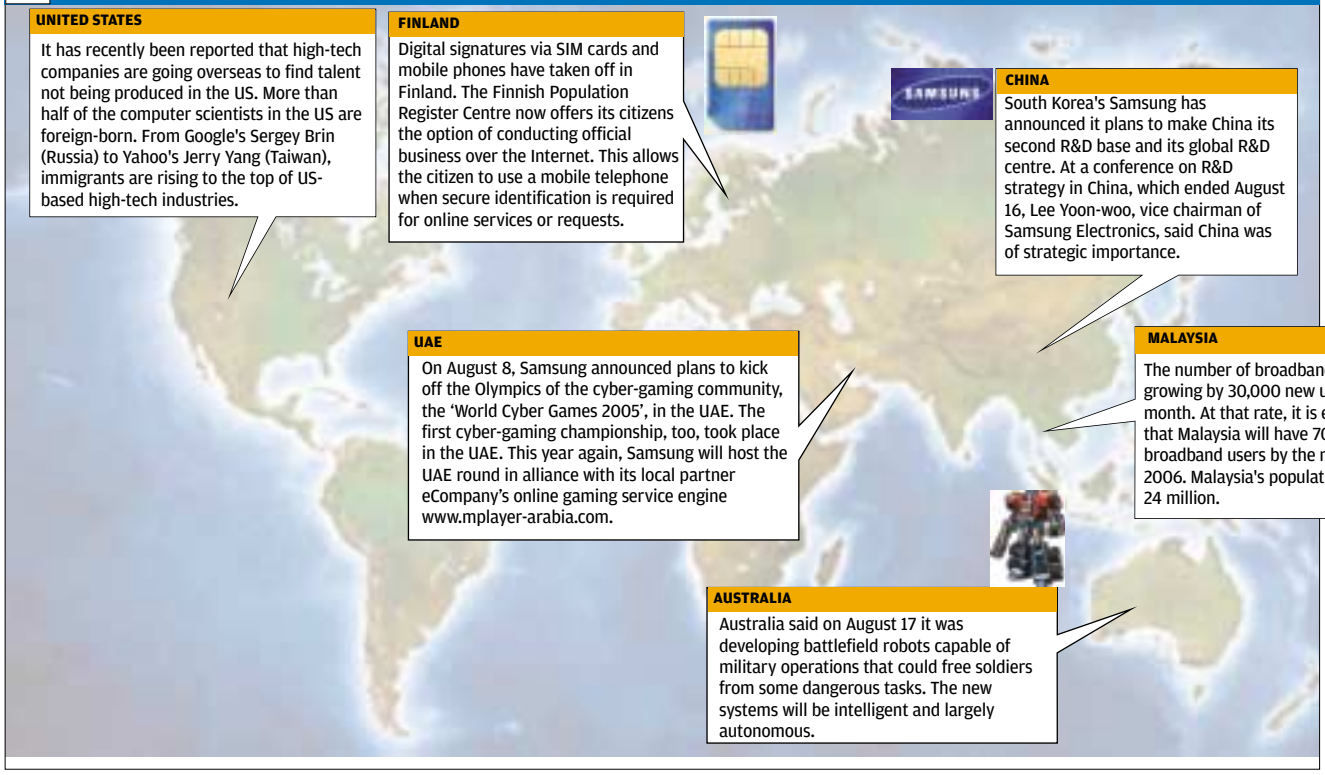
"Until all my dreams and hopes are fulfilled!"
Roshni Daver, Mumbai

"A hundred years would be enough"
Ninad Kotkar, Mumbai

"I want a short and sweet life within which I can achieve everything"
Priyanka Likhite, Mumbai

The Digital World

A Round-up Of Technology News From Across The Globe



material's 'fingerprint'. The system then records the naturally-occurring pattern of imperfections. These are impossible to replicate as they are very minute in nature.

This technology could be used on materials such as passports, ID cards, credit cards, CDs and DVDs, banknotes, and packaging.

The scientists involved in the project said this system offers a much simpler, largely foolproof, and inbuilt—thus cheaper—way to authenticate and track sensitive documents than current methods such as holographs.

The 'fingerprints' of the materials are made up of variations of ridges and grooves, which characterise materials. These imperfections are of the order of a few hundred nanometers.

Scientists at Imperial College and Durham University used an optical phenomenon known as 'laser speckle' to detect the variations in surfaces. Laser speckle occurs when a focused beam of laser light scatters over a random system, such as a paper surface. The scanner records the way the laser light is reflected off the surface of the paper or plastic.

The speckles, as with human fingerprints, are almost unique. The researchers working on the system said it could help to clamp down on fraud, drug counterfeiting, terrorism and identity theft.

EVEN CHEAPER CELL PHONES?

New Platform To Lower Handset Costs

Infineon Technologies has announced sample availability of its first reference design for ultra-low-cost handsets. Using their new ULC reference platform based on a single-chip GSM solution, costs for GSM handsets with SMS functionality could be reduced by nearly half in the near future.

Three Incredibly Useful Sites

Info, scams, and news insights

www.infoplease.com

infoplease

Here's "all the knowlede you need", as the homepage says. You need to take a look at this site to believe the sheer amount and range of information available. Quizzes, polls, crosswords, culture, almanacs, atlases, history, an encyclopaedia, a dictionary, a thesaurus...

www.scambusters.org

ScamBusters.org

"ScamBusters Helps You Protect Yourself From Clever Scams—Online and Offline," and there are a variety of resources and links on this page to that end. Even if you don't think you are or will be a victim of fraud, the site is fun to navigate—it has links such as 'Urban Legends', 'Scam Check', 'Viruses', 'Credit Card Fraud', and so on.

www.storydata.com

STORYDATA.COM

The homepage says the site helps you get "more insight out of the stories that affect our world." When we last checked, featured stories included 'fiscal implications of ageing,' 'patterns of global terrorism,' 'the costs of a bioterrorist attack,' and many more. The stories here seem genuinely insightful, and all the sources of information seem authentic.

Photograph **Jiten Gandhi**

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

Beat That!

Digit Caption
"Not quite computer heaven..."

Last Month's Winner!
Ratan Sharma ,
17, Mansarovar,
Meerut 205 006
"*Aage baitha* driver, *phir bhi* passenger *dhoondhe* driver(s)"

E-mail your caption with the subject "Beat That", and your postal address, to beatthat@thinkdigit.com and win Solaris 7 Administrator Certification by Bill Calkins Published by Techmedia, New Delhi

Present costs for handsets include all electronic components, the printed circuit board, connectors, casing with keypad and display, all software components, rechargeable batteries, charger, packaging and documentation.

Infineon's platform provides all the electronic hardware and software components needed in dual-band handsets complying with the GSM900/1800 and GSM850/1900 standards. It includes a single-chip GSM radio/baseband, other RF components, power supply, memory, operating system, hardware drivers, GSM protocol stack and a reference MMI (Man Machine Interface) for simple and intuitive use of SMS and telephone functionalities. Volume production is expected to start in the first quarter of 2006, which means that ultra-low-cost handsets could be in the shops a few months later.

Power consumption has also been optimised so that cheap rechargeable batteries such as nickel metal hydride (NiMH) AAA micro-cells can be used to power the phone. With standard rechargeable mobile phone batteries, an estimated standby time of more than ten days and a talk time of four hours is what the company is projecting, once the platform comes into use.

IMAGINE IN INDIA

MS Brings Global Contest To India

Microsoft has announced that India will be the venue for Imagine Cup 2006, an annual worldwide contest held by Microsoft to help students across the world showcase their software development skills.

The contest aims at empowering students to apply their creativity, knowledge and technical abilities towards making the world not only a more connected place but also a better place through technology.

In keeping with this, the theme for next year's contest is "Imagine a world where technology enables us to live healthier lives." India has emerged as the world's IT nation with diverse technology talent, making it an ideal destination for a global showcase of innovative solutions.

This announcement was made at the Imagine Cup 2005 world finals, which recently concluded in Japan. Over 16,000 students from 92 countries participated in the contest this year. Nearly 6,000 of these participants were students from India, making it the country with the second-highest entries worldwide.

The contest includes nine 'open' categories such as Software Design, Technology Business Plan and Rendering, and three special categories created only for school students.

The theme for Imagine Cup 2005 was "Breaking down Boundaries", and students were encouraged to conceptualise technology solutions to help address emerging social issues.

GENDER BENDERS

Vikram Rajagopal vs Jisha Punyani

Googlewhacking

5 links

Googlewhacking was the last thing Vikram had expected. Pensively, he chose his first search phrase—'icosahedron history' (of course, he had the dictionary to help him). That got him 25,900 links. The other terms he used were 'raitt factfile', 'nanovalent' and 'hexanumeric'. His performance improved with each attempt, and his last attempt of 'hexanumeric' gave him a commendable five links. Keep trying, Vikram, and you'll get there!

1 link

On hearing about the task, Jisha seemed clueless at first. After understanding the concept of Googlewhacking, she seemed reluctant to start. Four attempts were given to the duo and their task was to return only one search result. Jisha tried combinations such as 'aberdeen angus', 'jujube', 'mutex vlogging', and 'mutex hydration'. She got a high number of links every time—8,52,000 hits for 'Aberdeen Angus'! Her final attempt comprised the words 'mutex vlogging', and Google displayed just one link. Good going, Jisha!

YAHOO! IS AUDIBLE

Now Find That Podcast On Yahoo!

Web media giant Yahoo! has launched a free Web audio search service that helps users find, hear and buy everything from music downloads, interviews, Podcasts and other Web audio content.

Although Yahoo! Audio Search, at http://audio.search.yahoo.com, is still in testing, it gives users access to more than 50 million audio files as the Web site increases the amount of media content it offers.

Apart from the well-known record labels and music artists, the service also taps independent publishers and the Web, helping users find such things as music videos, reviews and photographs of artists.

Yahoo! and rivals such as Google and Blinkx have already launched video search services as the Internet's role in entertainment grows, and ad revenues pour in.

The company has integrated Yahoo! Audio Search with its video search service, and has invited people to submit videos and music through Media Really Simple Syndication, so it can be found by the new audio search engine. It also integrated tools from its comparison shopping search engine, which helps users find CD prices and make purchases from a variety of retailers.

In doing this, Yahoo! has forayed into all forms of Internet search and cataloguing—the fastest growing source of income for most online companies.

YES, DOWNLOAD IT!

Britons Take Initiative In Legal Movie Downloads

A UK firm has started a video download service in the hope of creating a viable commercial alternative to renting or buying DVDs. The service, called BoxOffice365.com, allows customers to download videos of VHS quality.

As of now, only a few live comedy and music video services are available, but the British Internet Broadcasting Company (BiBC), the entity behind the service, promises a significant content catalogue will be uploaded by the end of September.

Some of the content, such as The Sex Pistols' TV debut of *Anarchy* in the UK will be made available for purchase for the first time. The firm has signed publishing agreements with a number of publishers including V2, ITN and Laughing Stock.

However, only one film studio—Universal—has so far signed an agreement. BiBC's founder Paul Hague admitted Hollywood has been reticent about offering legal downloads

Buzzword of the MONTH

Googlewhacking

No, Googlewhacking is not beating the hell out of someone who says Google has the most number of indexed pages! It is the art and science of searching with two dictionary-recognised words such that the query yields just one result. For example, "orchestrator bamboozling", "metronome dewpoint", and so on. So it's a bit like hitting a bulls-eye with Google search.

The term is a brainchild of Gary Stock—he was so obsessed with finding such results that he created this game with rules called Googlewhacking.

Stock lays out the rules for keeping score: one point for a pure Googlewhack, meaning a single result for your query; one point if you learn something; and a bonus point if you "laugh even more" at the results.

Podcasting

What is podcasting?
Podcasting is a way of delivering audio over the Internet. It's something like Internet radio, with the difference being that you can subscribe to a podcast, have it downloaded, and listen to it at any time you wish.

Where can I listen to a podcast?
Although the word 'podcasting' is derived from 'iPod' and 'broadcasting', you don't need an iPod to listen to a podcast. All you need is the requisite software, and you can listen to a podcast on any computer that has the software.

Why is podcasting an interesting development?
Podcasting is sort of like Internet radio with the added benefit that you can listen to the show any time you want. It allows individuals to distribute shows over the Internet. While it's not possible for any individual to walk into a radio station and demand a certain broadcast, any individual with the right equipment can do a podcast.

How does podcasting work?
You can subscribe to a podcast using a software called a podcatcher. The system uses the format called RSS 2.0 (or RDF XML) with enclosures (the podcast is the enclosed data). This is somewhat similar to the RSS feeds on the Internet many of us subscribe to.

When did podcasting first become popular?
It's possible that the first use of the term 'podcasting' was in an article by Ben Hammersley in The Guardian on February 12, 2004. By October 2004, detailed how-to-podcast articles had begun to appear online.

Who can podcast?
Anyone! With the right software and minimal hardware requirements, that is. Just Google "How do I create a podcast" and find the answers!

of films, even though content is wrapped in copy- protection technology to prevent unauthorised sharing.

Downloads are available on a 'pay-as-you-go' basis with prices of between £1.50 (Rs 118) for a music video, and £6.99 (Rs 550) and upwards for a full DVD. That's more expensive than renting a DVD, but the BiBC hopes the convenience of not having to go to a shop will appeal to potential customers.

By the looks of it, BoxOffice365. com wants to do for video downloads what iTunes did for legal music downloads. It's one of a small group of companies trying to change the way people enjoy films and video downloads.

SHOWTIME!

Hackers Demonstrate Their Skills In Vegas

Even the ATM machines were suspect at this year's Defcon conference, where hackers played intrusion games at the bleeding edge of computer security. With some of the world's best digital break-in artists pecking away at their laptops, sending e-mails or answering cell phones could also be risky.

Defcon is a no-man's land where customary adversaries—Government Security and technology experts—spar with digital mavericks. The result is sharing ideas about making the Internet a safer place. In reality, however, it's just hackers flexing their wits and muscles.

This year's hot topics included a demonstration of just how easy it may be to attack supposedly foolproof biometric safeguards, which determine a person's identity by scanning such things as thumbprints, irises and voice patterns. Banks, supermarkets and even some airports have begun to rely on such systems, but a security analyst who goes by the name Zamboni challenged hackers to bypass biometrics by attacking their backend systems networks.

Also on hand at the conference was Robert Morris, former chief scientist for the National Security Agency, to lecture on the vulnerabilities of banking ATMs, which he predicted would become the next "pot of gold" for hackers.

Hackers and the computer security experts who make a living on tripping up systems say security would be better if people were less lazy. To make their point, they pilfered Internet passwords from convention attendees. Anyone naive enough to access the Internet through the hotel's unsecured wireless system could see their name and part of their passwords scrolling across a huge public screen. It was dubbed the 'The Wall of Sheep'.

Amongst the exposed sheep were an engineer from Cisco Systems, multiple employees from Apple Computer, and a Harvard professor. Baa!

CORPORATE PODCASTS?

Big Blue To Podcast

IBM is all set to embrace Podcasting, the digital audio craze that allows consumers to take audio programming off the Web and listen to it on portable music players. The company plans to introduce a series of occasional Podcasts on its investor relations site as part of a broader effort to communicate directly to its investors and the wider public about hot topics.

The Podcasts would be insights on emerging issues. The company has emphasised that the Podcasts would not be IBM commercials. The company also sees these Podcasts replacing the traditional whitepapers. ⊠

Compiled by Aditya Kuber, Mithun Kidambi, Ram Mohan Rao and Renuka Rane

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Lead Feature

MOVIE MADNESS

Even multi-million dollar movies make silly mistakes when depicting technology. Here are a few...

Robert Sovereign-Smith

Those of us who watched *War Of The Worlds* were captivated by its special effects. Almost everyone muttered some sort of expletive at the end, angered by the quick and hurried ending. "Bacteria killed them all" was a wholly unexpected finale—perhaps one of the most anti-climactic endings of all time—except for the few who had read the book first!

Movies have this magical power over people. Music is what perhaps comes closest in this regard, but even the power of music pales in comparison to the emotions that movies are able to elicit from even the most stoic. Women and macho-men alike cried like babies when they saw that little red cape covering one of the corpses in *Schindler's List*; we all laughed whole-heartedly at Jim Carrey's antics in *Liar, Liar*, and every Indian learnt more about the Mahatma by watching *Gandhi* than we ever did in school!

Imaging Vikram Kathare

India has the most prolific movie industry in the world, with more movies being made here per year than in Hollywood! Only here can a simple family movie such as *Dilwale Dulhaniya Le Jayenge* run in packed cinemas for years at a stretch, primarily because it was a movie every Indian could relate to. Of course we also have the epic *Sholay*—a film that's even popular among those who snub Bollywood productions.

However, since reams have been written in praise of the all-time greats of the big screen, we'll stop here. Here, we applaud the tremendous effort and love that movie makers knead into their creations, but also highlight the technological changes that have occurred over the years—which not every movie maker has been able to meet.

'Angela' uses QuickTime player on her laptop...

Evolved Audiences

Though there's no lack of creativity in movies, as is apparent from their continued success in the entertainment industry, there is a need for realism. When we say 'realism', we do not imply that every movie needs to be made like a reality show; we mean that movies should not depend on the audience's ignorance of a subject to make sense.

People have changed, and the inclusion of Internet access in our everyday lives means that we're free to learn about any subject we desire. There was a time when one could safely make a space movie with unrealistic physics and technology, and no one would notice. The people who would know right from wrong were a minority, and in all probability, locked in a super-secret basement somewhere in Area 51, doing top-secret research. Today, anyone with the desire to learn can log on to www.nasa.gov and read up on absolutely anything to do with space exploration.

This easy access to information has transformed today's movie audience into experts in their own rights. Unfortunately, some elements of movies, or for that matter, some movies in their entirety, require audiences that do not think for themselves.

Goof-ups

A whole range of Web sites have sprung up over the last few years that talk about flaws in movies. Even The Internet Movie Database (IMDb.com) has a whole section dedicated to movie goof-ups. The most popular goof-up is one done by poor editing and scripting. These goofs, also called continuity goofs, happen when a particular scene is shot again and again-things around a set are bound to change. Like when shooting a scene, if there's a coffee cup on the table, after the twelfth take, the coffee cup may have been moved, or even taken out of the shot. When editing, this may be overlooked, but of course, audience members will notice it, and a few days later, you have a dozen new posts in IMDb's 'goof' section.

Another, more serious, type of goof-up is the type where you can see people or equipment used in the production of a movie. The simplest example is the boom microphone peeping in from the top of a shot, or a not-so-well-concealed person triggering smoke, or some other background effect.

However, without a doubt, the most serious flaws in movies are caused by bad research of a topic. Considering that trillions of dollars are spent on making movies every year, most of it on special effects and actor's fees, it's not too big an ask to expect directors and script writers to do their homework. Perhaps you could even go as far as to say, "If I can spot bad research in your multi-million dollar blockbuster, then, well, you suck!"

As *Digit* readers, it's especially bad when you see mistakes relating to technology in blockbuster movies. In fact, the idea for this story came about when a few of us watched the movie *Constantine*. Here's what happens:

Constantine

Angela is mourning her sister's death, and is watching the security camera video of her sister jumping off the top of the building. All well and good so far. Then we start to see the errors creep in. First of all, security cameras do not follow subjects around like a diligent camera-man. Secondly, since when do security videos have close-ups? There's a shot of Angela's sister whispering the name *Constantine*, and of course we get to see it perfectly—those security cameras must be top-of-the-line Hollywood movie cameras!

...unfortunately, she doesn't know her buttons!

However, this is not what made those of us watching the movie burst into peals of laughter. No, it took a special goof to do that! Angela is watching the security camera footage on her laptop. She's using Apple's QuickTime Media Player, the 'Q' icon is clearly visible, and when she notices her sister say something, she rewinds the clip. However, unlike any of us normal, everyday technology users, she doesn't use the progress bar; instead, she presses the 'Previous track' button.

There is a 'Rewind' button, but she clicks on the 'Previous' button. As any of us who have used a software media player will tell you, this button will take you back to the beginning of a clip, or even to a previous clip, but in this case, Angela magically rewinds the clip to exactly the right spot—talk about divine intervention!

OK, so some of you may argue that such a mistake isn't even noticeable and that we're nitpicking. True, perhaps most people will not even notice this error, and it is sort of minor, especially in a movie that deals with a much more serious subject—judgement day, evil, and God versus the devil! So what about movies that cover computers as a subject, and are targeted at us geeks?

The Net

Constantine merely started us off on this goofhunt. The very next movie we decided to watch was *The Net*, starring Sandra Bullock. In no time flat, we were again rolling on the floor laughing. Sure, the movie is really old; sure, technology was just entering our lives back then, but the movie *is* about technology being evil and how our identities can be stolen using the Net!

This movie was a cult movie for us geeks, and was what sparked the interest in computers for quite a few of us. So imagine when we see the IP *23.75.345.200* being used in the movie! As most of us know, IP addresses are 8-bit numbers, and thus can only have values between zero and 255. The fact that the IP contains 345 means that someone didn't do their research properly.

Other stupid technology mistakes in *The Net* include viruses that blur your screen, obviously attacking your graphics card drivers and giving them the ability to display cool-looking distortions on the display. Yes, we *are* being sarcastic!

Overall, the way computer technology was depicted in *The Net* was unbelievable. Sure, the idea was that someone's electronic identity can be erased, but come on! Did she never sign anything in her life? She never went to college? Had pictures taken for the annual yearbook? What about college friends? Don't banks expect you to sign cheques?

The Net expected us to believe in a paperless world, yet even today, the world isn't that way. Still, it was a good movie that made us all a little scared of the Internet even in 1995.

Ficticious IPs were never 'that' unbelievable

The Core

In *The Core*, which was recently doing the rounds on a popular movie channel, there's a character called *Rat* who is supposed to be the world's best hacker. This character is skinny, sickly-looking and the stereotypical nerd. However, the task assigned to him is a little far-fetched: hack the Internet!

Apparently, viruses can infect your monitor as well!

He is given the job of hacking the entire Internet, and prevent news of the mission to the centre of the earth from leaking. Sure, hackers have much power in the world of the Internet, but preventing the flow of information? Ridiculous at best!

He also hacks into any and everything in under two minutes flat!

However, computer technology had a very small role in this movie—most of it was dominated by unbelievable physics. For example, there is talk about the frequency of sound waves changing when passing through different mediums. Any physics student should be able to tell you that this is impossible—the amplitude and velocity can change, not the frequency.

Then there's *Unobtanium*! It's a magical metal that gets stronger with increased temperatures and pressures. Perhaps they should have called the metal "Unbelievable-anium"...

Overall, this movie was really bad for any science student to watch, not just computer geeks!

Hackers

Here's a movie that should send all *Digit* readers into fits of laughter!

Bollywood

Thus far, Bollywood has been known more for the antics of characters portrayed by actors such as Mithun Chakraborty and Rajnikant! We're used to seeing people leap **up** to the fourth floor of a building—**backwards**! People think nothing of a hero who can split a bullet on a blade and kill two baddies with one shot! It's cinema, it's supposed to be unbelievable!

However, more people are attempting to make serious, well-researched movies. Although we applaud their effort, we should also point out flaws in their research. Bollywood's version of a mish-mash of Hollywood's **Close Encounters of a Third Kind**, and **ET: The Extraterrestrial**, called **Koi... Mil Gaya**, stars Hrithik Roshan as a mentally challenged man. His father, a scientist devoted to finding extraterrestrial life-forms, invented various techniques of contacting alien life forms. One works! It's a computer that transmits sound to outer space—the sounds are very similar to what you'll hear when you watch **Close Encounters Of The Third Kind**, except that they're the holy word 'Om' in different notes!

What's hilarious is the 'computer' that Hrithik's father uses: it looks like an old oscilloscope was picked out from hospital trash and a small TV fitted into it. Then, someone used some Windows Media Player visualisations to try and make it look like the 'computer' was actually transmitting and receiving sound!

Though the computer only plays a small part in the story, it would have been nice for someone to actually dig up an old 486 and try and make the computer a little more believable!

Above: These keys produce sounds; but what you don't see is the piano. Now why didn't they use that?

Below: The monitor used on the 'old' PC looks more like a oscilloscope than a monitor

Another recent Bollywood movie is **16 December**—it's about secret agents and spies for the Indian government looking to track down terrorists. Keeping with the tradition of portraying hackers as young geniuses, this movie has a hacker who looks no older than 10.

He's a Mac user as well!

There's a scene in the movie where he's

The year 1995 did not belong to Sandra Bullock in *The Net*, not as far as we are concerned. Angelina Jolie, in *Hackers,* took the baker home with her!

The plot is about hackers in 1995 who stumble upon a huge plot to swindle money from a corporation, and somewhere along the line, the plot involves the American Secret Service. Billions of dollars at stake? Nope, not quite; all this racket is created over the attempted theft of a mere 25 million dollars. If anything, here's one aspect of the movie that goes against Hollywood norms of exaggeration!

Coming back to goofs and unbelievable technology... we're not quite sure where to begin with this one!

The plot involves a hacker called 'Ice Cool' who creates a virus in 1988 at the tender age of 11, a virus that crashes 1,507 computers - surely a huge deal in 1988! It's 1995 now, and he's finally allowed to touch computers again - and of course, his first act in the movie is to hack a television station. Here he meets (in the virtual world) another hacker called 'Acid Burn', who promptly manages to terminate his connection... so far so good.

However, this is where technology takes a backseat and Hollywood effects kick in.

Throughout the movie, you see unbelievable displays on computer screens, a lot of useless jargon such as RISC, PCI-BUS, and so on being thrown at you out of context, but by far, the juiciest of all blunders is when Acid Burn (Jolie) shows off her new laptop, which is a Mac, to Ice Cool, and boasts of it having a P6 chip! Were the writers of this movie soothsayers? Apple just recently announced its plans to use Intel's chips for the first time!

As for the rest of the movie, we'll let the screenshots do the talking!

Independence Day

Yes, there was computer technology used in the plot of *Independence Day*; though most of us were busy oohing and aahing at the effects, some computer nerds were asking, "So how exactly does Jeff Goldblum interface with Alien technology?"

It takes the best hackers and virus writers on the planet a good deal of time to come up with a virus for, say, Windows XP. In order to find a flaw in an operating system, you need to be an expert in that system! And that's for just finding a flaw - writing a virus that's undetectable *and* exploits that flaw is another ballgame altogether!

Above: Wow! The Ambanis really use stupid passwords for their Net Banking accounts

Below: An 11 year old disarms a nuclear bomb with 1 second to spare!

logged on to a bank's Web site, and is looking for the password to one of the Ambanis' accounts. His 'program' is a little genie that appears on the Web page and scrapes off data from the site while looking for a password. In the end, the password he finds is 'gudiya'. If Milind Soman hadn't stopped him, he would have stolen crores from the Ambanis, using the username 'Ambani and the password 'gudiya'.

So basically the movie expects you to believe that one of the Ambanis has Rs 70 crore in his personal savings account, which is accessible via the Internet, and is protected with only the password 'gudiya'. Yawn!

So we sat through the rest of this movie, looking for more mistakes. We got tired of counting. Someone tell Bollywood makers that we still do not have 3D-holographic displays! And even if there are any, no 10-year-old would be allowed to touch them!

At the end, there's a scene where the same child prodigy is copy-pasting wave graphs so he can match the villain's voice and disable the nuclear bomb that's about to blow Delhi to smithereens. The computer screen clearly shows a mouse action of dragging and dropping, yet all this kid is doing is rattling away at his keyboard. The funniest part is when he finally gets the specific word phrase he is looking for he does nothing, until our hero Milind Soman helpfully reminds him to press [Enter]!

If Hollywood has a long way to go before making truly immersive movies, let's not even imagine how much help Bollywood is going to need. With all the computer whizzes we have walking about our streets, it's shameful to see directors not consulting with them to understand the limits to which they can stretch our imaginations—at least in terms of technology. The least they could do is pick up a copy of **Digit** every now and then!

How Jeff Goldblum manages to interface with an alien system and create a virus to crash it is beyond us

Jeff Goldblum's character manages to do this in a matter of hours!

Let's not even begin to talk about an alien race that traverses the universe to go to war with us, runs everything on computers, and does not believe in anti-virus software to protect against viruses created by those much lower down in the technology chain!

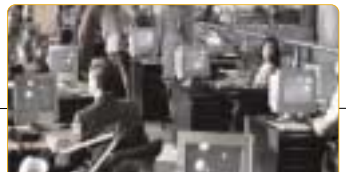
We're Not Stupid

There are perhaps thousands of movies out there that have loads of technology goof-ups, but it's good to see the effort that movie makers are putting in to improve the believability of their stories. As technology invades more and more people's lives, perhaps soon we'll see movies that don't divert our minds from plots by making silly mistakes. After all, in all the movies mentioned here (with the exception of *Hackers* and *The Net*, perhaps) technology was just a prop, but ended up taking centre stage because of glaring errors.

It's time that the Holly- and Bollywoods of the world start accepting that we, their audience, are not stupid any more, and will not just sit down and believe or accept anything they throw at us.

Some people might argue that movies are meant to be journeys of fantasy, and need not conform to real-world boundaries. However, to be truly immersive, movies need to be based firmly on reality. This is the reason why horror movies may not scare us, but walking down a dark, desolate street in the middle of the night makes us edgy!

We'd love to hear your take on this subject, and also hear about more technology goofs you might have seen! Write in to us. ■



robert_smith@thinkdigit.com

I, Robot— Your Friend

Robots are still considered largely outlandish, but advancements over the years may soon change that... and with it, probably the way we live

Aditya Kuber

Ever since science fiction took over the minds of inventors and the world at large, we have been yearning to create that perfect robot who would be our best friend, maid, pet, driver, vacuum cleaner... a veritable all-in-one that would rid us of having to do our daily chores, and not ask for leave either!

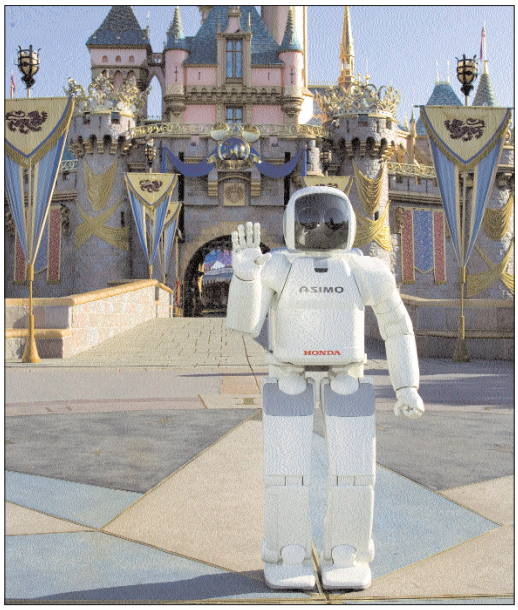
How close are we to this becoming a reality? Going by recent inventions and developments, not too far... robots are already beginning to walk, talk and yes, in some cases, even think like people.

Back in 1996, along with partner Yoshihiro Kuroki, Tatsuzo Ishida, Sony Corp's ace robotics engineer suggested the creation of a new species of humanoid entertainment bots along the lines of C-3PO, the golden chatterbox in *Star Wars*. Creating robotic workers for factories is one thing, but the technical challenge of creating something like a humanoid is tremendous.

And what about the potential hazards that such a creature could pose? Until these creatures are smart enough to 'understand' what it's like to walk, they could just trip over and fall, injuring someone in their path and bring lawsuits against Sony in their wake!

Sony, though, decided to go in for the idea anyway. Thus was born the SDR or Sony Dream Robot. At a time when the world was gaping over Aibo, Sony's cute robotic puppy, Ishida and Kuroki were displaying half-a-dozen prototype humanoids at Yokohama at Robodex, an expo for personal robots.

Illustration **Pradeep Ingale**



Honda's Asimo can also be your tour guide

That was 2001. Since then, there hasn't been much progress—and developers in labs around the world are still struggling to build bots that are spitting images of humans in movement and possibly behaviour. But when will they be ready? Will we, in our lifetime, ever be able to summon someone like Rosie—the robot maid from *The Jetsons*?

Rough estimates based on developments indicate that 2010 could well be the year when robots walk the street. Considering that's just five years away, it does seem rather impossible. They were also saying back in the '60s that everyone would fly by 2000 and that cars would be obsolete!

But what is it that we are looking to create here? Is a lump of wires and metal that vaguely resembles the human form the final objective? Not quite. Researchers around the world have since long achieved the human form—bipedal (two-footed) movement included—and work is now focused more on making these bots behave more like humans and understand what we are saying. Artificial Intelligence (or in fact, the lack of it) has been the stumbling block.

Coming Of Age

There are several things that differentiate humans from relatively simple creatures such as lizards, cockroaches and so on. Consider our sense of sight and our emotions.

Cockroach-like robots are relatively easy to build. But it's a tremendous challenge to create a bot that even vaguely resembles a human in the departments that matter. For instance, how do we imbue a robot with the emotion of fear? And how do we enable it to distinguish between a living and a non-living thing—something even a child can do when it is a year old?

Humans have normally overcome most of the challenges they have faced—and successfully built skyscrapers and supercomputers, and have even put men on the moon. But getting a robot to smell something, feel and identify, touch, see and imbue motor skills similar to humans is a task that is comparable only to the creation of a whole new world.

But why are emotions for a robot so important? Simply because for robots to be meaningful companions, they must be 'socially savvy'. At the MIT's Media Labs, work is being done on 'Kismet' (see box below), who is learning to recognise human emotions—and also has a face to express its own moods.

The image of a genie that has long been imbibed into the human psyche makes us want something—or someone—who can do more than us in terms of memory and mental and physical skills. Is a robot companion the answer?

The industrial world wants robots for work in hazardous surroundings; the military, to fight on the battlefield. But one place most humans would want them is in their homes. Why? For doing mundane, daily tasks like cleaning the house, washing clothes and cleaning the dishes. Driving you to work and shopping for groceries would figure next on the list, and an added bonus would be if they could tutor the kids after school. That's the ideal home AIO (all-in-one).

That's your genie right there, but given the state of AI and the current expertise in this field, getting your dream bot home may take some time. As of right now, they are prone to mistakes and a lot of them. But wouldn't that make them that much more human? Yes, but that's not what we're looking for, is it?

None of today's robots can do any of the household chores we would want them to. They

Growing Up Botty

MIT Labs had two humanoid robots to its credit. Unfortunately, both have retired and are now part of the MIT's Museum. During their 10-year lifecycle, these robots successfully mimicked emotions, and showed that it was possible to really 'grow up a bot'.

Kismet

Kismet was an expressive robot that could communicate with humans socially. It was capable of showing emotions such as sadness, happiness, excitement, and so on. A lot of computers worked together so Kismet could function socially at the level of a young person!

Kismet really could understand the human it was interacting with, and it processed the inputs it received (visual and auditory) from the human and adjusted its behaviour accordingly. It was designed such that it could learn the way an infant learns, and to this end, it needed a caretaker!

The caretaker had to provide a proper 'learning environment' for Kismet, and also understand how Kismet was 'feeling' at any given moment, so as to behave accordingly with the bot. Just like a child: if it was under-stimulated, Kismet acted bored—and was difficult to interact with. If over-stimulated, it showed fear, and if the excess stimulation continued, it shut itself down at some point.

Cog

Cog was an experiment in robotic cognition. The goal of the Cog project was to get it to the 'IQ' of a three-year-old. This humanoid torso had been learning to interact with its surroundings—including people—since its inception in 1993. Cog's intelligence levels progressed to the crawling-infant stage. Its 'eyes'—cameras, of course—tracked people moving, and it could establish eye contact with people. This may not seem like much, but consider the fact that most general robots can't distinguish a person from an object such as a wall.

can't even pick up a broom! But the next generation that is being created—in the shapes of animals—could well be more capable. There is a good chance that an Aibo could be sitting at your door, at guard in the night after a hard day's work inside the house.

Great Expectations

As humans, we always have great expectations from our friends, families and ourselves. But will our robot friend understand it? To be honest, it's best if they didn't. So long as they just did what is asked of them, we'll be happy!

And no, this is not fantasy. Already, some toy-like robots are reminding the elderly to take medicine and keep appointments. And future plans call for bundling more advanced mechanisms into roving maids and butlers.

Ah... a butler that will be at hand for your whims and fancies. While most inventors maintain that robots are 'almost intelligent', the question is, will there be a time when they could be more intelligent than us? And this question wakes the doomsday soothsayers from their slumber. But they can rest easy for a while as inventors and creators of the modern day maids and butlers are still worrying about issues like movement and response times.

Hollywood has already done its bit to scare us out of our wits by depicting robots as evil beings whose only purpose of existence is to take over the earth. One question: why? What on earth might push them to take over? Is it the fact that they no longer want to be ruled and want to be masters of their own destiny? But that would mean they are able to think and understand emotions and have aspirations. Unfortunately, that's happening only in Hollywood.

When Can You Buy One?

Your dreams of having a butler and/or a maid scooting around the house may not be fulfilled this decade, but some of the early developed bots are functioning as guards, delivering hospital food trays and carrying documents from one office to another.

Evolutionary robotics aims to raise a machine like a child—letting it learn from its own experiences and sensory impressions, rather than feeding it canned software written by humans

The Japan Robot Association (JRA) had estimated that by 2002, nearly 11,000 service robots would have been deployed, 65 per cent of them in hospitals and nursing homes. JRA projected that by 2005, healthcare robots would be a $250 million market, which would then hit $1 billion by 2010—approaching 10 per cent of the total market that year. As for personal bots, a panel of industry and academic experts predicted they will be as common as PCs and cell phones within 10 to 15 years. You could finally draw a bath that's exactly 29.4º C every day!

Growing Up A Bot

Aibo, Asimo, Robosapien and any of the other similar bots have one thing missing when compared to Rosie. They do not have a character of their own.

Bots like Aibo can learn tricks and respond to voice commands, and are touted to be the next big thing, but what good are a few tricks when you want the whole circus?

While researchers everywhere are fascinated by the potential of home robots and cyber-companions, there are labs that are counting on biological approaches to help produce mechanical beings—known as evolutionary robotics.

The basic idea of evolutionary robotics is to be able to raise a machine like a child, letting it learn from its own experiences and sensory impressions, rather than feeding it canned software written by humans. Leading places for such research include the University of Sussex in Britain, Switzerland's University of Lausanne, and the MIT and Michigan State University in the US.

MIT's Cog and Kismet are probably the most famous of the self-educated bots. But no matter how personable the Cog may seem, a robot with human-level intelligence still remains a faraway dream.

The Evolution Chart

Researchers in corporate and academic labs are racing to develop working models that, within a few years, may become our cohabitants and co-workers. The leaders include companies such as Matsushita Electric Industrial, NEC, Sony and Omron and are literally investing millions in the development of personal robots. Here are some bots that have so far seen light of they day:

Asimo (Honda Motors): One of the first 'robo sapiens' to be developed was Honda's Asimo, a 1.2-metre-tall android that resembled a child astronaut. It could stride like a human, climb stairs, and negotiate corners. It could even turn the lights on and off, and to show off, it could walk a figure eight!

Asimo, however, was blind, deaf and dumb—to be able to perform its antics, it had to be remotely controlled. It may seem that a remote-controlled robot is no big deal, but like we've mentioned, the very fact that it could stride and climb stairs is a massive feat of engineering and computer science.

Aibo (Sony Electronics): Aibo is controlled by its Mind 2 Software located on a removable Memory Stick. This Memory Stick dictates Aibo's behaviour. This is even possible using a PC or a mobile device.

In daily life, Aibo can communicate with and entertain its owner. As time passes, Aibo also starts to identify its owner's voice and face and it can even recharge itself!

Roomba (iRobot): Developed by iRobot, Roomba is an intelligent robotic vacuum cleaner. All Roomba 'Robotic Floorvacs' feature iRobot's AWARE Robotic Intelligence System, which uses lots of sensors to monitor Roomba's environment, and adjusts the bot's behaviour up to 67 times per second, ensuring that Roomba cleans effectively, intelligently and safely.

Roomba is also the first cleaning robot to have hit the market commercially, and has already tasted success.

For true versatility, robots need to be mobile. Robot companions must be able walk on two legs. And this is still an engineering challenge. Bipedal movement is essentially a continuous, controlled fall that's avoided only by precisely timing each step.

Humans do it without thinking, so it seems simple. But the fact is, it takes a fabulous amount of computational horsepower just to prevent a two-footed, walking bot from falling. Early mobile robots had to drag a cable connecting them to a fairly big computer—which meant limited mobility.

A lot of the focus in robotics now is on creating bots that walk like humans without help. And a lot of this behaviour—including walking—is learned by the robot, instead of being hard-coded. It may seem that hardcoding the behaviour is simpler, but it's not: it's easier to program robots so they learn by themselves.

According to some sources, computing power increases a thousandfold every 15 years. If this is the case and if the trend continues it's only a matter of time before even little metal pets like the Aibo become intelligent. Still, many experts believe truly smart robots are inevitable, given the ever-growing power of computer chips. One hopes so.

Household Help

Despite all the advances and inventions in robotics, one unanimous feeling is that the future of robots is at home. That is, home robots; your maid or butler. These creatures would be expected to wake you up and have your morning cuppa ready, draw your bath, iron your clothes, make your breakfast, clean the house, probably read you your newspaper, make your lunch... the list continues.

But our existing technology may prove restrictive, and while work continues in this field, there is a certain amount of scepticism that has to be countered before intelligent robots can really become a part of mainstream life.

There are, for example, reasons to believe that research in the US is not as extensive as in Japan thanks to Hollywood's depiction of robots as evil beings. In Japan, though, robots have been widely shown as helpers and may hence just be accepted more easily. But what about the rest of the world? Being fed off Hollywood may even mar the widespread use of robots elsewhere.

Some interesting research from the creators of the Roomba has shown that more than anything else, people want to know if the robot can 'clean their floors'. The second most wanted feature humans want in a robot is the ability to wash clothes. Roomba seems to have fulfilled the first desire. Time to wait and watch how long before the next is fulfilled.

Can I Afford One?

US, Europe and Japan notwithstanding, can the rest of the world afford a robot even if they became reality? Developers and manufacturers predict that the prices of these household helpers may not exceed those of a high-end laptop. Say around $1,000 (Rs 45,000). In which case, your dream bot may just be reality. Start saving! ☒

aditya_kuber@thinkdigit.com

Imaging: Akhilesh Prasad

The RACE For Speed

For years, Intel and AMD upped speeds the gigahertz way. They're now pushing dual-core processors. We look at the why and the what of dual-core

Ram Mohan Rao

The only constant is change. In the computer world, the only constant is increase in speeds—read gigahertz. Ever since the public got sold on the idea of faster processors, Intel and AMD and the smaller processor manufacturers have been making their millions off just one idea—that people want faster computers. Of course, many things go into the making of a faster computer, but a faster processor is perhaps most important. So how do AMD and Intel make processors faster?

In what follows, we dwell on the *why* and *what else* and *what if* of dual-core processors more than on the processors themselves. This is because the actual concept is straightforward enough—it's the peripheral issues that are more pressing.

So, how does one make a faster processor? The first and most obvious answer is to make changes in the design of the processor such that it is intrinsically faster. To illustrate, pipeline implementations (see box *Instructions And Pipelines*) have a huge impact on processor performance—and breakthroughs that improve processor design come about once in a while. But some fundamental barriers are being reached, and the need is for a quick-fix solution to the 'gigahertz problem': faster processors, right now!

The second thing one could do is increase clock speeds. But that's another fundamental barrier that's being reached: the rate at which chips have been shrinking, manufacturers can't seem to achieve higher clock speeds without overheating the chip. Mandatory water cooling? That's a possibility... But even then, the heat we're talking about is due to the power that's supplied to the chip, and it takes a lot of power to get a

processor working at high clock speeds. Now, a processor with a lot of electricity all around the die is prone to electrical noise. This electrical noise causes interference between the 'wires', or pathways, on the processor. There could then be some electrical radiation between adjacent pathways, which could, in turn, corrupt data.

Another solution lies in keeping the processor busy for more of the time. This is achieved via HyperThreading, for example (see box *HyperThreading*).

One more possible solution is increasing the L1 and L2 caches (See box *Processor Caches* for more). This is a definite possibility, and is being done—but cache memory is expensive, and increases the total cost of the chip. Both Intel and AMD have been increasing the size of the L2 caches. Intel has even added an L3 cache to the 'Extreme' Pentium versions—this was previously unheard of in a desktop processor.

However, it must be borne in mind that increasing the cache is a diminishing-returns situation: beyond a certain point, increasing the cache just doesn't help.

As for increasing transistor count, processors are already cramped. While it may be possible to cram more in the future, it doesn't seem feasible right now.

The most elegant solution comes about when you think of the way computers are used these days: one person running several applications at the same time. A quick-fix solution would seem to be, why not delegate two processors for the same jobs? In other words, if there are four tasks being performed, how about two processors for the job—each of them doing two tasks, both working at the same time?

In principle, that's what dual-core processors are about: they're essentially two processor cores on one die. They're not two physically separate processors—the cores are on the same die, and internally share the L1 and L2 caches (See box *Processor Caches*). The two cores also have separate pipelines (See box *Instructions And Pipelines*), so data gets processed that much faster. (A die is an integrated circuit chip as diced or cut from a finished wafer; a wafer itself is a thin slice of semi-conducting material, such as a silicon crystal, upon which the microcircuits are constructed.)

The two cores share some hardware, such as the memory controller and the bus, whereas a dual-processor system has completely separate resources—such as the caches—for each processor.

Remember that in general, a dual-core processor won't be as fast as a dual-processor configuration. There could be exceptions to this, depending on the software that runs on these newer systems—so we'll have to wait and watch to see if dual-core beats dual-processor.

So then, why two cores on one die, when you could have a dual-processor rig? The answer is cost. A dual-core processor works out cheaper in terms of production cost than two processors taken together. This is not to mention that the motherboards required for a dual-processor configuration are more expensive too, because of the extra circuitry, and for other reasons as well.

Think now about how two cores would help: the simplest scenario is when your computer is doing two entirely different things. One could be the encoding of a video file, and the other could be the manipulation of an image in Photoshop. These two tasks could, in principle, be handled by the two cores independently. There's another scenario here: the second processor will be able to keep the system running smoothly if the first core is being put to 100 per cent use. Think about how your system slows down when you're encoding a video file... with the help of the second processor

Processor Caches

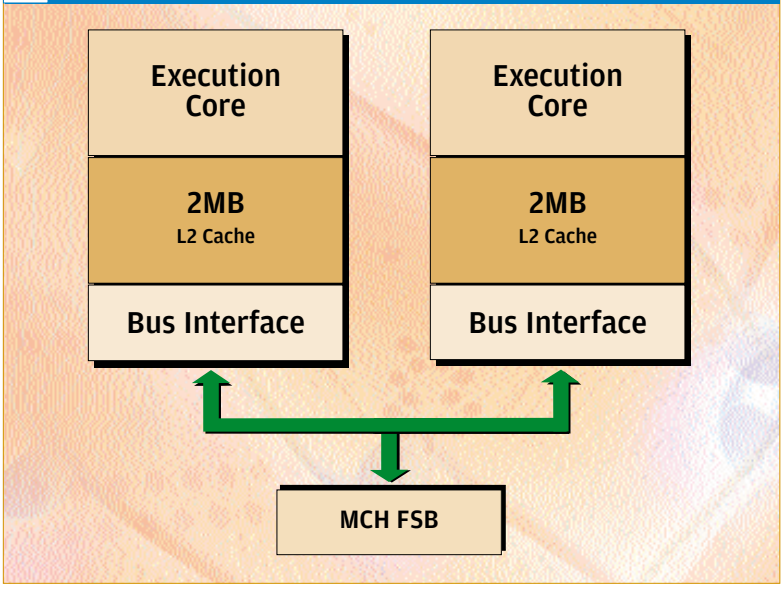
Processor cache memory is expensive, very fast memory—much more expensive than, say, DDR-RAM. It is located on the same die as the processor. The processor cache is used by the processor to reduce the average time that it takes to access memory.

To understand how cache memory works, think about two instructions—"add A and B to make C" and "add D to C". Now, after the processor has added A and B to make C, C is stored in main memory (the RAM) as a value. But it's also stored in the cache. This is because it's very likely that there will be some instructions in the near future that will need C. Sure enough, our next instruction goes "Add D to C", and the processor, when it looks for the value of C, looks in the cache first. In our example, it will definitely find it in the cache, because just the previous instruction mentioned C. So overall, the CPU has to 'go' to main memory less often, with the help of caches. (Remember that main memory is much slower to respond than cache memory. Since the cache needs to be fast, it has to be placed physically very close to the processor.)

Now where 'L1' and 'L2' come in is when you consider the fact that L1 cache—the memory that is physically closest to the processor, after the actual CPU registers—is prohibitively expensive. Processors therefore can only afford a small L1 cache. If the cache size is to be increased, one needs to resort to a slower, larger L2 cache, which is further away from the processor. This is the multi-level cache concept.

The L1 cache, typically 8 to 64 KB in size, is where the processor looks first. If the item is not found, the processor looks in the larger (typically 256 KB to 2 MB), slower L2 cache, and so on, all the way to main memory.

Intel's Dual-Core Approach



The Intel approach to dual-core seems more like a quick-fix solution than something built from the ground up. The two cores have their own L2 caches and bus interfaces, but the communication between the cores happens via the Northbridge and FSB outside the chip. The 'MCH' here is the Memory Controller Hub.

core, you wouldn't even notice that there's some encoding going on in the background!

The Software Aspect

There's a difference between multi-tasking faster, and a single program running faster. You could expect a performance boost if, like we said, you're running two very different programs. But the story is different if you're running just one program. In this case, you may not even notice the difference between a regular processor and a dual-core.

So overall, what kind of an improvement can you expect with dual-core? The operating system and the software have to be aware that there are two cores out there doing the work, and make the threads accordingly. Remember that the two cores make sense only if there are entirely different threads to exploit—so the separate threads have to be created somehow. And it is one of the jobs of the OS and the software to do this. On top of that, they obviously cannot do it with 100 per cent efficiency (or segregation).

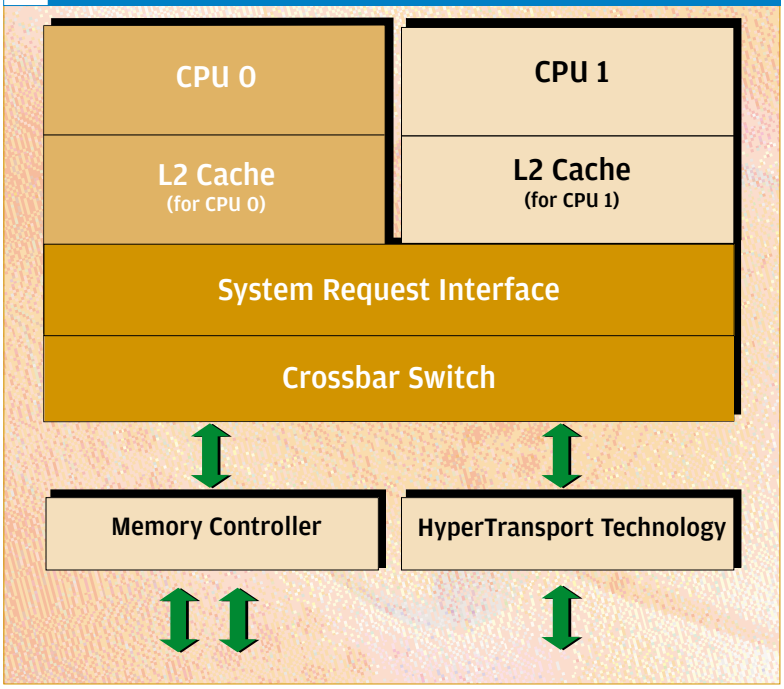
So can current OSes and software do this? Unfortunately, not all. Some OSes, such as Windows XP Home, simply cannot acknowledge that there are two processor cores. And most games and applications aren't written with this in mind. (Adobe Photoshop, amongst other programs, happens to be, so if you use it extensively, go right out and buy a dual-core!)

Meta Group vice president Steve Kleynhans says, "It's a lot more complex to write software that's multithreaded. It's also harder to check for errors. We could find ourselves with buggier software. Certainly software vendors have known this and been working on multithreaded applications for some time, but it is more complex."

That makes it sound like a pretty dismal situation. But keep in mind two things—first, that as dual-core becomes mainstream, operating systems and software will definitely evolve towards being multithreaded, complex though it may be. The market will demand it. And secondly, as we mentioned before, even if your applications aren't currently aware of two processors, and if one app maxes out one core, the other core will prevent your system from lagging.

But then again, another question raises its head. If dual-processor-aware applications aren't so many, why are the chipmakers pushing for their release right now, in their desktop avatars? The answer probably lies in competition—and early adopters of the technology apart, neither AMD nor Intel can afford to lag behind too much, lest its marketshare be gone by the time it gets in!

AMD's Dual-Core Approach



Because AMD added a Northbridge-like provision to the Athlon64 die to support the memory controller and the HyperTransport link, the two cores can communicate with each other within the processor itself. The 'crossbar switch' handles requests to the memory controller and the HyperTransport link to the rest of the system.

AMD's And Intel's Approaches

AMD's and Intel's approaches to dual-core is very different. In AMD dual-core processors, the two cores communicate via a Northbridge-like provision (see box *The Northbridge*) within the chip itself. AMD had to add this provision to the Athlon 64 die so as to support the onboard memory controller and HyperTransport link (see box *HyperTransport*), and this now comes in handy—a second core can easily be accommo-

Instructions And Pipelines

A computer instruction is not as simple as "add A and B". There's more to it than that. For example, if you're talking about A and B, the instruction needs to be read first; then, the data needs to be brought from wherever it is—either from the CPU registers, the CPU cache, or from main memory. After that, the addition operation must be done, and the result placed somewhere so it can be accessed.

There are independent units in the processor that do each of these things. For example, one unit fetches the instruction; another checks where in the system the values are (assuming it's an 'add' operation we're talking about); another brings the values in; another does the actual calculation; and finally, one unit places the result in a suitable location.

What happens in pipelining is that sequential instructions are carried out simultaneously, based on the principle that each of the units mentioned above can do different things in different instructions.

To illustrate, suppose "add A and B" is followed by "add C and D". What happens? First, the "add A and B" instruction is fetched by the instruction fetcher. Then, while the appropriate unit is figuring out where A and B are, the "add C and D" instruction is fetched by the instruction fetcher. After that, while A and B are being added by the adding unit, the 'location figuring' unit is figuring where C and D are.

The basic idea of pipelining is as simple as that—each unit of the CPU is always doing something, instead of each instruction finishing before the next one is brought in.

Modern advances in computer architecture consist largely in figuring out how to make the pipeline architecture on the chip work better.

dated, with all inter-core communication happening within the chip.

By contrast, in Intel dual-core processors, the communication has to happen via the front-side bus and the Northbridge on the motherboard, meaning external access.

So are AMD's dual-core chips "better and faster" than the Intel one? It seems so. To quote News.com, "Both Anandtech and Tom's Hardware—two hardware benchmarking sites—have published reports stating that, in their own tests, the dual-core Athlon 64 X2 chips generally edge out the Intel Pentium D and the dual-core Pentium 4 Extreme Edition, although the results vary by the tests. Anandtech found that the fastest dual-core Athlon, the 4800+, and often other dual-core Athlons, typically outperformed the Intel chips on tests for single applications, such as running Adobe Photoshop or DivX."

This is not surprising, since it seems that Intel's Pentium D, a dual-core processor, is just like two identical P4 Prescott processor dies tacked together.

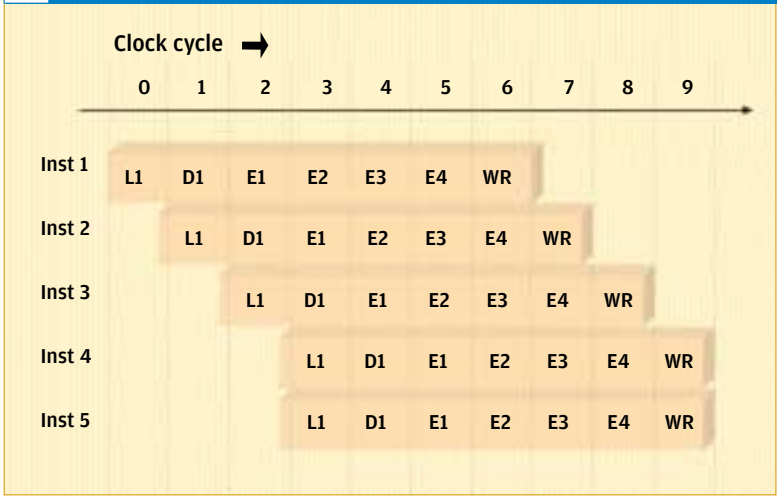
Heat

Heat is the enemy of processors, to the extent that one of the reasons clock speeds can't just be bumped up is heat! How much heat do dual-core processors produce? Fortunately, not too much. AMD says their dual-cores will produce about the same amount of heat as their single-cores. Intel's dual-core processors, like the Pentium D, produce more heat than AMDs—but even this is not alarmingly high.

We've all heard about heating issues with processors, and now, when there are two cores on a single die, shouldn't there be double the amount of heat?

There are a couple of reasons that this is not the case, apart from the obvious fact that not both cores will be maxed out at the same time. Firstly, clock speeds: dual-core processors are, in general, clocked somewhat slower than their single-core brethren. And secondly, dual-core processors are being manufactured using the 90 nm fabrication process, just like the latest single-cores. The "90 nm" refers to the smallest 'feature' size on the die, usually the gate width of the transistors. A smaller fabrication size leads to less power dissipation, and therefore less heat.

How Pipelining Works

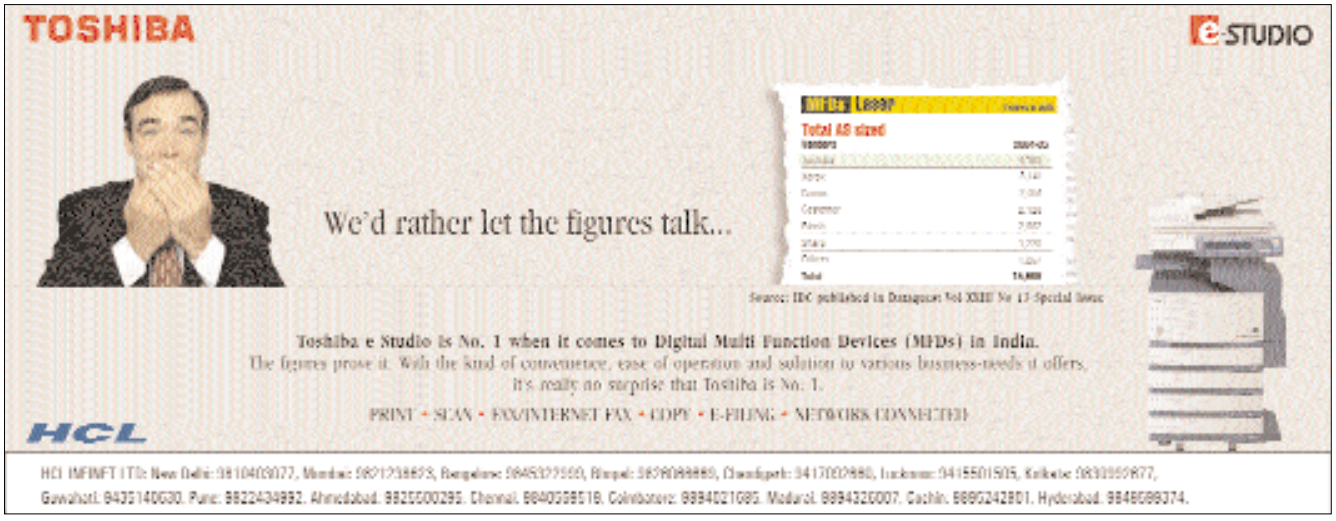


Pipelining is one of the fundamental techniques to speed up processors. The orange blocks above are instructions, broken into their component parts. 'L1' stands for 'Load'; 'D1' stands for 'Decipher'; 'E' stands for 'Execute'. So here, in clock cycle 1, the processor loads instruction 1. In cycle 2, the first instruction is being deciphered, while at the same time, the second instruction is being loaded. Clock cycle 3 sees instruction 1 being executed, instruction 2 being deciphered, and so on. In dual-core processors, each core has its own pipeline.

The Northbridge

The Northbridge is one of the two chips in the core logic chipset on a motherboard, the other being the Southbridge. Sometimes-but not too often-the two have been combined on to one die, when design complexity and fabrication processes permitted it. But in general, core logic chipsets are divided into these two main parts. The Northbridge typically handles communications between the CPU, RAM, AGP port or PCI Express, and the Southbridge. Some Northbridges also have integrated video controllers.

In our context, the point is that AMD's dual-cores have a Northbridge-like provision within the chip itself, so there's no need to go to the motherboard for inter-processor communication.



The Motherboard Issue

The first run of the dual-core Athlon 64 X2 chips are compatible with any Socket 939/940 motherboard. All that's required is a BIOS update! But in the case of Intel, you need a new pair of supporting chipsets—the Intel 945P and 955X—meaning you'll have to buy a new motherboard if you want an Intel dual-core. This really makes it seem like AMD is already ahead in the race when it comes to dual-core.

AMD could already be ahead in the race when it comes to dual-core

Licensing issues

With the advent of dual-core, licensing issues have cropped up. If a software is licensed for one 'computer', but it's assumed that the computer has only one processor, what happens when the computer happens to have more than one processor? Does a dual-core processor count as two processors or one?

How multi-core chips will affect licensing is unclear, but industry analysts say a simple, uniform system is unlikely anytime soon. AMD recently released recommendations for how software companies should charge: it said companies should count processors based on the number of physical sockets used. This would mean a dual-core chip would count as a single processor. Microsoft, too, has said that it will consider a dual-core processor a single processor, and will charge per processor, not per core.

Oracle, on the other hand, considers a dual-core server a two-processor server when charging for its server software. Similarly, IBM considers two cores as two processors for software licensing purposes. But other software sellers are taking the opposite stance: Sun not only prefers the socket definition for a processor, it argues for a radical pricing structure change. When selling its server and desktop software, it charges a fixed annual fee based on the customer's total number of employees.

Kuldip Hillyer, a manager in the strategic marketing group at BEA, gives a compelling argument: "Dual-core does not equal two CPUs in terms of performance. Hardware vendors don't charge you double; they charge a 30 to 40 per cent premium."

Dwight Davis, vice president and Practice Director at Summit Strategies, sums it up: "Some licensing models are showing signs of strain, none more than the per-CPU model common to databases and application servers. The static per-CPU model seems destined for extinction."

Here To Stay

Call it a game. Or a race. The chipmakers simply had to get faster CPUs out there, and dual-core seems the best approach—regardless of how much software support currently exists.

However, regardless of whether the software supports it, the fact is that more and more applications are being run these days at the same time. We routinely run anti-virus software, firewalls, CD-burning, Web browsing, and much more, all at the same time. If the OS can properly schedule these software to run on two cores, you *will* see the difference. In addition, software will evolve, and individual pieces of software will soon become amenable to being run on two cores.

Whatever the case may be, you're going to get a dual-core processor soon. They will be mainstream by 2006—there's no escaping that! ■

ram_mohan@thinkdigit.com

HyperThreading

To understand HyperThreading (HT), one needs to first understand what threads are. Threads are something that programs create. Think about threads not as programs, but as independent execution lines. An example is seen in browser software: the graphics, text, sound, all seem to load independently-that's because each of these elements is a thread, which are interpreted by the browser as such.

Intel's HT technology basically fools the OS into thinking that there are two processors. If there had been two processors, it would have been possible to hand one thread to one processor and the other thread to the other one; with HT, that's what it seems like to the OS.

This ideally doubles the activity in the chip, and speeds it up. One example of how this speedup takes place is that with two threads being handed to the processor, there are fewer cache misses—a cache miss, as the term suggests, occurs when the processor requests something that isn't there in the cache.

Intel has estimated that a single instruction thread uses only about 35 per cent of a processor's available resources.

If there had been ideal division of labour between the two threads, they could have done something totally different—for example, one thread could operate on fetching data from the hard disk, and the other could do integer arithmetic. Of course, that's the ideal scenario, and the reality is that HT can increase the performance of some applications by "up to" 30 per cent, according to Intel.

The Pentium Extreme Edition 840 is a dual-core processor that supports HyperThreading within each core—so this means it appears as four logical processors to the OS!

HyperTransport

HyperTransport is a high-speed technology for data transfer within the integrated circuits in computers and other devices. The technology allows data throughput in excess of 12.8 gigabytes per second. HyperTransport was developed by AMD in co-operation with several other companies, and is a trademark of the HyperTransport Consortium.

GRR-aphics Cards

To keep you updated on what's happening in the video card market in India, here's *Digit*'s biggest-ever graphics card test

Imaging Pratip Ingale

Bhaskar Banik and **Jayesh Limeye**

In January 2005, we touched upon and compared AGP cards. Our prediction that PCIe video cards would take some time to pick up in the market has been correct to an extent. However, the lower end of the spectrum has not conformed to this, and it's certain that the popularity of low-end PCIe cards is on the rise—while the mid-range and high-end segments have yet to make its mark.

In this comparison, we opted for the same method of categorising our cards—in three segments; low-end, mid-range and high-end, like we did last time. Most of the cards we received this time are also available in the AGP flavour except for the nVidia 5XXX series and the ATi 9XXX series.

Do refer to the AGP comparison in our January issue. This will help you gain an overall perspective into the performance difference between the two platforms.

We tested 32 cards this time in sum across all categories with a modified test process *(See box How we tested)*. The test process was modified keeping in mind the powerful GPUs that are available on current video cards. We got to lay our hands on some of the best cards available in the market—and some not-so-available ones—including the GeForce 7800GTX and the 6800 Ultra Dual GPU.

LOW-END CARDS

Would you have imagined six months ago that PCI-Express products would be available for the low-end market so soon? PCI-Express has penetrated the budget segment big-time. This could partly be credited to the plummeting prices of PCI-Express motherboards which, as you're probably aware, we reviewed last month.

The eight PCI-Express low-end graphics cards we received were from Gainward, Gigabyte, MaxForce, MSI, PowerColor and XFX. Even the big players, thus, have a presence in this segment. The cards in this segment were obviously based on the lower-performing GPUs—the nVidia GeForce 6200TC and the ATi X300.

Features

Both the nVidia and ATi GPUs in this segment featured new memory management techniques. While nVidia featured TurboCache, ATi featured HyperMemory. (More on these technologies later). The Gainward, PowerColor and XFX GeForce 6200TC supported 256 MB, while the rest supported 128 MB of memory. Of these, only the PowerColor X300 256 MB card sported a 128-bit memory interface, while the rest had either a 64- or a 32-bit memory interface. We therefore expected the PowerColor X300 to be the top performing card in this category.

Most of the cards came bundled with a S-Video cable—except the MSI GeForce 6200TC 128 MB, which came only with a driver CD. Some cards came bundled with a DVI to VGA adapter. Dual-monitor, which was a feature found only on high-end cards just a few years ago, was available on all the cards here—except for the Gigabyte GeForce 6200.

PCI-Express cards are much faster than their AGP cousins, and once you start playing games on them, it shows

All the nVidia-based cards supported DirectX 9.0c, which essentially means Shader Model 3.0, whereas the ATi-based cards supported DirectX 9.0b, which means Shader Model 2.0. The core of the nVidia cards is clocked at 350 MHz, whereas that of the PowerColor X300 is clocked at 400 MHz—while the other ATi-based cards had a stock core speed of 325 MHz. The 256 MB nVidia cards had memories running at effective speeds of 700 MHz, while all the ATi based cards had their memories clocked at 400 MHz.

The GeForce 6200TC has all the features of the high-end cards from nVidia. So why are these cards in this category? It is crippled by only four pipelines and a single texture mapped unit per pipeline. Also, the core and memory clock speeds are much lower than the GT cards in the mid-range and the high-end. This, in addition to the shared memory, causes them to yield much lower performance than the mid-range and high-end cards. This is also applicable to the cards based on the ATi chips.

Performance

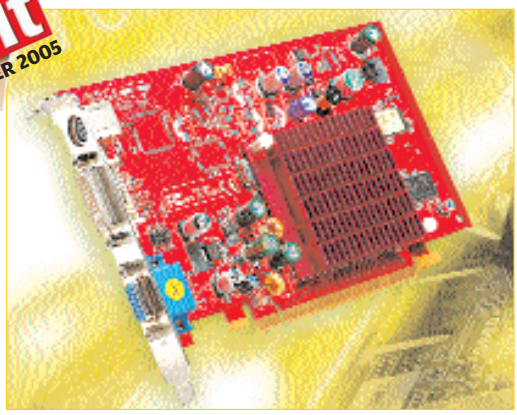
As expected, the top performer in this category was the PowerColor X300 256 MB card, with its comparatively higher clock speeds and a wider, 128-bit memory interface.

At 1024 x 768 in *Doom 3*, this card posted a score of 22.20 fps, followed closely by the Gainward GeForce 6200TC 256 MB 20.30. In *Half-Life 2* at 1024 x 768, it logged 65.07, while the Gainward scored 48.13 fps. The same was the case with *FarCry*—the PowerColor churned out 72.19 fps, while the Gainward followed with 58.80.

In 3DMark 03 at default settings, this card scored 3098, which is the highest in this category, followed by the Gainward at 2659.

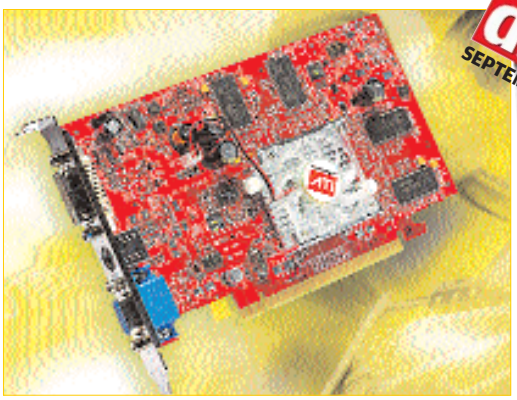
Conclusion

Remember that this category, which we have called 'low-end', is nothing but the budget category, and pricing a card too high in this category is alienating the card from the consumers in this segment. The fight would have been between the MSI GeForce 6200 256 MB and the Gainward GeForce 6200 256 MB. But the MSI was priced way too high at Rs 6,300, whereas the Gainward was priced at Rs 3,950 - and thus, won the *Digit* Best Buy Gold because of its best price-to-performance ratio.



Gainward GeForce 6200 256 MB

Photograph Sandeep Patil Imaging Sivalal S



PowerColor X300 128 MB

Whatever it won in terms of pure performance and features, the PowerColor X300 256 MB card lost when considering its price of Rs 5,950. It still managed to scrape in as our Silver winner.

MID-RANGE CARDS

The mid-range cards always hold the interest of those who want the best, but can't afford it. Such users usually settle for the next-best. We got plenty of cards to play with this time—ten cards from nVidia and three from ATi. We could not include one card from Asus, the 6600GT, since it suffered from display corruption. We also had two new entrants in this category, namely BIG and Sapphire, who sent us nVidia and ATi cards respectively.

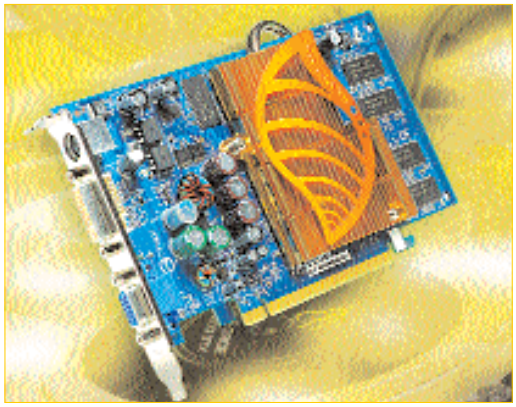
Features

Most cards in this category were bundled with the regular assortment of cables and games, but some brands stood out. Sapphire, for instance, bundled a VIVO cable with their card, while it rained games in the MSI box—we counted 14 CDs, including game and software application CDs. As usual, Gigabyte, too, provided an excellent game and software bundle with their cards.

The rest of the cards were modestly packaged. However, the performance of the cards was what we were waiting for, and that's what we talk about next.

Almost all the cards we tested in this category were based on either the 6600 or 6600GT chips from nVidia, or the X600 or 600XT chips from ATi. Before we move on to performance, let's look at some differences in the cores of these two chips. This will let us better analyse the performance difference that will be apparent when you check the scores.

The 6600GT core has been built from the ground up for the PCIe bus and runs at a core clock speed of 500 MHz, which is actually faster than a 7800GTX. It also features eight pixel pipelines, which puts it in the same class as the Radeon 9700.



Gigabyte GeForce 6600 TurboForce Edition 256MB

How We Tested

The low-end segment of our tests comprised eight cards based on the nVidia GeForce 6200TC and the ATi X300 chips. The mid-range segment comprised thirteen cards based on the nVidia GeForce 6600 series and the ATi X600 and X700 series chips, while nine cards based on the nVidia 6800 series and the 7800 GTX and ATi X8xx series chips were included in the high-end segment. We also tested the MSI NX6800GT SLI and the ASUS Dual GPU GeForce 6800 Ultra cards separately.

We had two different test beds, one for the low-end and other for the mid-range and high-end cards. The test bed for the low end comprised of a 939-pin AMD Athlon64 3800+ on an ECS RS480-M motherboard with 512 MB of 400 MHz DDR Corsair TwinX RAM modules and a 120 GB Seagate SATA hard drive.

The other test bed comprised an AMD Athlon64 FX-53 on an nForce4 SLI edition-based motherboard with high performance and low latency 1 GB of 400 MHz DDR Corsair XMS TwinX RAM modules, and a 250 GB Maxtor SATA hard drive. The test beds above were chosen after careful consideration to eliminate any CPU and memory bottlenecks in the respective categories. All the tests were performed at 32-bit colour depth.

Low-end card tests: The testing process for the different categories was also different. In the low-end segment, we benched *Doom 3*, *Half-Life 2* and *FarCry* at lower resolutions of 640 x 480, 800 x 600 and 1,024 x 768, and the frames per second were logged. *Doom 3* tested the OpenGL graphics subsystem, while *Half-Life 2* and *FarCry* tested the Direct3D subsystem. Futuremark's popular synthetic benchmark, 3DMark 03, was also run at 800 x 600 and 1024 x 768 at default settings, and the score was noted. During the tests, anti-aliasing (AA) and anisotropic filtering (AF) was turned off.

Mid-range and high-end card tests: For the mid-range and high-end cards, we used the above-mentioned games as well as *Halo* and Futuremark's 3DMark 05. All the gaming tests were performed at 1024 x 768 with AA and AF turned off, and the scores were noted. *Doom 3* was tested at 1,024 x 768 at high quality and 4x AA settings. It was also tested at 1,280 x 1,024 and 1,600 x 1,200 at high quality settings with AA turned off. *Half-Life 2*, *FarCry* and *Halo* were tested at high quality settings at 1,024 x 768, 1,280 x 1,024 and 1,600 x 1,200 at high settings, and at low-quality settings at 1,024 x 768.

3DMark 03 and 3DMark 05 were run at default settings at 1,024 x 768 and the scores were noted. In all the cases, AA and AF were turned off. The MSI NX6800GT SLI and the Asus Dual GeForce 6800 Ultra GPU cards were tested the same way.

How We Awarded

For the low-end products, price was given a considerably higher weightage than the other categories. The price weightage was reduced for mid-range and high-end cards in favour of weightage for performance and features.

The performance weightage for the high-end cards was the highest. The scores were calculated on the basis of features, performance and price.

The card with the highest score was awarded the Digit Best Buy Gold award and the first runner-up was awarded the Digit Best Buy Silver award.

Scoreboard — Low-end PCI Express Graphics Cards

BEST BUY digit SEPTEMBER 2005

BRAND	Gainward	Gigabyte	Gigabyte	MaxForce	MaxForce	MSI	PowerColor	XFX
Model	**GeForce 6200 256 MB**	**GeForce 6200 128 MB**	**X300 SE 128 MB**	**GeForce 6200 128 MB**	**X300 SE 128 MB**	**GeForce 6200 128 MB**	**X300 256 MB**	**GeForce 6200 256 MB**
Chipset	NVIDIA GeForce 6200TC	NVIDIA GeForce 6200TC	ATi X300 SE	GeForce 6200TC	ATi X300 SE	NVIDIA GeForce 6200TC	ATi X300	NVIDIA GeForce 6200TC
Features	**28.70**	**20.65**	**21.35**	**25.55**	**21.35**	**21.35**	**25.90**	**27.30**
Dual Monitor Support	4	6	4	4	4	4	4	4
Software Bundle	DVI-to-VGA adapter, S-Video cable, Driver CD	DVI-to-VGA adapter, Driver CD	S-Video-to-Composite adapter, Driver CD	DVI-to-VGA adapter, S-Video cable, Driver CD	S-Video-to-Composite adapter, Driver CD	Driver CD	DVI-to-VGA adapter, S-Video cable, Driver CD	S-Video Cable, Driver CD
Specifications								
Memory (MB)	256	128	128	128	128	128	256	256
Manufacturing (nm)	110	110	110	110	110	110	110	110
Core Clock Speed (MHz)	350	350	325	350	325	350	400	350
Effective Speed (MHz)	550	700	400	700	400	400	400	400
Memory Bus Width (bits)	64	32	64	32	64	64	128	64
Max Resolution	2048x1536	2048x1536	2048x1536	2048x1536	2048x1536	2048x1536	2048x1536	2048x1536
Compatibility (DX/OpenGL)	DX 9.0c/ OpenGL 2.0	DX 9.0c/ OpenGL 2.0	DX 9.0b/ OpenGL 2.0	DX 9.0c/ OpenGL 2.0	DX 9.0b/ OpenGL 2.0	DX 9.0c/ OpenGL 2.0	DX 9.0b/ OpenGL 2.0	DX 9.0c/ OpenGL 2.0
Pixel Pipelines	4	4	4	4	4	4	4	4
Pixel Shader/Vertex Shader	3.0/3.0	3.0/3.0	2.0/2.0	3.0/3.0	2.0/2.0	3.0/3.0	2.0/2.0	3.0/3.0
Performance	**31.98**	**25.96**	**28.10**	**25.56**	**26.96**	**30.59**	**38.25**	**27.45**
3D - OpenGL								
Doom 3								
Normal (640x480x32) (fps)	41.30	32.00	32.70	32.10	31.10	40.10	48.40	33.40
High (800x600x32) (fps)	29.90	22.30	22.10	22.20	21.20	28.80	32.10	24.00
Max (1024x768x32) (fps)	20.30	15.40	15.00	14.80	14.40	19.70	22.20	16.20
3D - Direct3D								
Half-Life 2								
Normal (640x480x32) (fps)	85.49	77.15	93.89	76.43	91.44	85.30	105.25	82.61
High (800x600x32) (fps)	68.56	60.48	72.25	60.20	71.22	37.93	91.71	63.81
Max (1024x768x32) (fps)	48.13	42.14	48.19	41.65	47.44	47.22	65.07	43.93
FarCry								
Normal (640x480x32) (fps)	96.85	92.91	104.89	90.76	103.45	96.01	113.66	93.53
High (800x600x32) (fps)	83.34	69.93	77.88	68.35	75.78	84.92	106.03	72.10
Max (1024x768x32) (fps)	58.80	47.47	49.42	46.53	47.72	57.99	72.19	49.50
3DMark 03 score								
Low End (800x600x32)	3602	2721	1988	2679	2711	3595	4211	2968
High End (1024x768x32) (fps)	2659	1997	2851	1963	1890	2641	3098	2166
Price Index	**14.63**	**16.51**	**16.51**	**17.00**	**14.82**	**9.17**	**9.71**	**16.51**
Price (Rs)	**3950**	**3500**	**3500**	**3400**	**3900**	**6300**	**5950**	**3500**
Overall Score (Out of 100)	**75.31**	**63.12**	**65.96**	**68.11**	**63.13**	**61.12**	**73.86**	**71.26**

On the other hand, the X600 runs a clear 100 MHz less, and has four pixel pipelines less. The X700 is more in the class of the 6600 GT, but its performance is much lower, as you will see in the performance analysis.

Performance

The 6600 series dominated here. In most game tests, the ATi cards couldn't match the nVidias. None of the ATis posted scores that could match up to the 6600 cards. At higher resolutions, the 6600 non-GT cards and the ATi cards could only manage a maximum of 40 fps. The GTs comfortably cruised above 50 fps in most DirectX games. This translates into a good gameplay experience.

Users who purchase a mid-range video card look for value of money as well as a good, if not excellent, gaming experience. This is what we based our tests on.

The price these cards retail at is generally in the range of Rs 5,000 to Rs 15,000. For a user who wants decent gameplay at resolutions of up to 1024 x 768, a regular non-GT 6600 is more than enough. In most cases, you can turn on a little of the eye-candy in games, but not all of it. The only ATi card we can recommend here is the X700. The other cards were barely able to provide playable frame rates—even at 1024 x 768.

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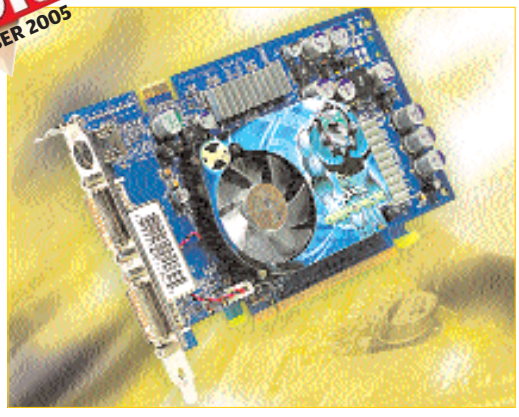


XFX GeForce 6600GT 256 MB

XFX GeForce 6600GT 128 MB

The culprit in the case of the ATi cards is the crippled clock speed and pixel pipelines. Another factor is the older architecture that the ATi cards are based on, as compared to the 6XXX series from nVidia, which has been developed from the ground up. The architectural enhancements do play a major role in the scores that the 6600 cards posted.

The 6600GT definitely costs more, but you can be sure of the performance of the card, which is much better in terms of frame rates and the eye candy possible in games—even at high resolutions. In fact, it sometimes beat the plain vanilla X800 in the game tests.

There is a continuous stream of new games released each year, and with each game the hardware ante is upped, at least in the video card department. Any investment on a 6600GT is money well spent—it will definitely stand you in good stead for at least the next two years.

Conclusion

The XFX GeForce 6600GT duo was the king here. No other card could come close to the scores posted by these two, in any game, be it OpenGL- or DirectX-based. They even topped the 3DMark scores. The surprising thing was that the XFX GeForce 6600GT 128 MB card posted scores identical to its 256 MB counterpart in all the games! It seems none of the games or benchmarks could utilise the extra 128 MB available on the XFX GeForce 6600GT 256 MB card.

nVidia TurboCache And ATi HyperMemory

The nVidia GeForce 6200TC and the ATi X300 chips in the low-end segment featured new memory management techniques. While nVidia featured TurboCache, ATi featured HyperMemory. The bottomline is that both these implementations are in many respects similar to each other. In both the cases, the graphics card has dedicated memory onboard, but in addition to that, it can access a limited amount of system memory. This is something like AGP on a PCI-Express bus, because AGP cards can access system memory in a similar way, and this was known as AGP texturing. Using this method, the requirement of the amount of onboard memory is greatly reduced, and this contributes to reduction of price.

The concept is somewhat similar to motherboards with onboard graphics, but the difference is that with graphics cards, there is at least some amount of dedicated memory, whereas in the on-board graphics of motherboards, there is usually none. The advantage of TurboCache and HyperMemory is that they bring most of the features of high-end cards within the reach of the general populace. This technology provides the highest graphics performance-to-price ratio.

In sum, the XFX GeForce 6600GT 256 MB wins the *Digit* Best Buy Gold award in the mid-range PCI-e card category, while the XFX GeForce 6600GT 128 MB wins the Digit Best Buy Silver award.

HIGH-END CARDS

This is where we talk about the cream of the crop! Low-end cards are accessible to anyone, and anyone willing to spend a little extra can get mid-range cards. However, this is the section where we talk about the Porsches and the Maybachs of the desktop graphics world.

Features

Features-wise, all these cards give you everything, including games, VIVO connectors and all the other stuff you could possibly expect. The VIVO connectors are especially mentionable, since you can directly provide component output to your HDTV from the card. Imagine playing *Doom 3* on your HDTV!

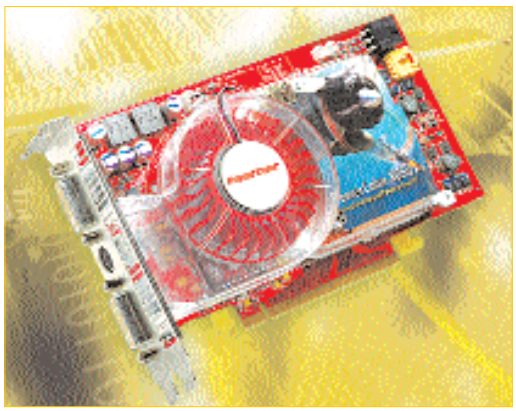
PowerColor and Asus were the two manufacturers that provided HDTV VIVO connectors. Games were aplenty, and MSI actually provided five games with the RX800. It's a pity the card couldn't make it to the comparison. On the other hand, XFX with their eye-catching X-shaped box provided the regular wires and cables—there was no HDTV connector. In terms of games, they bundled the full version of *FarCry* (DVD) with their high-end cards, which is sure to attract users.

Performance

We received 10 cards in this category, discounting the Asus 6800 Ultra Dual GPU monster and the SLI-setup. Of these, we could only review nine, since the MSI RX800 provided a corrupted display, and we could do nothing about it. The remaining nine are the best to date, anywhere, worldwide. These included top-of-the-line offerings from ATi and nVidia.

While nVidia has come out with two revisions of the graphics cards in their arsenal, ATi has stayed put with their X800 series. Sadly enough, the current nVidia cards make the X800 look and feel aged.

All the cards except the Gigabyte had active cooling circuits. Gigabyte chose to walk a different path and provided a passive pipe cooling

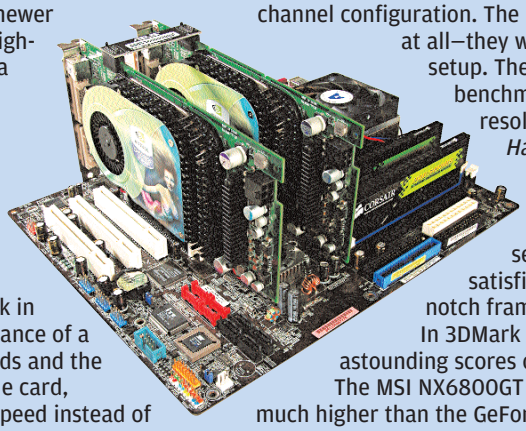


PowerColor X850 XT Platinum Edition 256MB

MSI NX6800GT SLI

When you buy a high-end 3D graphics card, you want the card to play the latest games for the next few years. Alas, newer technologies develop, and in just about a couple of years, your 3D graphics card buckles under the pressure of the ever-increasing polygons that are demanded by newer games, and you feel your card, which was high-end just a couple of years ago, is no longer a worthy gaming card.

nVidia has looked at the past and has reintroduced a scalable solution for this problem, known as SLI—Scalable Link Interface—which was the brainchild of 3DFX in the late 1990s. In an SLI setup, two graphics cards are mounted on an SLI-ready motherboard and connected to each other by a bridge. This enables them to work in tandem and deliver up to twice the performance of a single card. The bandwidth between the cards and the CPU still remains the same as that of a single card, because each card is limited to work at x8 speed instead of the x16 speed of a single card.



The MSI NX6800GT SLI is a pair of GeForce 6800GT 256 MB cards which can be connected in SLI configuration. These cards came in a nice carry case with some bundled games and OEM software. Two DVI to VGA adapters, power and S-Video cables were also provided.

It was mounted on an nForce4 SLI motherboard with an AMD Athlon64 FX-53 and 1 GB of Corsair XMS DDR RAM in dual-channel configuration. The benchmark results did not surprise us at all—they were what we expected from an SLI setup. The pair delivered fluid frames in all the benchmarks even at the highest possible resolution. At 1,600 x 1,200 in *Doom 3*, *Half-Life 2* and *FarCry*, the frames per second logged were 128.6, 85.14 and 122.10 respectively. Even with all the eye-candy cranked up, the SLI setup's hunger for polygons was not satisfied, and it continued to deliver top-notch frame rates.

In 3DMark 03 and 3DMark 05, the cards posted astounding scores of 19,282 and 9,045 respectively.

The MSI NX6800GT SLI is priced at Rs 61,000, which is much higher than the GeForce 7800 GTX's price of Rs 35,000. The MSI NX6800GT SLI beats the GeForce 6800 GTX in the 3DMark benchmarks, but lags in the gaming benchmarks. If you are a hardcore gamer, and demand the highest gaming performance, SLI is the way to go.

system on their ATi X800 card. The cooling was, however, not very efficient, and the heat-sink temperature soared when while testing it.

The XFX Geforce 7800GTX was a pleasure to test. Talk about adrenaline rushes... this one will get yours into overdrive! It scored a massive 16,649 points in 3DMark 2003 and 7,942 points in 3DMark 2005, second only to the SLI and Dual GPU monsters. At 2,048 x 1,536 in *Half-Life 2*, we could barely manage to read the text on the monitor, but this card effortlessly shoved a score of 86 frames per second at our incredulous faces.

The processing power of the GPU is the what needs to be given the credit here. In the 7800GTX core—the G70—the number of transistors on the die has gone through the roof. The performance boost here is due to the effective implementation of the G70 architecture and the DDR3 video RAM.

Although it lost out in the 3DMark tests, the 7800GTX beat the pants off the competition in the game tests. Just take a look at the scores table—the rest of the cards didn't stand a chance!

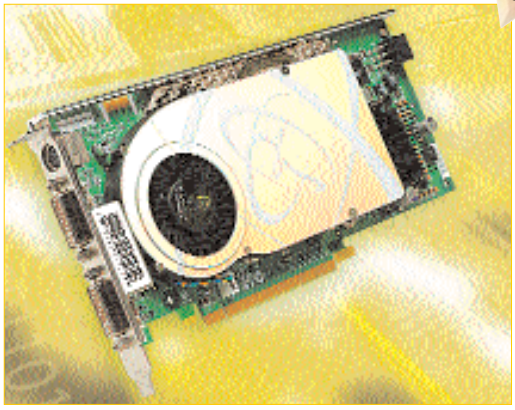
The next-best card was the 6800 Ultra, which stood up to its reputation of a pixel cruncher. The ATi cards put up a brave front, especially the PowerColor X850XT PE, which was able to take on the XFX and MSI 6800GTs.

All the other cards ended up like extras pn the set, never making their presence felt. The XFX GeForce 7800GTX was the show-stealer.

Conclusion

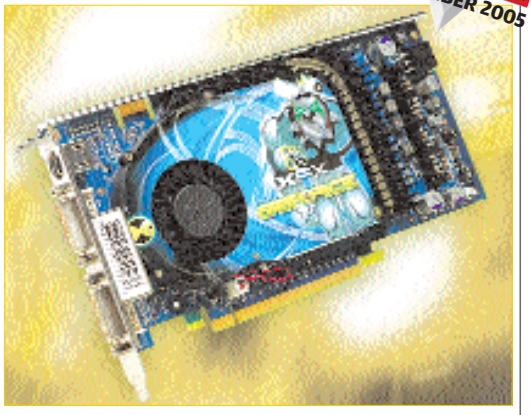
Given the excellent performance of the XFX 7800GTX, we expected it to be expensive. However, the price will put a smile on your face: it retails for just Rs 35,000. The XFX Geforce 7800GTX wins the Digit Best Buy Gold crown in our graphics card comparison in the high-end category.

The XFX GeForce 6800GT is the runner-up. It provides blazing fast frame rates which, although not comparable to the 7800, are fast enough to let you play any game on it. At Rs 23,000, this card takes the Digit Best Buy Silver crown for the high-end graphics card category.



XFX GeForce 7800 GTX 256 MB

XFX GeForce 6800GT 256 MB



Scoreboard — Mid Range PCI Express Graphics Cards

BRAND	ASUS	BIG	BIG	Gainward	Gigabyte	Gigabyte	MSI
Model	**Extreme N6600 TOP**	**GeForce 6600**	**GeForce 6600GT**	**Ultra/1780 PCX Golden Sample**	**GeForce 6600 TurboForce Edition**	**X600 XT**	**NX6600**
Chipset	NVIDIA GeForce 6600	NVIDIA GeForce 6600	NVIDIA GeForce 6600GT	NVIDIA GeForce 6600	NVIDIA GeForce 6600	ATi X600 XT	NVIDIA GeForce 6600
Features	**27.40**	**28.80**	**26.80**	**28.40**	**28.40**	**23.80**	**27.40**
Accessories/cables	DVI to VGA adapter, S-Video cable	DVI to VGA adapter, S-Video to composite cable, Composite extension cable, S-video to multi composite cable	DVI to VGA adapter, S-Video to composite cable, Composite extension cable, S-video to multi composite cable	DVI to VGA adapter, ViVo cable	DVI to VGA adapter, S-Video cable	ViVo cable	S-Video to composite cable, S-Video to multi composite cable
Software Bundle	Game CDs, OEM softeware bundle, ASUS utilities and driver CD	Driver CD	Driver CD	OEM software, Driver CD	OEM software, Driver CD	Game CDs, Driver CD	Game CDs, OEM software, MSI Utilities and Driver CDs
Specifications							
Onboard Memory (MB)	128	256	128	256	256	128	128
Manufacturing Process (nm)	110	110	110	110	110	110	110
Core Clock Speed (MHz)	300	300	500	300	300	400	300
Memory Speed (MHz)	550 DDR	550 DDR	1000 GDDR3	550 DDR	550 DDR	700 GDDR1	550 DDR
Memory Bus Width (bits)	128	128	128	128	128	128	128
Max Resolution	2048x1536	2048x1536	2048x1536	2048x1536	2048x1536	2048x1536	2048x1536
Compatibility (DX/OpenGL)	DX 9.0c/ OpenGL 2.0	DX 9.0c/ OpenGL 2.0	DX 9.0c/ OpenGL 2.0	DX 9.0c/ OpenGL 2.0	DX 9.0c/ OpenGL 2.0	DX 9.0b/ OpenGL 2.0	DX 9.0c/ OpenGL 2.0
P.S./V.S. Version	3.0/3.0	3.0/3.0	3.0/3.0	3.0/3.0	3.0/3.0	2.0/2.0	3.0/3.0
Pixel Pipelines	8	8	8	8	8	4	8
Performance	**27.10**	**23.52**	**31.73**	**21.97**	**25.47**	**14.38**	**21.05**
3D - OpenGL							
Doom 3							
Normal (1024x768x32) (fps)	74.50	74.90	84.10	59.60	68.60	42.00	59.50
High (1024x768x32) (fps)	69.20	74.60	84.10	59.60	69.70	41.90	60.30
High (1280x1024) (fps)	57.50	51.10	66.60	44.90	51.80	26.90	44.80
Max (1600x1200x32) (fps)	44.70	36.80	53.50	34.00	39.80	16.10	33.90
3D - Direct3D							
Half-Life 2							
Normal (1024x768x32) (fps)	104.71	91.81	113.96	85.82	102.31	69.43	85.63
High (1024x768x32) (fps)	65.53	62.32	74.80	58.12	69.34	44.12	51.61
High (1280x1024) (fps)	44.02	39.91	52.60	38.59	47.22	25.63	34.72
Max (1600x1200x32) (fps)	32.13	31.70	39.01	31.13	38.18	17.73	26.15
Far Cry							
Normal (1024x768x32) (fps)	192.84	185.11	196.15	160.23	155.79	135.88	159.28
High (1024x768x32) (fps)	75.47	59.79	88.71	54.97	59.59	30.67	55.65
High (1280x1024) (fps)	52.96	39.39	63.33	38.32	41.45	20.36	38.21
Max (1600x1200x32) (fps)	31.19	28.52	35.74	28.35	30.82	12.89	24.06
Halo							
Normal (1024x768x32) (fps)	70.96	57.01	85.05	55.09	76.60	34.57	55.13
High (1024x768x32) (fps)	65.78	50.84	81.10	49.37	60.24	31.12	49.47
High (1280x1024) (fps)	45.95	34.37	57.39	33.96	41.56	22.71	34.15
Max (1600x1200x32) (fps)	33.91	24.92	42.83	24.89	28.67	14.58	24.13
3DMark 03 Scores (Default)	6662	5266	7768	5132	5627	3438	5115
3DMark 05 Scores (Default)	2129	2087	2455	2079	2406	1367	1654
Price Index	**4.29**	**10.79**	**6.82**	**12.75**	**6.32**	**7.02**	**7.43**
Price (Rs)	**14700**	**5850**	**9250**	**4950**	**9990**	**8990**	**8500**
Overall Score (Out of 100)	**58.79**	**63.11**	**65.35**	**63.12**	**60.19**	**45.20**	**55.87**

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High-End PCI Express Graphics Cards

MSI NX6600GT	MSI RX600	Sapphire X700	XFX GeForce 6600	XFX GeForce 6600GT	XFX GeForce 6600GT	ASUS X800 XL	ASUS X800 XT	Gigabyte X800
NVIDIA GeForce 6600GT	ATi X600 XT	ATi X700	NVIDIA GeForce 6600	NVIDIA GeForce 6600GT	NVIDIA GeForce 6600GT	ATi X800 XL	ATi X800 XT	ATi X800
29.80	**22.60**	**22.60**	**25.20**	**25.20**	**27.20**	**29.80**	**31.60**	**26.60**
DVI to VGA adapter, S-Video to composite cable, S-Video to multi composite cable	DVI to VGA adapter, Power cable	ViVo cable, S-Video to composite cable	2 DVI to VGA adapter, S-Video to composite cable	2 DVI to VGA adapters, S-Video to composite cable	2 DVI to VGA adapters, S-Video to composite cable	2 DVI to VGA adapters, ViVo cable, S-Video to composite cable, HDTV ViVo cable	2 DVI to VGA adapters, S-Video to composite cable, Power cable, WebCam	DVI to VGA adapter, S-Video to multi composite cable
Game CDs, OEM software, MSI Utilities and Driver CDs	Game CDs, Driver CD	Game CDs, Driver CD	Game CD, Driver CD	Game CDs, Driver CD	Game CDs, Driver CD	Game CDs, Driver CD	Game CDs, OEM software, ASUS Utilities and Driver CDs	Game CDs, Driver CD
128	128	128	128	128	256	256	256	256
110	110	110	110	110	110	110	130	110
500	400	400	300	500	500	400	500	400
1000 GDDR3	700 GDDR1	700 GDDR1	550 DDR	1000 GDDR3	1000 GDDR3	1000 GDDR3	1000 GDDR3	700 DDR
128	128	128	128	128	128	256	256	256
2048x1536	2048x1536	2048x1536	2048x1536	2048x1536	2048x1536	2048x1536	2048x1536	2048x1536
DX 9.0c/ OpenGL 2.0	DX 9.0b/ OpenGL 2.0	DX 9.0b/ OpenGL 2.0	DX 9.0b/ OpenGL 2.0	DX 9.0c/ OpenGL 2.0	DX 9.0c/ OpenGL 2.0	DX 9.0b/ OpenGL 2.0	DX 9.0b/ OpenGL 2.0	DX 9.0b/OpenGL 2.0
3.0/3.0	2.0/2.0	2.0/2.0	2.0/2.0	3.0/3.0	3.0/3.0	2.0/2.0	2.0/2.0	2.0/2.0
8	4	8	8	8	8	16	16	12
30.46	**14.02**	**20.99**	**21.13**	**37.83**	**37.73**	**26.61**	**31.00**	**22.81**
83.60	41.30	63.70	59.70	121.20	120.80	107.90	120.60	86.90
82.60	41.30	63.40	60.50	121.00	120.20	107.50	120.60	86.70
65.80	26.80	41.90	44.90	88.80	88.70	76.10	93.00	60.10
52.00	14.90	29.50	34.10	64.60	64.30	54.50	67.10	43.30
112.98	67.38	88.04	86.59	119.78	118.51	125.95	123.89	116.74
73.32	42.71	53.91	52.42	88.96	89.89	91.25	91.51	82.16
50.60	25.47	31.35	34.55	67.97	68.49	71.92	80.38	58.65
31.98	17.63	22.86	25.71	54.45	55.28	58.93	69.63	47.98
195.02	131.46	140.30	159.64	197.57	196.85	207.18	208.00	207.29
85.68	30.46	49.48	55.90	106.39	106.69	103.65	135.67	87.47
61.41	20.14	32.68	38.25	71.26	72.00	67.93	91.65	60.13
34.85	12.80	21.76	24.15	52.32	52.20	49.37	65.98	44.26
81.18	34.13	75.62	55.25	86.07	96.51	98.94	128.50	96.93
73.31	30.22	57.65	49.56	86.22	79.39	96.30	113.82	76.69
52.61	20.16	39.44	34.09	59.23	55.84	66.64	81.19	53.57
39.74	14.33	26.49	24.90	43.18	39.17	48.40	54.06	37.22
7570	3351	4570	5131	8498	8520	8764	10389	7599
2397	1362	1591	1650	3611	3751	4309	5529	3859
5.59	**8.77**	**6.31**	**9.02**	**5.26**	**4.21**	**4.51**	**3.34**	**8.50**
11300	**7200**	**10000**	**7000**	**12000**	**15000**	**30160**	**40700**	**15990**
65.85	**45.38**	**49.91**	**55.34**	**68.29**	**69.14**	**60.92**	**65.93**	**57.91**

Scoreboard - High-End PCI Express Graphics Cards

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BRAND	MSI	PowerColor	PowerColor	XFX	XFX	XFX	ASUS	MSI
Model	**NX6800GT**	**X800 XL**	**X850 XT Platinum Edition**	**GeForce 6800GT**	**GeForce 6800 Ultra**	**GeForce 7800 GTX**	**Dual VGA**	**NX6800GT SLI**
Chipset	NVIDIA GeForce 6800GT	ATi X800 XL	ATi X850 XT Platinum Edition	NVIDIA GeForce 6800GT	NVIDIA GeForce 6800 Ultra	NVIDIA GeForce 7800 GTX	NVIDIA GeForce 6800 Ultra	NVIDIA GeForce 6800GT
Features	**29.80**	**29.00**	**29.80**	**30.80**	**31.80**	**30.80**	**29.00**	**32.80**
Accessories/cables	DVI to VGA adapter, S-Video extension cable, Power cable	S-Video to HDTV cable, S-Video to composite cable, S-Video to multi composite cable, Power cable	2 DVI to VGA adapters, S-Video to HDTV cable, S-Video to composite cable, S-Video to multi composite cable, Power cable	2 DVI to VGA adapters, S-Video cable, Power cable	2 DVI to VGA, S-Video to composite cable, Power cable	2 DVI to VGA adapters, S-Video cable, Power cable	2 DVI to VGA adapters, S-Video cable, 2 Power cables	DVI to VGA adapter, S-Video extension cable, Power cable
Software Bundle	Game CDs, OEM software, MSI Utilities and Driver CDs	Game CDs, Driver CD	Game CDs, Driver CD	Game CDs, Driver CDs	Game CDs, Driver CD	Game CDs, Driver CDs	Driver CD	Game CDs, OEM software, MSI Utilities and Driver CDs
Specifications								
Onboard Memory (MB)	256	256	256	256	512	256	512	512
Manufacturing Process (nm)	130	110	110	130	130	110	130	130
Core Clock Speed (MHz)	350	400	520	350	400	450	400	350
Memory Speed (MHz)	1000 GDDR3	1000 GDDR3	1080 GDDR3	1000 GDDR3	1100 GDDR3	1250 GDDR3	1100 GDDR3	1000 GDDR3
Memory bus width (bits)	256	256	256	256	256	256	256	256
Max Resolution	2048x1536	2048x1536	2048x1536	2048x1536	2048x1536	2048x1536	2048x1536	2048x1536
Compatibility (DX/OpenGL)	DX 9.0c/ OpenGL 2.0	DX 9.0b/ OpenGL 2.0	DX 9.0b/ OpenGL 2.0	DX 9.0c/ OpenGL 2.0	DX 9.0c/ OpenGL 2.0	DX 9.0c/ OpenGL 2.0	DX 9.0c/ OpenGL 2.0	DX 9.0c/ OpenGL 2.0
P.S./V.S. Version	3.0/3.0	2.0/2.0	2.0/2.0	3.0/3.0	3.0/3.0	3.0/3.0	3.0/3.0	3.0/3.0
Pixel Pipelines	16	16	16	16	16	24	16	16
Performance	**31.95**	**28.35**	**33.21**	**32.96**	**34.91**	**40.18**	**39.65**	**40.49**
3D - OpenGL								
Doom 3								
Normal (1024x768x32) (fps)	136.80	110.30	124.50	136.80	140.60	142.80	137.50	138.50
High (1024x768x32) (fps)	136.00	110.50	123.90	136.20	141.00	143.00	137.20	139.10
High (1280x1024) (fps)	114.60	78.70	98.00	114.50	127.40	141.70	132.70	136.40
Max (1600x1200x32) (fps)	91.40	56.10	73.90	91.70	106.30	132.10	122.90	128.60
3D - Direct3D								
Half-Life 2								
Normal (1024x768x32) (fps)	117.76	126.29	128.84	117.30	90.60	122.69	115.67	115.76
High (1024x768x32) (fps)	89.86	93.62	95.53	90.33	89.92	93.44	87.64	86.72
High (1280x1024) (fps)	84.37	77.16	85.53	84.36	88.29	94.15	86.67	87.13
Max (1600x1200x32) (fps)	73.12	64.06	74.96	73.36	81.69	91.48	84.83	85.14
Far Cry								
Normal (1024x768x32) (fps)	196.12	206.93	206.40	197.32	159.96	196.95	189.78	190.65
High (1024x768x32) (fps)	142.23	123.15	144.93	143.68	149.02	148.88	143.60	143.83
High (1280x1024) (fps)	103.35	80.45	101.21	105.77	123.16	144.57	138.03	139.92
Max (1600x1200x32) (fps)	79.01	57.59	73.11	79.04	94.07	124.46	117.60	122.10
Halo								
Normal (1024x768x32) (fps)	117.55	129.54	150.97	135.27	149.69	139.62	159.05	160.36
High (1024x768x32) (fps)	83.00	95.55	120.48	111.73	112.12	139.62	116.26	124.21
High (1280x1024) (fps)	70.58	66.20	88.07	81.02	88.14	125.77	115.73	119.11
Max (1600x1200x32) (fps)	60.71	45.90	65.14	60.16	67.87	60.16	97.76	100.44
3DMark 03 Scores (Default)	11524	9468	11267	11524	13143	16649	18547	19282
3DMark 05 Scores (Default)	4911	4810	5985	4923	5774	7942	8745	9045
Price Index	**4.46**	**7.17**	**4.86**	**5.91**	**2.42**	**3.88**	**2.25**	2.23
Price (Rs)	**30500**	**18950**	**27950**	**23000**	**56200**	**35000**	**60320**	61000
Overall Score (Out of 100)	**66.21**	**64.52**	**67.87**	**69.67**	**69.12**	**74.87**	**70.90**	**75.52**

Contact Sheet — Graphic Cards

Brand	Company	Telephone	E-mail	Web site
ASUS	ASUSTeK Computer Inc.	022-56490048	Info_india@asus.com.tw	in.asus.com
BIG	Big Byte Corporation	022-23894800	sales@bigbyteindia.com	www.big-tek.com
Gainward	Mediatech India	022-26361111	digit@mediatechindia.com	www.gainward.de
Gigabyte	Gigabyte Technology (India) Ltd.	91-22-26526696	sales@gigabyte.in	www.gigabyte.in
MaxForce	Maxtone Electronics	022-23016468	maxtone@vsnl.com	www.maxtone.com
MSI	Micro-Star International	011-51758808	info@msi-india.com	www.msi-india.com
Sapphire	ATi Technologies	022-252470085	vsingh@ati-india.net	www.sapphiretech.com
PowerColor	Mediatech India	022-26361111	digit@mediatechindia.com	www.powercolor.com
XFX	Rashi Peripherals	022-28221013	navinderc@rptechindia.com	www.xfxforce.com

Asus Dual VGA/Dual GPU 6800 Ultra 512MB

SLI improves and scales gaming performance. But what if this could be achieved using a single card? What if two GPUs are snug-fit onto a single card?

Remember the Obsidian X-24 in the 3DFX days, which had implemented SLI on a single board with two Voodoo II chips on-board? The Asus Dual VGA 512 MB card does just that. It is, in fact, a chip-level SLI implementation—two GeForce 6800 Ultra chips on a single card, eliminating the need to plug in two cards into two different slots.

You will still need an SLI-capable motherboard to use this card. On a non-SLI motherboard, it will run as a single GeForce 6800 Ultra card.

Each of the GPUs gets only half the total bandwidth and memory of the board, so the 256-bit, 512 MB memory runs as 128-bit 256 MB memory dedicated to two individual GPUs—and hence is not as fast as a 256-bit, 512 MB memory should be. Hence theoretically, in high-bandwidth situations such as 16x AA and 16x AF, the GPUs should become severely memory bandwidth limited.

We tried to test if this was true. At 1,600 x 1,200 in *Doom 3*, *Half-Life 2* and *FarCry*, the frames per second were 122.9, 84.3 and 117.6 respectively. The 3DMark 03 and 3DMark 05 scores were 18547 and 8745 respectively. This card thus performs better than the GeForce 7800 GTX and a bit poorer than the GeForce 6800GT SLI solution in the 3DMark benchmarks, while in the gaming benchmarks it comes third, behind the GeForce 7800 GTX and the GeForce 6800GT SLI— even though this card has two GeForce 6800 Ultra chips onboard.

In a situation involving two GeForce 6800 Ultra cards in SLI configuration, this dual-GPU card will fade into obscurity. Considering the price of Rs 60,320, this card at this moment is not worth considering even if you happen to be the most hardcore of gamers.

Summing It All Up

The XFX video cards dominated the graphics cards comparison. We remember the time last year when XFX made its entry in our comparisons. It was the underdog, and though it showed promise, could not make it to the big league. This time round it took over the show and won four coveted awards, which serve as a benchmark for you, our readers.

None amongst the opposition could stand up to the gauntlet thrown by XFX. Solid build quality and extremely competitive prices made the cards sure-fire winners, and so, this year concludes with XFX and nVidia on top. ATi has a lot of catching up to do, and if the rumour mills are to be believed, the R600 core is what we will be watching out for.

The next time round when we test graphics cards, we will surely be seeing more of nVidia's SLI solutions, as prices are sure to plummet. ATi is also set to bring out its own implementation of multiple-graphics-cards-in-a-system solutions, known as Crossfire, which is touted to be even more flexible than nVidia's SLI: here, you will not be required to have two ATi cards of the exact same model, but you will be able to get away even if the two are of the same series.

Until then, drive rashly, and go on a killing spree (disclaimer: we're talking about computer games!!). ☒

bhaskar_banik@thinkdigit.com
jayesh_limeye@thinkdigit.com

Watch the telly like never before... with LG's new Wi-Fi enabled LCD TV

LG 15LW1R

Fed up of watching TV in your living room? Hate the messy cable wires when you move the telly in your bedroom? Well, bid your miseries goodbye with the new LG 15LW1R, a 15-inch LCD TV enabled with Wi-Fi.

It's screen is pretty light at just four kg and measures a mere 45 x 30 x 5.6 cm. It supports S Video, Composite Video and has a 16 millisecond response time—fairly fast for a TV. LG has lent it a really large 160-degree viewing angle. It also has in-built speakers which seem to be a bit low on power at three watts each, but then you can always use a pair of headphones and enjoy the audio!

All you need to do is connect every single video input (from the cable wire to your DVD set) to the base unit of the LCD TV, and set the base unit in any place that catches your fancy. This unit will then transmit all video feed to the screen using Wi-Fi up to an enormous 115 feet—you can freely move the screen within that area. Unless you live in a place that's miles away from civilisation, you can watch the TV in any location of your house! Now that's what we call portable home entertainment!

Imaging Sivalal S

My Cell Phone

Deepak Dhingra

In today's age of always-on connectivity, the cell phone has become as ubiquitous as the desktop computer in an office. So I decided to experiment and see what life would be like without my trusted mate. Here I'm sharing my 30-day tryst with cellular disconnect. I couldn't SMS or play a game anyway, so...

Day 1: Bound by habit

About to leave for work, I automatically reached for my cell phone lying on the table along with the car keys. Just then, though, I realised this was the day I was to start learning to live without it.

Day 2: Aah! Peace!

No telemarketers urging me to avail of fabulous offers on personal loans or credit cards I didn't need. No one calling to disturb me as I'm writing this! Even my wife can't call me now when I'm on my way back from work. It feels good, you know! Freedom! I could get used to this!

Day 5: Missing it already

Almost a week has passed, and I'm still getting used to not having to carry around my phone wherever I go, compact and light as it may be. To think I even used to carry it with me to the bathroom so as not to miss any important calls—I'm actually wondering how on earth I'm getting used to not having it!

Day 10: To buy or not to buy

It's Saturday and I'm in the local market. For the life of me, I can't remember whether it was cabbage or cauliflower I was supposed to get. No public phone nearby to call up the missus, so I buy both just to be safe.

Day 12: SMS Woes

Running late for office again... I hate Mondays! The alarm feature in the mobile was really useful. Called up the boss to inform him I'd be late, and realised that an SMS would have been a lot more convenient. Ah, my cell phone...

Day 15: MMS—a bane for celebs, a boon for the rest of us

It's a colleague's birthday at work, and it's time to cut the cake. How I wish I had my phone camera to capture his face being smothered with cake! Could have MMSed it straight off to his girlfriend. And it's oh so difficult to go get my digicam now!

Day 20: Where's my swiss army knife?

With all my numbers just a keystroke away on my cell phone, I've suddenly realised it's rather difficult to find a phone number now. Have to rely on the good old pocket diary—I hope I've written it where it is supposed to be. Now did I classify that by first name or last name?

Come to think of it, there was very little my cell phone couldn't do—from remembering phone numbers, reminding me about birthdays and tasks that needed to be done, and even entertaining me with games and music when I was bored. The GPRS I accessed at least gave me regular news updates. Am I missing out on life here?

Day 25: Stuck in a jam

Stuck in traffic and it's getting really late. No way to get a message home and spare them the anxiety... I'm sure they would be worried by now. Wonder if I can borrow a cell from the dude in the next car and call home...

Day 30: Back to civilisation

Well, it's been an interesting month. It's about time I restored my cell phone privileges. I know it can be a little troublesome at times, but the upside of carrying it along far exceeds the downside.

It's really something to be able to reach your loved ones wherever you (or they) may be. The first thing I do when I reach office is message my wife about my eventless drive to work. Did I hear a sigh of relief?

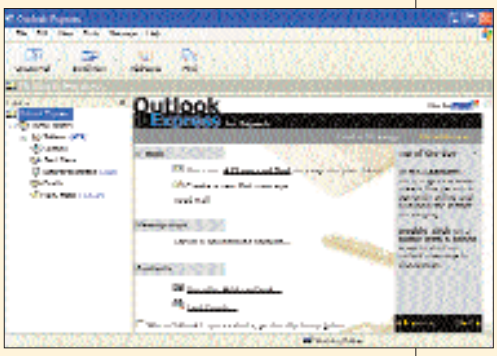
deepak_dhingra@thinkdigit.com

Photograph Sandeep Patil Imaging Sivalal S, Akhilesh Prasad

TAKE a CRACK

THIS MONTH'S CHALLENGE

Share Outlook Express across multiple versions of Windows in a multi-boot system

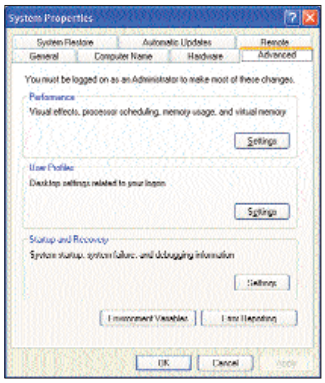


Many of us have multiple versions of Windows running on the same machine. Can you share all your Outlook Express data across these different Windows versions?
Write in with the subject 'Take a crack', and your postal address, to **takeacrack@thinkdigit.com** with your solution

LAST MONTH'S CHALLENGE

Make The Safe Mode Boot Option Appear Every Time Windows Starts Up

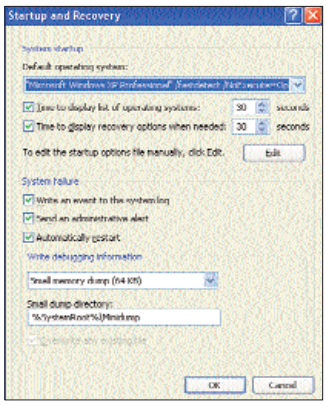
To make the safe mode boot option appear every time Windows starts up, use the following steps.
1. In Windows XP, right-click the 'My Computer' icon. Select 'Properties', and then select the 'Advanced' tab.
2. Under 'Startup and



Select the Advanced tab in System Properties

Recovery', click 'Settings'.
3. In the 'System Startup' section, click 'Edit'. The 'boot.ini' file will open in Notepad.
4. Save the file as 'boot_ini.bak' as a backup option in case something goes wrong.
5. Now in the boot.ini file, under [operating systems], locate the operating system entry that you want to boot into safe mode, for example, the second entry as below:

- [boot loader]
- timeout=30
- default=multi(0)disk(0)rdisk(0)partition(1)\WINDOWS
- [operating systems]



Startup and Recovery Options

- multi(0)disk(0)rdisk(0)partition(1)\WINDOWS="Windows XP Professional"
- /fastdetect
- multi(0)disk(0)rdisk(0)partition(3)\WINDOWS="Windows XP Professional
- Safeboot" /fastdetect

You can modify the entry in the second line by adding "Safeboot" after "Windows XP Professional" to distinguish between the two OSes.
6. In the second entry, after "/fastdetect", add the following line:

- /safemode:minimal /sos /bootlog /noguiboot

The [operating systems] section of 'boot.ini' file should now look like the following.

- [operating systems]
- multi(0)disk(0)rdisk(0)partition(1)\WINDOWS="Windows XP Professional"
- /fastdetect
- multi(0)disk(0)rdisk(0)partition(3)\WINDOWS="Windows XP Professional
- Safeboot" /fastdetect /safemode:minimal /sos /bootlog /noguiboot

7. The other Safe Mode options are as follows:
Safe mode with networking switch:

- /safemode:network /sos /bootlog /noguiboot

Safe mode with the command prompt switch:

- /safemode:minimal (alternateshell)/sos /bootlog /noguiboot

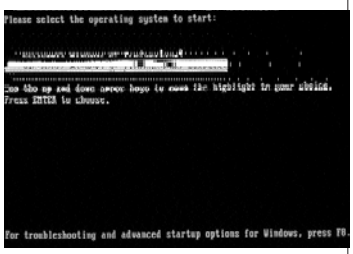
Enable VGA mode switch:

- /basevideo

Debugging mode switch:

- /debug

Here, we have used only the first mode—safe mode. A combination of switches may be used if required.
8. Save and close the file.
9. Click OK twice to exit



The boot menu shows the 'Safe Mode' boot option

System Properties.
10. Restart the computer and select "Windows XP Professional Safeboot" to boot into safe mode. (If something went wrong—like if you see an error message—replace 'boot.ini' with the 'boot_ini.bak' file.) ☒

This solution will also be put up on www.thinkdigit.com

Take a Crack and Win
Enterprise Application Architecture
By Joseph Moniz
Published by Shroff Pulishers & Distributors Pvt. Ltd.

LAST MONTH'S WINNER

Samit Attawar
Flat No. 9, Varundev,
Nr. Standard Chartered Bank,
Opp. Benneton Showroom,
Main Avenue, Linking Road,
Santacruz (W),
Mumbai 400054

Rules and Regulations

- Readers are requested to send in their answers by the 15th of the month of publication.
- Employees of Jasubhai Digital Media and their relatives are not permitted to participate in this contest.
- Readers are encouraged to send their replies by e-mail. Jasubhai Digital Media will not entertain any unsolicited communication.
- Jasubhai Digital Media is not responsible for any damage to your system that may be caused while you are trying to solve the problem.

64 An Online Cache Of LNG

72 Communicate Better

74 Digital Cameras Tested

Enhance

Microsoft To The Rescue

A better of understanding Microsoft.com can give you the edge you need to get ahead at work...

Bhaskar Banik

Ninety per cent of computer users worldwide start with Microsoft Windows installed on their computers. Most users today are actively involved with Microsoft products—using, developing or testing them.

Though Microsoft's software products are easily the most popular, most users also face issues with them on a regular basis. There are system crashes, application issues and of course bugs during coding. However, what most users are not aware of is the dedicated group of Microsoft Web sites that provide support for all its products.

Most users are also not aware that Microsoft is generous enough to offer resources to the public in general, irrespective of whether your software is pirated or not. They provide immense resources that can get you out of the stickiest of situations. This article will walk you through the Microsoft.com, and tell you about its support Web sites for both users and developers alike.

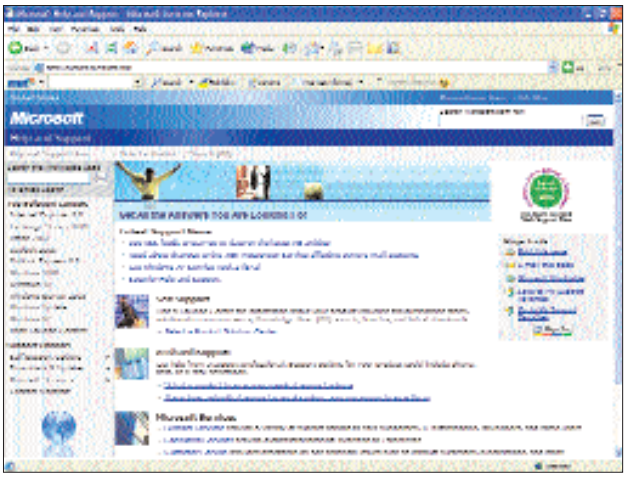
Microsoft Support

Most of us have seen the "Blue Screen of Death" at least once during the time that we have been using our computers, irrespective of the flavour of Windows used. Microsoft.com is the mainstay for all your support related queries that you have about your Operating System, (even the now archaic Windows 98).

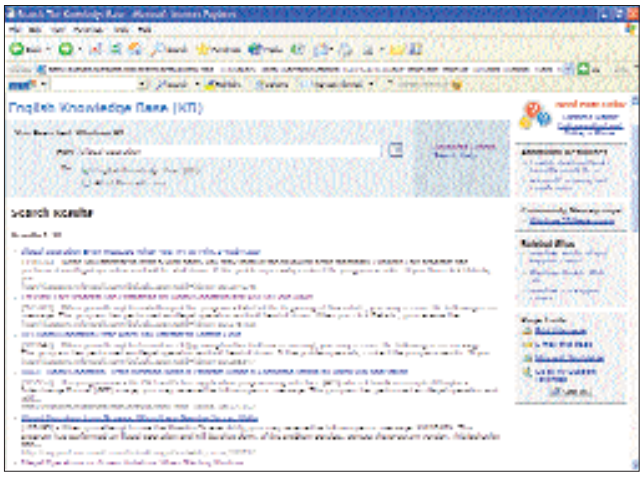
The Web site looks a tad cluttered, but don't feel intimidated, all you need is a little patience. Look for a heading called "Solution Centers" and click on it. Here you will find 'Solution Centers' for all Microsoft products, including Windows Media Player and the Xbox.

Let's consider a situation where you get an "Illegal Operation" error in Windows 98. To find a solution for this, you can either use Google, or you can visit the Microsoft Web site and paste these two keywords in the box called Search KB (Knowledge Base).

Imaging Akhilesh Prasad



Use the Microsoft Support site to find solutions

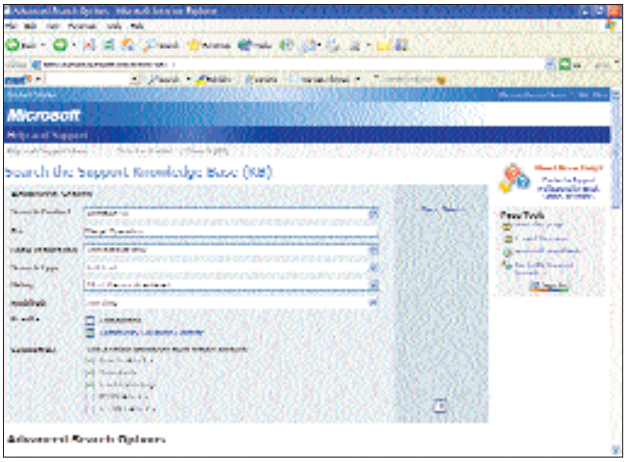


The Microsoft Knowledge Base has documented solutions for your use

Remember, whenever you get an error it is important to find the keywords present in that error. For instance, a "Fatal Exception Error" has the keywords "Fatal" and "Error" and using them to search the Knowledge Base will provide you with more valid and suitable results. Once you press **[Enter]** after typing in the keywords, you will find that you are presented with a long list of results.

Though you need to sift through the results, the solutions are most often bang on target.

We just used Windows 98 as an example, but you can search for solutions for everything that includes Microsoft Operating Systems, Office Products and Development tools.



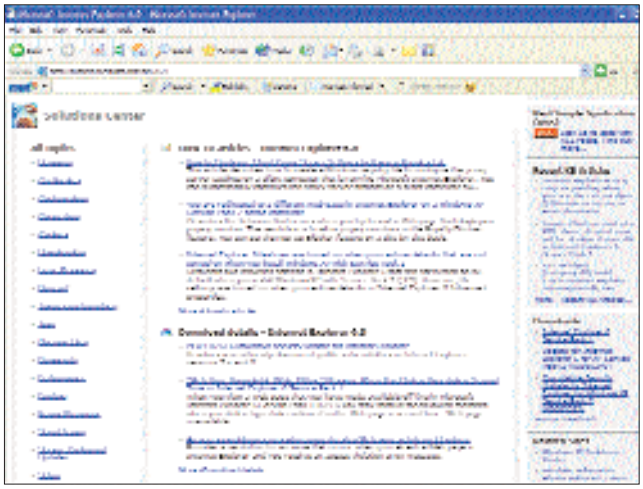
Search through the Knowledge Base for relevant results

Let's take a look at some of the other Solution Centers. A large number of Netizens seem to have trouble with Internet Explorer 6 the, let's check out Microsoft's IE6 Solution Center.

Right on the first page, you will notice that everything is arranged under separate headings. There are 'How-To' articles, downloads and updates for Internet Explorer, and of course, troubleshooting instructions. In the left hand pane, you will notice that there are different topics that are related to using Internet Explorer, while the right-hand pane contains information about other Microsoft related products and sites.

In short, this page is your one-stop resource shop to nurse your ailing IE back to good health, or to learn more about it. This Web page layout is the general pattern for most Solution Centers.

If you use Microsoft's products, you should visit the Microsoft Support Web site regularly for information and solutions to problems. Solution Centers are vast resources that will help you utilise Microsoft's software to its full potential, and only when you know your way around a software like a professional, will you truly 'enhance' your ability.



Everything you needed to know about Microsoft Internet Explorer 6

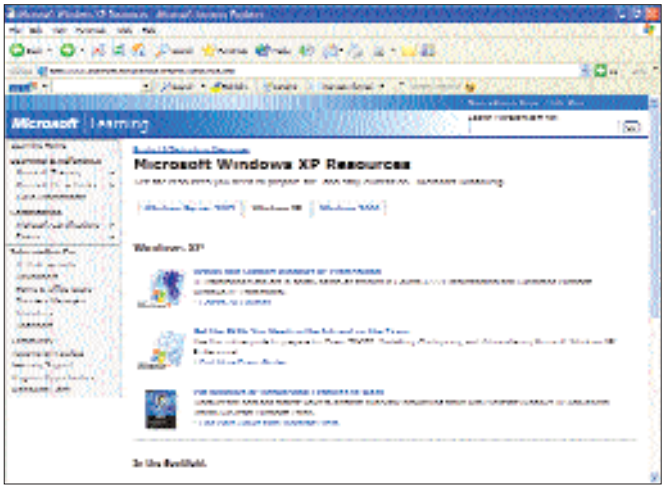
Microsoft Windows

To date, Microsoft Windows remains the Operating System of choice for the masses. Though most of us know our way around Windows, first time PC users are still overwhelmed when trying to use the software. However, 'Help' is just a button click away—"Press **[F1]** and all your questions will be answered", seems to be the Microsoft way.

Every level of users, from the beginners to the advanced will see various expensive books that are targeted at enhancing your Microsoft Windows skill-set, but none of them can top the exhilaration and sense of achievement of self-learning. Just visit **http://www.microsoft.com/windows** and choose the version of Windows that you want to know more about. The most

popular Operating System in use today is Windows XP, and if you want to know more about it visit **http://www.microsoft.com/learning/centers/windowsxp.asp**

Once the Web page loads, you will be surprised by the amount of information that you have access to. You have free access to the latest expert information in the Windows XP Expert Zone, plus technical information using the Windows XP Technical Resources. If you want more information regarding training, or want to hone your career prospects using Microsoft products as your weapon of choice, look at the Microsoft Exam Guides. This will let you know what exams you need to take for a particular career choice.



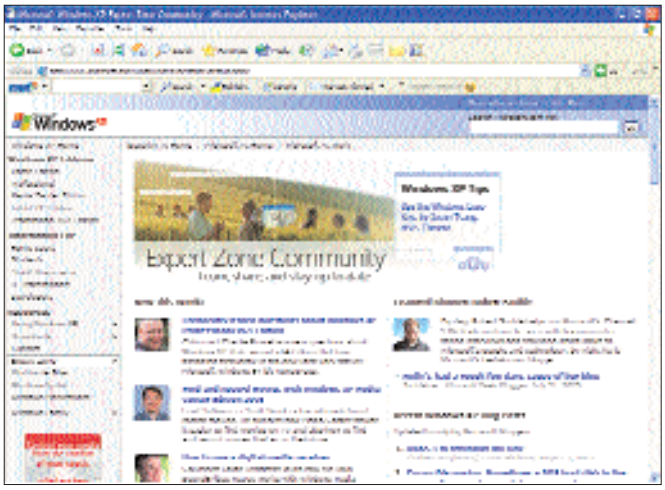
Some cool tutorials on Microsoft Windows XP

Informative FAQ's are also available for beginners and professionals alike to help you get a good perspective of what you need to do to get ahead in the rat race.

In the Windows XP Expert Zone, you can get information, insight and advice regarding everything about Windows. Top Windows specialists get together on the forums to talk about issues that users have with it. No, it will not bore you to death, provided you have a genuine desire to know Windows inside out.

Microsoft Office

The Microsoft (MS) Office Suite is the most used world-wide, with Word, Excel and PowerPoint being the most used Office applications. Though we have provided you with an entire Fast Track book on the subject, free with the July 2005 issue of *Digit*, you will find even more information at **http://office.microsoft.com/en-us/default.aspx**—the beauty of using the

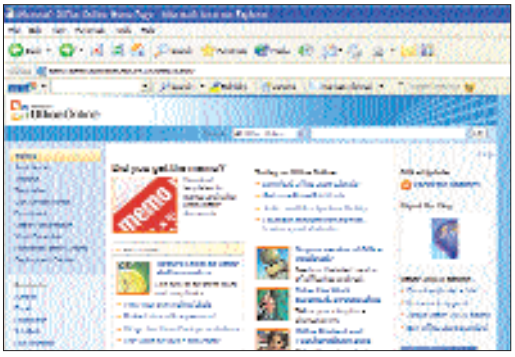


The Microsoft Windows XP Expert Zone

Web as a tool for providing knowledge resources, is that there are no limitations.

At the site mentioned above, you will get access to tons of information that will keep you engaged for hours, and help you understand how to get more out of your Microsoft Office applications.

There is a lot that you can do on this Web site: for instance, you can use the "Demos" feature of the Web site to learn Office skills in a jiffy. There are so many downloads for your Office suite, such as Clip Arts (our favourite), media, templates and more. In fact, there's so much available that you're likely to run out of hard disk space if you try to download them all!



The Microsoft Office home page

You can also suggest new Office online content by sending feedback to the brains at Microsoft, asking them to create more exciting content for you. Another popular resource here are the freely available update packages for all versions of MS Office. If you are using an older version of MS Office, you can also choose to download a trial version of the latest release and check out the new features.

A section called Work Essentials deals with making MS Office work for professionals the way they want it. There are other sections specifically dedicated to provide information to varied groups of professionals, from elementary school teachers to real estate agents and travel and tourism professionals. There is information for everyone, and all you need to do is assimilate it all to become an MS Office whiz.

Another very useful section is the Office Assistance section. This section deals with the utility part of Office, such as tips and tricks and guides that will help you work better with MS Office without any headaches. There is something for everyone in this section. For instance, you can get the low-down on how to use watermarks, or add music to your presentations, and even stuff like creating flowcharts in PowerPoint. If there's something you want to know about Office, you will find it here!

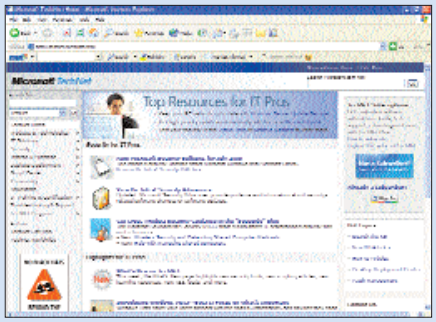
Another interesting section is the "Office Marketplace" where software from third-party software developers are showcased. These software cater to the wider range of needs by adding

Tips for using Microsoft Office better

Lesser-known Sites

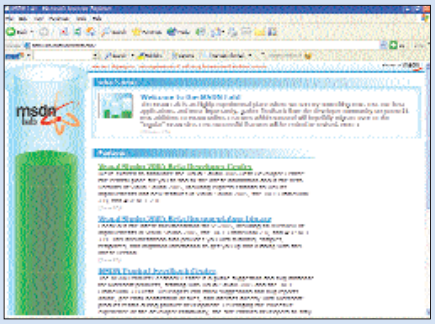
We have mentioned some of the most prominent Microsoft Web sites in the article, but there are a few more portals that might interest you as well.

Microsoft TechNet (http://technet.microsoft.com/)
This site deals with core Microsoft technologies, including product security, and posts security bulletins at regular intervals. This is the place where updates and patches (or information about them) for Windows make their first appearance.



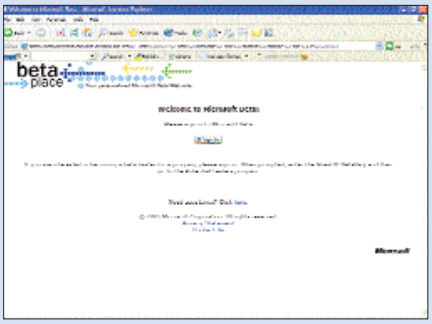
Microsoft TechNet

MSDN Lab (http://lab.msdn.microsoft.com/)
To put it in a nutshell, here's what the Web site has to say about itself: "The MSDN Lab is a highly experimental place where we can try something new, test out beta applications, and most importantly, gather feedback from the developer community on potential new additions to MSDN Online. Features which succeed will hopefully migrate over to the 'regular' MSDN site. Less successful features will be retired or revised."



MSDN Labs

Microsoft Beta Testing (https://beta.microsoft.com/)
Most people do not know about this Web site. It is meant for users that are interested in beta-testing Microsoft products. The site is a secure site (https), and you will need to register with Microsoft to access it. Whether your registration is accepted, however, is solely at the discretion of Microsoft.

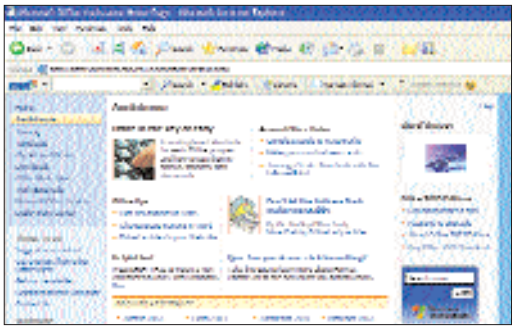


Microsoft Beta Website

features or tools not already included in the MS Office suite. These are generally available as shareware or freeware downloads.

Microsoft Downloads

Whether you want to update or patch your Microsoft operating system and office suite, or if you are a developer looking to get some Microsoft tools, you will find them all at Microsoft's dedicated Downloads site. Everything made by Microsoft, from DirectX to Windows Media Player is available for download at **http://www.microsoft.com/downloads/**



Help for Microsoft Office users

Get some cool third-party tools for Microsoft Office

You can choose from various categories including games, Office and home applications, updates, drivers, and so on. We searched for, and found, downloads for the latest version of DirectX, SQL Server 2005 books, the Service Packs for Windows 2000, and much more.

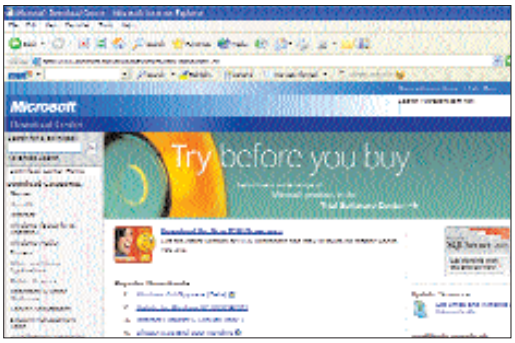
So far we have only looked at user resources, but there are also Microsoft resources for coders. Programmers that use Microsoft's Development Tools can also benefit from Microsoft's online resources.

Microsoft Developer Network

The Microsoft Development Network (MSDN) is a programmers Mecca, and every coder needs to pay **http://msdn.microsoft.com** a visit if he or she plans on a career as one.

This site is not for the average user, and, perhaps, should contain a sign that says, "Warning: geeky language ahead". The page layout is cluttered, as usual, as programmers have no time or need for beautiful and well designed Web pages.

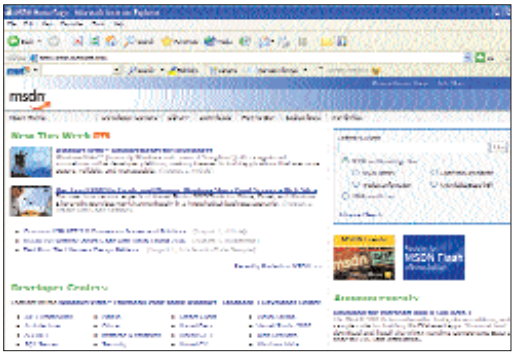
For the uninitiated, MSDN is the developer network that programmers that use Microsoft Development tools refer to for their programming needs. MSDN is available as a subscription, wherein you get exclusive information that adds



The Microsoft Download Center

value to the products that you are already using for development. As an MSDN member, you are also privy to previews, betas and first-looks at the latest versions of software.

MSDN now ships on DVDs, and contains content that is exclusive to it's members. Though the MSDN Web site is exhaustive, there is a lot of useful information available only on the DVD.



MSDN: A programmer's heaven

In no way do we imply that the Web site contains less critical information. For instance, if you are new to programming, you can head to the "Library" section to find content that will help you get started with programming, using illustrated examples.

You can visit the "Developer Community" to get more information from other developers working with the same tools as you. You can also watch Web casts and check for jobs at Microsoft in the "Training, Career and Events" section. In addition to all of this, there is a Download section that offers developer tools and resources such as code samples, SDK downloads and tools that integrate into other Microsoft products.

There is a special section dedicated to MSDN subscribers where they can download the latest tools that are not available publicly—for instance, the Windows Vista (formerly Longhorn) Beta 1 is only available as a download to MSDN subscribers. Developers and programmers should head off there and get a copy right now!

Whether you are a first time PC user or a seasoned programmer, there is a Microsoft Web site that can help you do more with your PC. If any of the sites mentioned in this article have helped you in any way, do write in and share your experience with us. ☒

bhaskar_banik@thinkdigit.com

An Online Cache Of LNG

A journalist took up the task of writing on all things LNG (Liquefied Natural Gas). He now has a commercially successful Web site and global clientele to his credit

Preethi Chamikutty

Depleting natural resources have made imperative the need for conservation. An equally pressing need is that of finding new sources of energy. With coal, petrol, diesel, LNG and other fuels becoming dearer every day, every nation is striving to find an oil well of its own.

These topics—petro-products, LNG, and so on—are, therefore, hot. A look at a Web site called LNGjournal.com reveals that there is also politics involved; there are debates; there are international agreements. There is a need amongst professionals in the field to gather the latest news and views, to gain insights into what is going on in the world as regards LNG, alternative energy sources, and so on.

There are relatively few people out there qualified and passionate enough to make informed judgments about what's going on. Kamlesh Trivedi is one of them.

Trivedi, basically a business reporter, decided that since he had the knowledge and the insights, he could actually make a living off what he knew. Thus began LNGWorldwide.com, floated in April 2004. It is one of the few dedicated Web sites on LNG.

The Beginnings

Trivedi has been a business reporter for more than 13 years now. A graduate of St. Xavier's college (Ahmedabad), he completed his masters in Economics from M S University of Baroda. Trivedi's first stint was with *The Financial Express*, where he dealt with corporate news and finance. After moving to *The Economic Times* in mid-1995, he started covering the energy sector.

"I realised that this sector had tremendous potential. Baroda houses the main office of the Gujarat State Electricity Board, and polymer production capacity in and around Baroda is very high. These factors increased my interest in the subject," recalls Trivedi.

His involvement with LNG deepened when he joined *Gulf News* as an energy correspondent in early 2003. This gave him the chance to be in the midst of the action. He travelled extensively in Oman, Iran, Kuwait, Qatar and other Middle-Eastern countries.

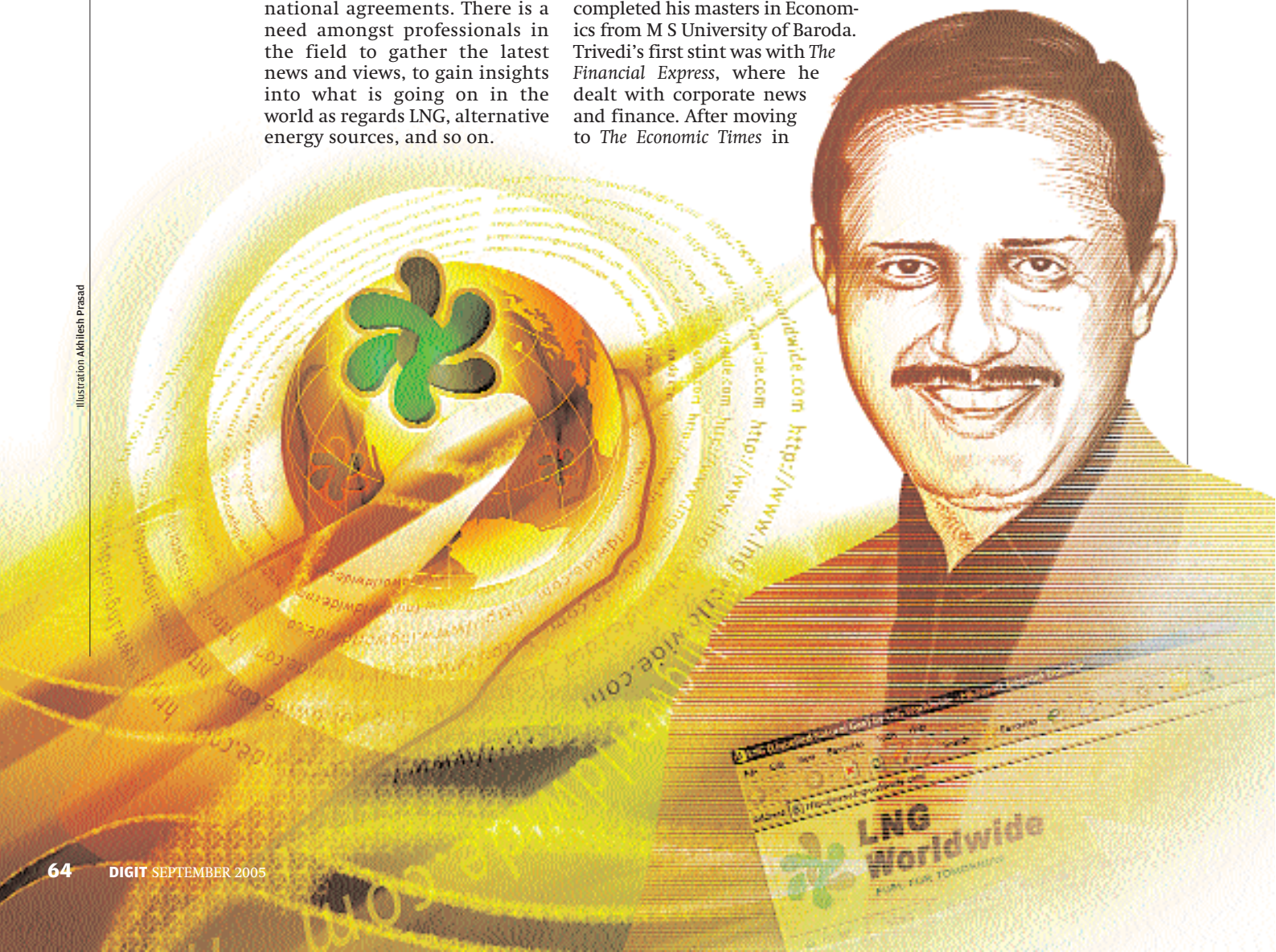


Illustration Akhilesh Prasad

The contacts he established here and the knowledge he gained laid the foundation for the setting up of LNGWorldwide.com.

Trivedi reflects, "I am passionate about the subject. Moreover, LNG holds a lot of promise for the future as well."

LNGWorldwide.com

LNGWorldwide.com is a dedicated portal for the global LNG industry. Apart from Trivedi, there are two professionals from the Middle East who have contributed substantially towards the site. The site offers weekly news round-ups, trade summaries, interviews with industry leaders, and information on LNG producers, LNG consumers, LNG marketers and other associated industries. There are also comprehensive analytical reports as well as summarised compilations on LNG.

This information is privileged, and is therefore available only to subscribers, who pay an annual subscription fee of $1,000 (Rs 43,500). Subscribers receive a monthly newsletter.

"I started LNGWorldwide.com once I had some time when I was in between jobs. But now it is something I love to do. It's an avenue for me to do what I want, in the way I want, *sans* restrictions," says Trivedi.

Growing Clientele

The four major oil companies in the world are Shell, ChevronTexaco, ExxonMobil and Total. These companies generally tie up with other companies at the local level in various countries.

Instances of such tie-ups include Shell Hajira, Persian LNG, and so on. Such are the companies likely to be interested in the information available at Trivedi's site.

Currently, LNGWorldwide.com's clients comprise five Indian public sector units dealing mostly in oil and energy, and one American client. Talks are in progress with two Indian private sector firms. The Nuclear Thermal Power Corporation (NTPC) and Petronet LNG Ltd are part of LNGWorldwide.com's clientele.

> I am passionate about the subject. Moreover, LNG holds a lot of promise for the future
>
> **Kamlesh Trivedi**
> LNGWorldwide.com

An official from NTPC says, "LNGWorldwide.com provides us with exhaustive information about recent developments in the LNG space. The newsletter gives detailed data on each country. After receiving information from them for a few months, we decided to subscribe.

"Our fuel management group makes the most use of the data we get from this Web site. It gives us a fair idea of the development opportunities in local and international markets and the feasibility of business expansion."

What's In Store

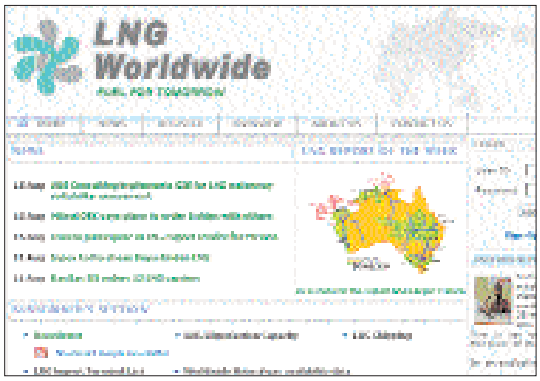
The worldwide natural gas market is growing fast. Trivedi says, "The worldwide market for natural gas is expected to increase by 200 per cent by the year 2010. There is a serious shortage of reliable information on the topic. With LNGWorldwide.com, we hope to bridge this gap." Trivedi also plans to start a portal that deals with natural gas in depth, not just LNG.

"Currently, I am the only one who writes the content. I need to build a team to help me in this endeavour. The problem is, there are few people well versed with the subject and who can also write about it."

Trivedi also hopes to tie up with international news agencies to help provide LNGWorldwide.com with first-hand and privileged information. Collaborating with banks and financial institutions to bring in funds is also on the cards. So is getting investors for the site to help him better serve his clientele.

Like we said earlier, Kamlesh Trivedi has capitalised on his knowledge by taking it to the Web. This goes to show that the Web is not just a place to showcase one's talent—it's also a place where if you've got something that's in demand, you can make a viable business out of it. ⊠

preethi_chamikutty@thinkdigit.com



LNGWorldwide.com is one of a very few Web sites on LNG

Gamespot.com

Hit CTRL+D if you are a hardcore gamer—your search for the definitive gaming site may have just ended

Preethi Chamikutty

News, reviews, mods, links and yes, games. Gamespot.com offers this as the bare minimum and any gaming aficionado can find his daily 'fix' of gaming dope right here. You could browse this site for hours and still come back the next day and discover something new.

Controls

True to the gamer's choice, this site is heavily infuenced with the colour 'black', and is peppered with bright coloured fonts for a truly psychedelic appearance. Other Web sites on gaming such as Gamespy.com or IGN.com come nowhere close to Gamespot.com's look-and-feel.

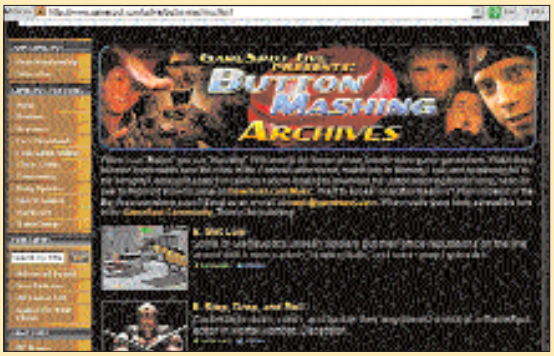
Despite this, the site remains clutter-free, thereby making surfing a breeze. The navigation menu on the left is extremely easy to access and offers links such as 'Join Gamespot.com', 'Find Games', 'Gamespot Features', 'Game Hubs' and more.

Play!

Gamespot.com is a good source for gamers to find information on new games and even see previews of upcoming games. Archives offer a detailed look at older games—some date back to a year. Games are broadly categorised under 'Action', 'Adventure', 'Simulation' and so on.

Daily fodder for the site (read news) borders on 'Breaking News' in most cases; otherwise, it's the usual 'top stories'. Gamespot.com is fairly comprehensive in its coverage and offers updates on PC news, Console news and even Industry news. Compared to the other gaming sites such as 3DGamers.com, Gamespot.com's coverage of news wins hands down. Score One!

Wanna know how a game plays on a console?



Compete with the Gamespot.com team here

What's a game site without cheat codes? Nothing. Thankfully, Gamespot.com claims to offer up to 141,713 cheat codes to various games—both, old and new. We believe them (who's counting them all?). And yes, the usual downloads, forums and updates are also scattered across the site.

But there's a lot more to Gamespot.com than news, cheat codes and games. It also keeps up with the latest developments and reviews of the Xbox, PS2, Nintendo DS and even PSP games.

The site is replete with tips on what works best with each console. The tips have been effectively highlighted, and are easy to understand.

Among the other popular attractions is a feature called 'Button Mashing', where a general user is pitted against the Gamespot.com team in a game of the user's choice. Another feature, 'On The Spot' offers videos, interviews and general discussions about games.

An interesting aspect is the 'Beta Test Center'—it offers readers an opportunity to report bugs and playability issues when a game is still under production.

The site also has an active forum that provides users with various options to personalise their presence on the forum. It helps them create their profiles; they can have their own blog in the 'Journal', keep a tab on the games they have looked up in the past, form groups of their own and generally, chill out!

The site is also your shopping window for games. Finally, it's all as simple as this: find, read, understand and if you like, you buy! They have it all figured out!

Mods And Expansion Packs!

If there's one thing users at Gamespot.com must see, it would undoubtedly be Gamespotting. Trainspotting, you say? No... Gamespotting. It's a blog maintained by the site's editors and lends insights that are otherwise 'edited' in a review or a news item.

Now that makes one wonder why not put that up in the review itself? Anyway. Well, gamehead, what are you waiting for? You know the URL... ■

preethi_chamikutty@thinkdigit.com

The all encompassing home page of Gamespot.com

Watch live videos of games 'On The Spot'

Digital Cameras

Facing trouble with your digicam? Whether it's making the digicam work in sync with the PC or fungus on the lens, read on for help

Ram Mohan Rao

Your Digital Camera Does Not Get Detected

Problem: Sometimes, in Windows XP or other operating systems, your digital camera does not get detected as a device attached to the computer.

Solution: Here's a brief list of what you can do to troubleshoot this situation.

- Under Windows XP, a digicam should get detected quite easily, but with older OSes, you should connect the device and install the drivers and software exactly in the order specified in the manual. Uninstall the software and drivers and try doing it again, paying attention to the order of events.

- Make sure your OS supports the devices—some devices are incompatible with certain OSes. For example, the JDC15 digicam does not work with Windows 95 or 2000.

- First switch on the camera before plugging it into the USB port on the PC. Failing that, Windows may be unable to properly recognise the device or drivers. If the camera is not turned on before plugging it in, the camera might be detected as an Unknown Device.

- Turn the camera off and then on again.

- Try setting the camera to 'image viewing mode'.

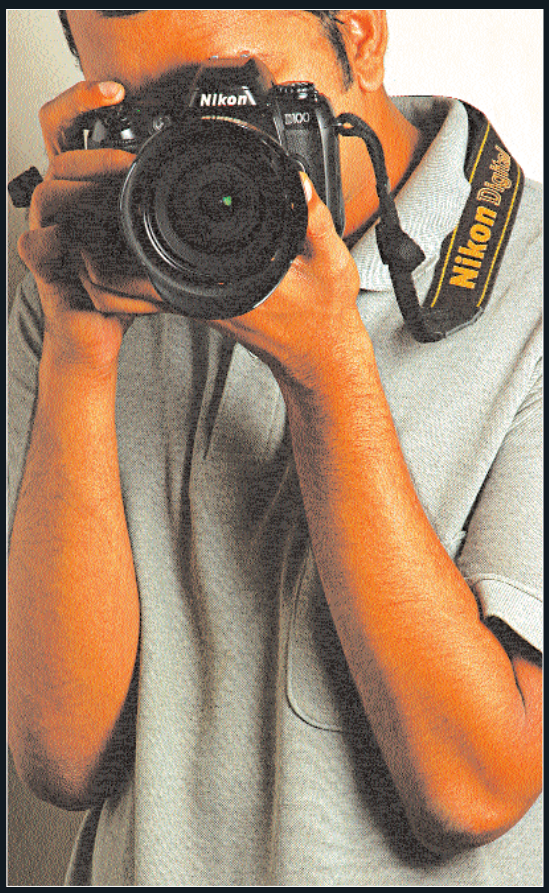
- Check the USB cable connection.

- Check that the USB port is working fine. Attach something else to the port, such as a mouse or a scanner.

- Connect the camera to a different computer and check.

- Reinstall the WIA or TWAIN drivers for the camera. If you don't have them on your computer, you can probably download them off the manufacturer's Web site.

- Finally, try this: if the camera can record images to a removable memory card, use a memory card reader to transfer the files to the computer. If you can't transfer the images from a memory card, the memory card may be the cause of the problem. If you can transfer the images from a memory card, it may be the camera that is at fault.



The correct way to hold a camera: arms tucked in, with one hand supporting the camera while you click with the other

Images Are Blurred

Problem: Images can turn out blurred for a variety of reasons. These include inaccurate focus, camera shake, or a dirty lens.

Solution:

- Inaccurate focus: This may happen if you don't hold the shutter release button halfway down until the picture is taken. Or, you may be focusing and then changing your distance from the subject without refocusing. Change these habits. Use the 'Focus Lock' feature if your camera has it, and then ensure that your distance from the subject does not change from the time you lock focus until you take the image.

If you're using an auto-focus system, you may have trouble focusing when there is not much colour difference between the foreground and background; in front of or behind bars, such as a cage or railing; on shiny and opaque surfaces; and on subjects photographed through glass.

- Camera shake: Shaky hands are bad news when you're using a digital camera. Practise holding the camera steady in a relaxed but controlled posture, and press the shutter release with steady, gentle pressure.

Your elbows must be held firmly against your body, to ensure that the hand holding the camera is steady. However, a posture that is too rigid may also cause your body and the camera to shake.

For exposures slower than 1/30th of a second, use a tripod, or set the camera on a sturdy surface. In addition, use a cable release or remote control to avoid shaking the

DIGIT SEPTEMBER 2005 70

Shaky hands here. Can you even make out the street lights?

Shaky hands can give a poor motion-like effect to your pics

camera during exposure.

- A dirty lens: Blow and brush off the debris with an air brush. Then clean the lens using a photographic microfibre cloth or a photo cleaning solution and photo lens wipes.

Lens Fungus

Problem: If you live in a humid region—which is the case in most of India, especially in the rainy season—moisture trapped inside the camera provides a good environment for fungus to grow, causing cloudiness and vein-like patterns to form in the lens.

Solution: Don't leave your camera in a camera bag when you're not out shooting. Store it in a cool, dry place. Keep your camera and lens in an airtight container with some bags of silica gel-these will absorb moisture. Make sure to change the bags regularly.

If you go out shooting in the cold, wrap your camera in a plastic bag before bringing it into a warm room to prevent moisture from accumulating inside the camera.

If fungus has already formed, you'll have to get your lens cleaned. Leaving your lens in the sun won't solve the problem. Send the camera to the manufacturer or a repair shop for a professional cleaning.

You Deleted Your Photos By Mistake!

Problem: This is self-explanatory—you pressed the 'delete' button on your digicam by mistake, and now all your photos seem to have disappeared.

Solution: You may indeed be able to recover your photos. It's not 100 per cent guaranteed, but it could be that the photos just aren't getting detected, and are still there on the memory card.

You can try and use various software to recover the pictures. But remember not to format the card or take any more pictures before you recover the images you seem to have lost.

Software to recover images from a memory card include the following:

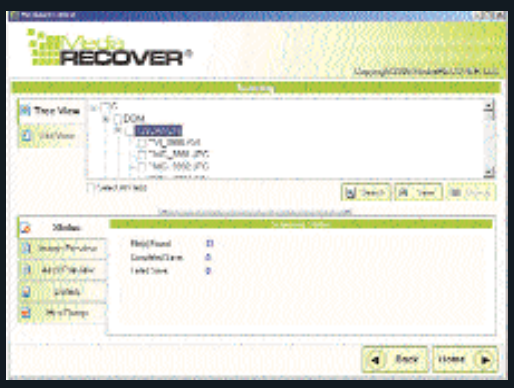
- Zero Assumption Digital Image Recovery 1.2
- MediaRecover 3.0
- MediaSaver 3.0.7.1
- Digital Photo Recovery 2.0.3

Your Batteries Don't Last Long Enough

Problem: Of course, battery life varies depending on the make and model of your camera, but you know you have a problem when even brand-new batteries afford just a few shots.

Solution: Use the correct AA cells (if your camera uses these). Alkaline AA cells last much less than rechargeable NiMH cells or disposable lithium cells. If you find a specialty store which gives you cells of different mAh ratings, look for higher mAh ratings. As an indicator, 1850 mAh is good. Look for 1850 mAh or higher.

However, if your camera works on a Li-ion cell and was installed with a rechargeable one when you bought it, and it's still giving short battery life even on a full charge, there's something wrong with either the cell or the camera. Take them back to the store.



MediaRecover has an easy interface that helps you recover lost pictures from your memory card

There Are Dark Specks On Your Photos

Problem: You might notice that after you changed your SLR's lens, your photos have brownish or blackish specks on them. This could happen if dust settled on the sensor when you changed the lens.

Solution: As always, there are two solutions: give the camera for professional cleaning, or clean the sensor yourself. Of course, you need to remember that if you're cleaning it yourself, you've got to be very, very careful. This is because sensors are covered by protective glass—and if you end up scratching the glass, your warranty will not help.

You can try and use cleaners made specifically for cleaning sensors. Companies such as Photographic Solutions make them. Also, Kodak sells a sensor-cleaning kit while providing detailed instructions on how to clean Kodak sensors.

If you've decided to clean the sensor yourself, get the camera into sensor-cleaning mode so the sensor is exposed. You'll need to check your manual for how to do this with your model. Remove the lens. Use a bulb blower to blow dust off the sensor—and while you're doing this, make sure you hold the camera such that the dust falls away and doesn't settle back on the sensor.

Carefully swab the surface of the sensor's protective glass.

Once you're done, click a picture of a white wall, for example. If you haven't done the cleaning perfectly, some dark specks will still show up.

VisibleDust (www.visibledust.com) has products to help you safely clean your digicam's sensor. L. L. Rue (www.rue.com/cleaning.html) has cleaning aids for all kinds of photographic equipment, and they also feature a large bulb blower. Check it out! ⊠

ram_mohan@thinkdigit.com

Imaging **Pradip Ingale**

COMMUNICATE BETTER

A PC can do so much more for your office than just run accounting software—combined with an MFD, it can take care of all your communication requirements!

Robert Sovereign-Smith

The PC has come a long way over the past decade or so. What started out as a glorified calculating machine and word processor has now taken over our lives.

And in no place is this more evident than at work. A lot of SoHo setups will not be able to function if you take away the computers. So many business opportunities have sprung up just because of the PC!

But we know all this...

What we don't realise is that some uses of the PC have been forgotten. Modems, for instance, are no longer used by most businesses in cities, thanks to increasing broadband penetration—indeed, Internet connections are mainly LAN-based now.

Convergence, also, has played a role in reducing the number of peripherals you had to connect just to accomplish simple tasks such as printing or scanning documents. Enter the Multi-Functional Device—earlier the jack of all trades, and now master of all too!

Communication

Whether it is businesses exchanging e-mails across the world, or the person sitting next to you at work sending you a joke about the boss in the form of an IM message, it's all communication.

The largest library in the universe, the Internet, is based on communication; the lowest common denominator of technology, e-mail, is also based on communication.

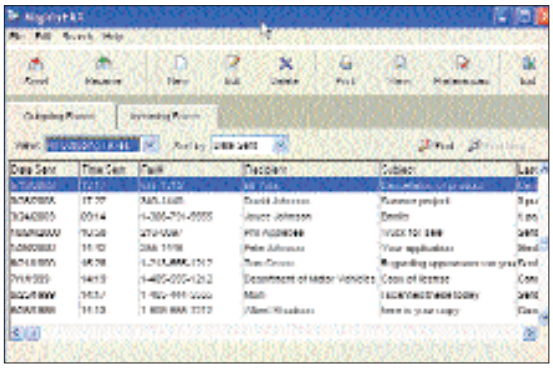
Again, we know this...

The PC is powerful, and combined with a worthy tool such as a basic MFD, can do a lot more than we allow it to. Most of us never use our PCs to their full potential. For example, we still have fax machines in our offices, which print a lot of junk faxes on expensive fax paper. Why?

Fax

Though there may be hundreds of similar or even better software available today, WinFax was once the most popular fax software. In the time of modems, not too long ago, WinFax saved us many a pretty penny on fax paper and even fax machines!

Modems were then a must, and 56.6k voice, data and fax modems were the in thing. Since you needed a phone line and modem to connect to the Internet anyway, spending a little



MightyFax, available at www.rkssoftware.com, is a simple and easy-to-use fax software alternative

extra and buying WinFax, and getting fax 'send' and 'receive' capability as well, just seemed logical. In fact, since it was made by Symantec, the makers of Norton Antivirus, it gained the trust of many people in India!

The beautiful part was that you could preview faxes on your computer screen and choose which ones to print and which to delete. Zero paper wastage, and no important documents being printed on that horrid fax paper.

There are probably many of you who have cursed the fax paper's short lifespan—pull out a file of faxes after about six months, and all you see is blank paper! WinFax let you use your little inkjet printer to print faxes for storage—this was probably its biggest selling point back then.

Today, however, we have fax-enabled MFDs. These MFDs print faxes on normal paper, and are even capable of storing up to a couple of hundred faxes when paper runs out. In addition, some MFDs allow you to fax a document right from within the document's software itself, so even the prints of faxes to be sent are not needed—this means more paper saving!

Those SoHo offices that do not want to buy an MFD, but still want a fax alternative and the savings it brings, can opt for software such as WinFax.

However, even though it does the job perfectly, keep in mind that the last release of WinFax was in 2001, so you might want to try other products as well.

If you run Windows XP, you can use its inbuilt fax capability—all you need is a modem and a printer. You can download a detailed 'how to' at **http://snipurl.com/61p4**.

Voice Communication

Most modems available for the past five years have been voice, data and fax capable. If you use a headphone and microphone combination headset, your modem can eliminate the need for phone extensions altogether.

Though it sounds easier to just give everyone a phone, you will have to spend money on buying an EPABX that has voice-mail and other advanced features built-in. Majority of the people would rather invest in, or have already bought, a very basic EPABX system that only allows you to transfer calls.

Using your PC, you can set up a call centre-style phone and voicemail system—and that too for free!

There are plenty of fax and voice-mail or answering machine software available for free for Windows. The advantage of software-based answering machines is that each person can specify individual actions for incoming calls. Some software also allow you to ignore calls from specific numbers, and are even customisable to the extent of having different voice-mail announcements for different groups of numbers.

So, say you've stored phone book entries in the software, and have a caller ID. It may sound stupid to use the standard "Leave your name and number" message for recognised users. Instead, you can use a different message—such as "Hi, I'm busy right now, but I have your number and will call you back ASAP!"

The options are numerous, and the beauty of the system is its customisability on a per-user basis. So each user can record his or her voice-mail message and have individual-specific rules.

Software such as CallCenter (www.v3fax.com) allow you to add voice-mail and an answering machine to your basic phone setup, so you never miss another call again, and also have customised voice-mail messages for each employee

WinFax Pro is a Symantec product, and was once the most popular Fax software for Voice/Fax/Data modems

And of course, all this works out a lot cheaper than buying an advanced EPABX that costs over a lakh (and is not as customisable).

Sure, there are some drawbacks, such as having to keep the system on in order to use the phone extension, but most of us have our computers booted up as long as we're in office anyway!

Some may even prefer to put existing modems to use in conjunction with the standard phone to get the best of both worlds—when you receive a call, use the phone; when you're away, the computer answers the call using voice-mail!

Other Communication

Your PC is already equipped to use other forms of communication, such as e-mail and video conferencing. Services such as Skype (**www.skype.com**) and efax (**www.efax.com**) have made it easy to make long-distance phone calls and faxes respectively, for cheap, using the Internet.

If your business needs you to frequently make calls or send faxes abroad, you should seriously consider using these services. Even individuals can save a lot using such services.

For SoHo businesses, costs are always important, and each penny saved is a penny earned. Yet you have to keep up the impression of being a professional company, no matter how small your business is.

We hope some of the hints provided here can help you do just that, and we look forward to hearing about your personal experiences. Write in and let us know! ☒

robert_smith@thinkdigit.com

Tips & Tricks

SECRETS THAT KEEP YOU AHEAD IN THE RACE

GENERAL TIPS

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30 MINUTES EXPERT

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Firefox

Speed Up Firefox's Initial Load Time

On Windows XP, Firefox could be slow to load initially. You might be able to speed this up a bit by using XP's inbuilt prefetcher. Simply right-click the shortcut icon you use to start Firefox. Add the text **"/Prefetch:1"** to the end of the line in the 'target' field. Then, the whole line should look something like this: **"C:\Program Files\Mozilla Firefox\firefox.exe" /Prefetch:1**

The Config File

You can change many more things about Firefox than what is provided in **Tools > Options**. Simply type in **"about:config"** in the address bar, and a whole bunch of configuration settings appear. Right-clicking on a value's name will allow you to modify the value by pressing 'Modify' and entering the new value. Some entries in the configuration file are intuitive; some are not.

Just look at the entire set and you'll be able to decide for yourself what you feel like changing. For example, scroll down to **"browser.download.manager.closeWhenDone"**, and it'll be pretty obvious to you what that setting does. Similarly, **"browser.formfill.enable"** is another setting whose purpose you can guess.

Tune Up Firefox

Go to **http://www.totalidea.com/freestuff4.htm** to download FireTune, a free tune-up and tweaking utility for Firefox. From the page: "According to your computer's speed and Internet connection speed, FireTune will optimise several internal settings of Firefox for better performance. FireTune does not modify the Firefox executable... Everything can be undone easily provided you saved your original profile configuration file."

Control Where Links Open

You can control where new links are opened from other applications. For example, say you're browsing a page using Firefox, and you switch to your mail program. There's a new mail with a link to a page your friend told you to check out. When you click it, it will open in either a new window, a new tab or the most recent tab or window. To choose between these three, go to **Tools > Options > Advanced > Tabbed Browsing**. Under 'Open links from other applications in:', choose between 'a new window', 'a new tab in the most recent window', and 'the most recent tab/window'.

Opening Firefox In Safe Mode

If something goes wrong with a new extension or theme you installed, you can start Firefox in Safe Mode. In Safe Mode, Firefox does not load any extensions, and comes up with the default theme. This way you can uninstall the offending extension or theme and get things back to normal.

To enter safe mode, go to **Start > Run**, and type in the following: **"C:\Program Files\MozillaFirefox\firefox.exe" -safe-mode**

Of course, if Firefox is installed in a different folder, enter the path to that folder instead.

How To Not Save Form Information

As you browse, Firefox keeps a history of what you enter in fields such as search forms. If you don't want it to do this, go to **Tools > Options**, and click the 'Privacy' icon on the left. Go to 'Saved Form Information' and deselect the box that says 'Save information I enter in Web page forms and the Search bar'.

Smart Keywords

Smart Keywords are an easy way to search Web sites right from the location bar. Say you visit IMDb (The Internet Movie Database) often to look up things. You go to imdb.com and click in the search box and enter whatever you're searching for, and click 'Search'. There's a simpler way to do this in Firefox.

With an IMDB Smart Keyword, you can type "imdb Star Wars" into Firefox's Location bar and hit [**Enter**], and be taken right to the result.

Go to whatever site you want to add a Smart Keyword for, then go to the search box. Right-click in the search box and click 'Add a Keyword for this Search...' The 'Add Bookmark' dialog will appear. Give the bookmark a name, e.g. 'IMDB Search', and create a keyword, e.g. 'imdb'. File the bookmark wherever you want. Click 'OK'.

Now, enter "imdb Star Wars" into the location bar and press [**Enter**] and see what happens!

You can repeat these steps for any searches you use—Amazon, your corporate phonebook, an online thesaurus—any site at all!

Add New Engines

Up in the top right corner of Firefox, there's

a handy search box that puts search engines at your fingertips. When you download Firefox, some searches such as Google, Yahoo!, and eBay are included, and you can easily add more. There are hundreds of search engines available. Some of the most popular are A9, AltaVista, AskJeeves, IMDb, Merriam-Webster, and Wikipedia.

To add a search engine, click on the current icon in the box, then click 'Add Engines...'. You'll be taken to Mozilla's page for available engine plug-ins. Simply follow the directions on the page, and your engine will get added instantly for you to use.

Add Google Desktop Search To The Engine Box

Go to **www.amwmedia.com/?nId=17**. If you use Google Desktop Search (GDS), you'll want the plug-in available here. It allows you to add GDS as one of the search engines. Additionally, this little plug-in will help you get around the current 10 results per page that GDS imposes. Simply follow the directions on the page to install GDS into the search box.

Remove Engines From The Engine Box

Go to **"C:\Program Files\Mozilla Firefox\searchplugins"** (or wherever Firefox is installed). Each engine you have installed has two files—a .src file and either a .png or a .gif file. All you have to do is delete the two files for the engine you wish to remove—for example, google.src and google.gif. Close and restart Firefox for the change to take effect.

The Google Toolbar For Firefox

Google recently released their Google Toolbar for Firefox, and if you're a fan of Google and use its services for almost everything, you may want to install it. Not only does the toolbar allow you to search through Google's various search engines, it also comes with auto-fill functions, Froogle searches, dictionary and stock referencing, the page rank feature, and more. The toolbar even integrates with Blogger, and offers some basic translation features.

Get it at **http://toolbar.google.com/firefox/**.

Installation is simple, and it works like any other Firefox extension.

Live Bookmarks

Live Bookmarks in Firefox let you view RSS news and blog headlines in the bookmarks toolbar or bookmarks menu. With one glance, you can quickly see the latest headlines from your favourite sites. You can go directly to the articles that interest you, which saves you time.

A site is enabled for Live Bookmarks when you see an orange RSS icon on the bottom-right corner of the browser. Clicking on the icon and selecting an RSS feed will bring up the 'Add Bookmark' dialog. Select 'OK' and you will see Live Bookmarks with the rest of your bookmarks. You may find it especially convenient to save Live Bookmarks in your Bookmarks Toolbar folder.

Add Live Bookmarks Manually

Some sites don't tell Firefox that they support Live Bookmarks, even though they actually do. If you know the URL of a site's RSS feed (the URL will end with .rdf or .xml), you can manually create a Live Bookmark for the site. Go to the Bookmarks menu and select 'Manage Bookmarks'. Under the 'File' Menu, select 'New Livemark'. Create a name for the Livemark and add the URL. New articles from that site will appear as Live Bookmarks in Firefox.

A Firefox Tab-Switching Shortcut

Did you know there's a keyboard shortcut to switch between tabs in Firefox? Simply type in **[Ctrl] + [#]**, where **[#]** is the tab number (so it's 1 for the first tab, 2 for the second, and so on). This only works with up to nine tabs, but that's probably enough.

Opera

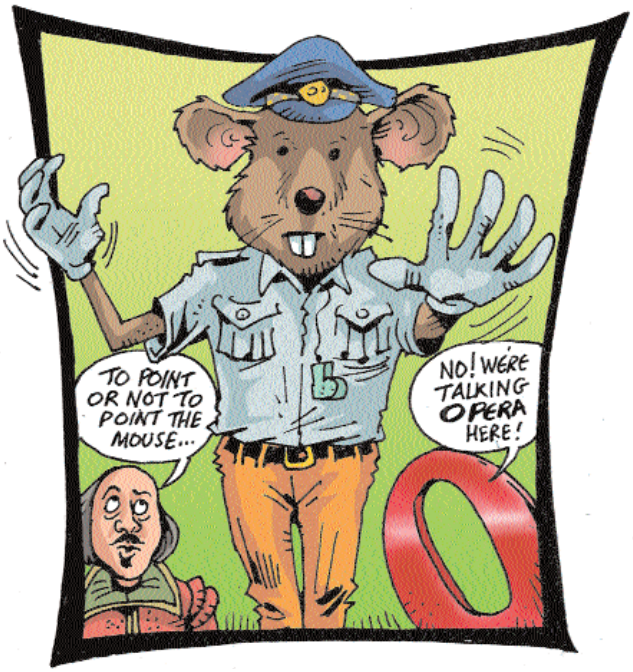
Scripting Errors

If you get errors on Web pages, or it they're displayed in a weird way, it could be a scripting error. Opera uses Netscape features by default; it doesn't run JScript but JavaScript instead.

You can force Opera to behave like Internet Explorer while viewing Web sites. Press **[F12]** to get the Quick Preferences pop-up and select 'Identify as Internet Explorer'.

The Autofill feature

Opera allows you to fill up standard information such as your name, address, phone number, e-mail address, etc. without having to type these in every time. Open **Tools > Preferences**, click on the 'Wand' tab, and fill out all the details. To enter the information into a text box on a Web page, right-click the text box, go to 'Insert Personal', and choose the text you want to input.



Always Start Browsing With The Same Set Of Pages

If you always start browsing with the same two or three pages, there is a way of always opening Opera so that those pages open automatically. Right-click the Opera desktop shortcut and select 'Properties'. After the text already there, which simply tells the computer where Opera can be found, just add your pages, thus: **"http://www.thinkdigit.com" "http://www.thinkdigit.com/forum" "www.cnn.com" "www.opera.com"**—making sure to leave a space between each page address, and making sure each page is enclosed by double quotes, not single quotes.

Clear The Cache With A Single Click

To insert an item in the right-click menu to delete the contents of the cache, find and open the 'menu.ini' file and search for the following lines in the **[Browser File Menu]** section:

Submenu, 162000, Quick Preferences Menu = Show popup menu, "Quick Preferences Menu"
Item, 50394 = Show preferences, -1

Here, add the line:

Item, 54493 = Delete private data

Save and close the menu.ini file.

Enable Scrollbar Colours

To enable colours in the scrollbars, add the following lines to opera6.ini in your profile folder:

[User Prefs]
Enable Scrollbar Colors=1

30 Minutes Expert

Creating An Animated GIF Screen Saver For Your Cell Phone

With the increased usage of feature-rich cell phones, customisation has become top priority. Here's how you can distinguish your cell phone from all others

Varun Dubey

With cell phones getting smarter, it has never been easier to customise them to match your persona or mood. And the wallpaper and screensaver you use—whether on a PC or a cell phone—are a statement about yourself. Here's a little workshop that tells you how to customise your cell phone's screensaver or wallpaper.

What you need

You need a phone with a colour screen, and it should allow you to set a GIF file as a wallpaper or screensaver. You can find out about this from the manual. You also need a software with basic photo editing capabilities, for example IrfanView, which is what we are using here. You can download it from **www.irfanview.com**.

The other software you'll need is one that can string individual GIFs together to create the animation. For this, we will be using a freeware called Windows GIF Animator, which can be downloaded from **www.idp.net/freesoft/gif_anim.asp**

STEP 1 Assimilating The Images

Take a stack of pictures you'd like to include in the animated GIF (henceforth AGIF) file. Since most digital cameras take pictures in the JPEG format, you'll need to convert them to GIF.

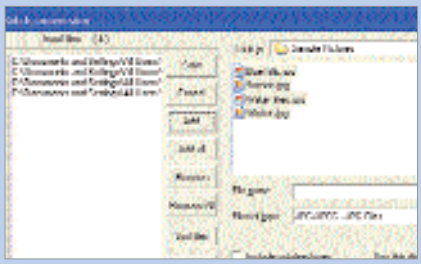
STEP 2 Converting The Images

Open IrfanView and go to **File > Batch Conversion**. Here, in the conversion window, navigate to the folder where your images are, and select the ones you'd like to use. Make sure that at the bottom of the dialog, 'Batch Conversion' has been selected as the job description.

Set an output directory, and set the output format to GIF. Now just click 'Start'.

STEP 3 Cropping The Images

You'll now need to resize the images to fit your phone's screen. Find out the screen size from the manufacturer's Web site or from the manual. But anyway, most phones have a square screen with a resolution of 128 x 128, and that's what we'll be assuming here.



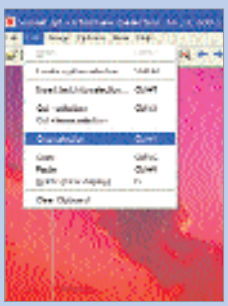
Batch convert images to save time

Open your converted images one by one in IrfanView. Left-click each picture, holding and dragging the cursor to create a box. If you hover at the edges, you'll get the option of resizing it. The objective is to get a square cut-out from the image. Most cameras do not take square photos, so you'll have to do this yourself. Take as big a cut-out as you'd like, as long as it's square.

Once you're satisfied with the results, go to **Edit > Crop** Selection, and your image will get cropped to the desired size. Do this with all the images and save them as GIFs.

If all your images are centred on the same point, and you want to create an animation, you can use IrfanView to batch-crop all the images. Go to **File > Batch Conversion/ Rename...** and there, check 'Use advanced options'. Then press 'Set advanced options'. In the 'Set for all images' dialog that comes up, under 'CROP', you can specify what you want to do.

Of course, if you do not have a square screen at all, you'll need to modify the selection area accordingly.



Select only what you want using the Crop option

STEP 4 Resizing The Images

Once you have all the images cropped to the desired dimensions, you need to scale them to fit the phone.

Doing this is pretty easy with IrfanView—simply open the Batch Conversion window as explained before, and select all the cropped images for resizing.

Check 'Use advanced options', and under 'Set advanced options', check the box called 'RESIZE'. Select 'Set both sides to', and set the sizes to whatever your screen resolution is—in our case, 128 x 128 pixels.

Click 'Preserve aspect ratio', and check 'Use Resample function' if you are particular about image quality. Click OK. We can now proceed with creating the AGIF.

STEP 5 Creating The Animation

Open Microsoft GIF Animator and click 'Open'. Navigate to your images folder, and add one of them. Once you've added the first one, simply keep clicking 'Add' until you've added them all.

STEP 6 The Effects And Settings

You can give individual time intervals to the images by selecting the image and clicking the image tab on the right. If you want to apply the same effects to all images, click the button on top, so you can edit the properties just once with them getting applied to your animation throughout.

Under the 'Animations' tab, you can also set the number of times you want the animation to loop.

Once you're satisfied, save the file. Upload it to your phone using Bluetooth, infrared or a data cable) and set it as your wallpaper or screensaver. Show it off to all your friends! ⊠

varun_dubey@thinkdigit.com

Use the same settings for all images

Bring Up The Main Menu By Pressing A Key

To have the main menu (File, Edit, View, and so on) accessible through a single key rather than at the top of the browser: in opera6.ini, under User Prefs, type in:
Show Menu = 0
Then edit input.ini:
[Application]
F10 = Show popup menu, "Browser Menu Bar"
This will bring up the menu with **[F10]**.

Make A URL Accessible With Two Clicks

Say you want to add an item to the right-click menu that will open **www.thinkdigit.com/forum**. In menu.ini, under **[document popup menu]**, type in:
Go to page, "http://www.thinkdigit.com /forum"

Easy Page Navigation

In the toolbar.ini file, add the following lines to the **[Document Toolbar]** section:
Button2, "Top"=Go to start, , , , "View to""
Button3, "End"="Go to end, , , , "View from""
This will give you an easy way to scroll to the bottom or top of a page.

Load Multiple URLs From A Text File

If you right-click on the Opera icon and go to Properties, the 'Target' line reads something like **"C:\Program Files\Opera8\ opera.exe"**.
You need to change this by adding whatever URLs you want to open, so that it reads something like
"C:\Program Files\ Opera7.20.3nnn\opera.exe" http://www.opera.com http://www.google.com

If you save this line as a batch file (opera.bat), you've set up a shortcut to the desktop that just needs to be double-clicked.

Mouse Gestures

Because of the sheer number of mouse gestures available in Opera, they may take some time getting used to, but will greatly enhance your browsing experience once you're used to them.

Here's a sampler of what you can do with the mouse in Opera.

- To go to the previous page: hold right button and click left button OR Hold right button and move the mouse left
- To go to the next page: hold left button and click right button OR Hold right button and move the mouse right
- Fast forward (Go to the end of the list of pages visited): Hold right button, move the mouse right then up OR Hold right button and [Shift], move the mouse right
- Rewind (Go back to the first page visited): Hold right button, move the mouse left then down OR Hold right button and [Shift], move the mouse left
- Go to home page: double-click in an empty page
- Reload page: hold right button, move the mouse up then down
- Stop loading: hold right button and move mouse up
- Restore or maximise page: hold right button, move the mouse up then right
- Minimise page: hold right button, move the mouse down then left
- Close page: hold right button, move the mouse down then right OR Hold right button, move the mouse right-left-right
- Open link in a new page: move mouse pointer to link and hold right button, then move down
- Open link in a new page in the background: move mouse pointer to link and hold right button, move down then up
- Zoom in and out: hold **[Ctrl]**, roll mouse wheel up or down
- Restore default zoom: hold **[Ctrl]**, click mouse wheel
- Move back and forth in page history: hold **[Shift]**, roll mouse wheel up or down
- Cycle through open pages: hold right button, roll mouse wheel up or down
- Open a blank page: hold right button, move the mouse down

Dragging And Dropping

Dragging a link to the bookmarks panel or a toolbar saves it as a bookmark.

Dragging a bookmark to the workspace or Web page area opens the bookmark.

Tabs can be rearranged by dragging them on the page bar.

Notes can be dragged into e-mail messages for automatic pasting.

Drag a download link to the transfers panel to start downloading.

Keyboard Shortcuts

Copy selected text to the 'Notes' panel: **[Ctrl] + [Shift] + [C]**
- Copy text in clipboard to the 'Notes' panel: **[Ctrl] + [Shift] + [V]**
- Save page address as new bookmark: **[Ctrl] + [T]**
- Save as new bookmark in active bookmark folder: **[Ctrl] + [Shift] + [T]**
- Reload page: **[Ctrl] + [R]** OR **[F5]**
- Reload selected frame: **[Alt] + [F5]** OR **[Ctrl] + [Shift] + [R]**
- Reload all open pages: **[Ctrl] + [F5]** OR **[Ctrl] + [Alt] + [R]**
- Go to next page in history: **[X]** OR **[Ctrl] + [Right Arrow]** OR **[Alt] + [Right Arrow]**
- Go to previous page in history: **[Z]** OR **[Backspace]** OR **[Ctrl] + [Left Arrow]** OR **[Alt] + [Left Arrow]**
- Rewind (Go to the first page visited): **[Shift] + [Z]**
- Fast Forward (Go to the end of the history list): **[Space]** OR **[Shift] + [X]** OR **[Shift] + [Backspace]**
- Load and display all images: **[I]**
- Toggle loading of images: **[Shift] + [I]**
- Full Screen: **[F11]**
- Close active application window: **[Ctrl] + [Shift] + [W]** OR **[Alt] + [F4]**
- Close all open pages: **[Ctrl] + [Alt] + [W]**
- Close all open pages except the active one: **[Ctrl] + [Shift] + [Alt] + [W]**
- Undo closing of page: **[Ctrl] + [Alt] + [Z]**

Bet You Didn't Know

Some Shortcuts
If you copy a Web address to the clipboard, just press **[Ctrl] + [D]**, with the Opera window in focus, to go to the address.

You can press **[Ctrl] + [Tab]** to cycle through your open pages (tabs).

Close the active tab by pressing **[Ctrl] + [W].**
Press **[Shift]** while clicking to open a link or bookmark in a new page.

If you press **[Ctrl] + [Shift]** and click a link it will open in a background tab.

- Switch to next page on page bar: **[1]** OR **[Ctrl] + [F6]**
- Switch to previous page on page bar: **[2]** OR **[Ctrl] + [Shift] + [F6]**
- Activate panels for keyboard navigation: [F7]
- Open the 'Search' panel: **[Ctrl] + [1]**
- Open 'Bookmarks' panel: **[Ctrl] + [2]**
- Open 'Mail' panel: **[Ctrl] + [3]**
- Open 'Contacts' panel: **[Ctrl] + [4]**
- Open 'Chat' panel: **[Ctrl] + [5]**
- Open 'Notes' panel: **[Ctrl] + [6]**
- Open 'Transfers' panel: **[Ctrl] + [7]**
- Open 'History' panel: **[Ctrl] + [8]**
- Open 'Links' panel: **[Ctrl] + [9]**
- Open 'Windows' panel: **[Ctrl] + [0]**
- Close Opera: **[Ctrl] + [Q]**
- Hide Opera: **[Ctrl] + [H]**

Eudora

Access Your Gmail In Eudora

You may want to access your Gmail mails in Eudora, or send mails through your Gmail account from Eudora. To do this, you'll first need to enable POP access in Gmail. Here's how: first, choose 'Settings' from the top Gmail navigation bar. Select the 'Forwarding and POP' tab. Make sure that either 'Enable POP for all mail' or 'Enable POP only for mail

30 Minutes Expert

Building A Web Page Using NoteTab Pro

Learn about one of the easiest ways to build Web sites—both, for beginners and experts alike...

Varun Dubey

If you are trying to learn HTML, or are new to building Web pages, we have just the thing for you! In fact, even if you find HTML easy enough to do it in your sleep, you should still go through this workshop—the software we're talking about here will let you update your pages so quickly that you'll need to work while you're awake as well!

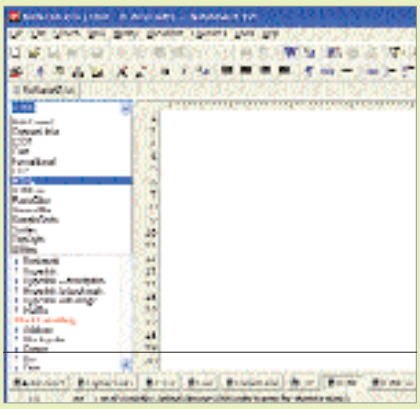
The options this software offers are so many, a full book could be dedicated to it. Here, we'll walk you through some of the features and leave you to explore and play with the software yourself.

What you need

The software you need is called NoteTab Pro. It can be downloaded from **www.notetab.com**. You can try it free for 30 days, after which it costs $19.95 (Rs 870).

STEP 1 Easy Interface

Once you start the software, you will be presented with an interface that looks like a cross between Microsoft Word, Opera and Explorer. You have formatting buttons on the top, the various options (such as HTML, CSS etc.) at the bottom, and what's more, you can open multiple files in different tabs just like Firefox—the best of all worlds!

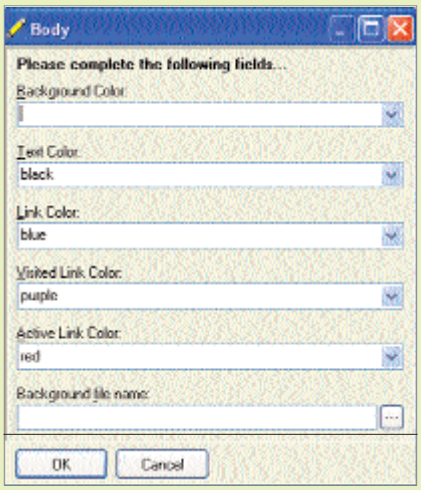


NoteTab's Default Screen

STEP 2 Writing The Code

To create HTML, select 'HTML' from the drop-down menu on the left, or from one of the tabs at the bottom. The options and commands in the left pane will change accordingly.

To start creating a Web page, click on 'New Web Page' on the left, and

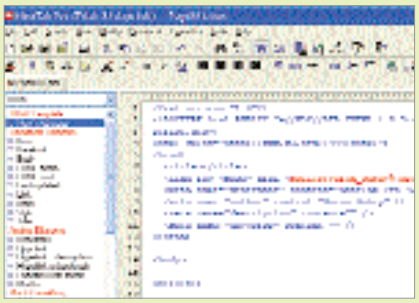


Set the text and link properties using this window

you'll be presented with a template wizard that will let you select the basic properties of the page—such as the title, description, keywords, etc. Once you're done with that, you will be presented with another window that will allow you to set things such as the background colour, text colour, link colours and more. You can even include a background image.

STEP 3 Creating Content

On closing the window, you return to the code screen where a part of the code is highlighted as "Type Content Here". In that area, you can put whatever you want to appear on the page, and



Type the page content in the highlighted area

it will conform to the formatting done in the previous windows.

There is even a spell-checker coupled with a dictionary to ensure you don't have any misspelled words going out to the world!

STEP 4 Other Options

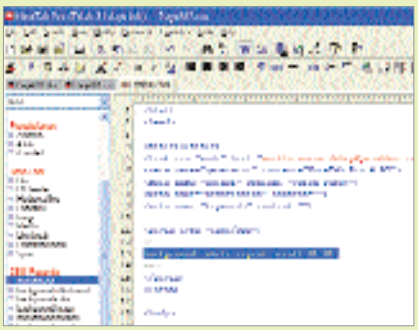
If all you want is a basic Web page, you are all set, since your page is already set up. You can view it in a browser by pressing [F8].

You may, however, want to include tables, image place holders, anchors, etc. For all these, you simply need to click on the left pane, and a wizard will open. This will guide you through the process as before.

The wizards are pretty exhaustive, and very rarely will you require any further tweaking.

STEP 5 CSS

As your skills develop, you'll realise it is downright silly to give every image or text line individual formatting, especially if most of them have to be similarly



Create your style sheet using the wizards in the left pane

formatted. The rescuer here would be CSS (Cascading Style Sheets).

These are basically sheets that have 'classes', where each class represents a specific kind of formatting—for example, font type, font size, font colour, link colour, etc.—and all you need to do is include the style sheet referrer in the HTML page and use the classes before text. This, you will realise, will cut down your page size by at least half if not more!

You can have two kinds of style sheets—embedded and external.

The external style sheet is something you will create as a separate file and then link it to your Web page. An embedded style sheet is, as the name goes, embedded in the Web page, and this software will let you create one with a wizard as usual. It's highly effective and accurate; however, you do need to have some degree of coding knowledge for this.

Simply click on the CSS tab at the bottom, and then on the left pane, click on 'New Webpage', and then on 'Embedded Style'.

If you already have a page open, simply click on CSS, and then on 'Embedded style' to add it to your page. To add various properties, simply click on them on the left and then follow the wizard yet again—and you'll be done in no time flat.

STEP 6 Uploading Your Web pages

Once you're finished with the various settings, text and the style sheet implementations, it's time to upload your page for the world to see it. NoteTab Pro will let you upload the file from within the program. You simply need to configure the FTP settings.

Click the 'FTP' tab at the bottom, and then on 'Server Setup'.

Again, you will be presented with a window asking you for the various settings for your server. Enter these settings and you're on your way to uploading your Web pages—but this is where we hit upon a snag in the software.

Note that you're provided with the server settings when you sign up for Web space, or if you are hosting it on a free server such as Geocities, the settings would probably be in the confirmatory email they send you. In its free avatar, Geocities does not support FTP.

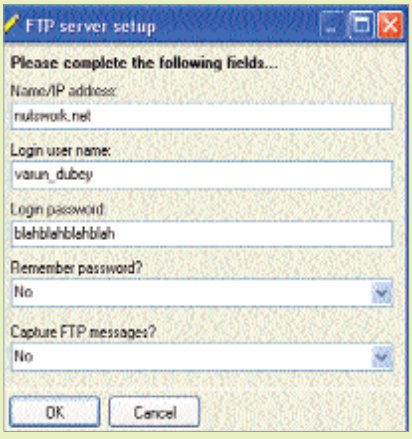
When we clicked on 'Upload', we were presented with a wizard as before, but at the bottom where we were supposed to enter the files to be uploaded, we just got a blank text box expecting us to type in each file name! This is a serious shortcoming in an otherwise brilliant piece of software.

Apart from the glitch in the FTP aspect, this software will let you do almost all kinds of HTML coding including CSS, and is an extremely powerful tool even if you swear by Dreamweaver.

NoteTab Pro is lightning fast, and produces excellent results with just a few clicks.

If you want to learn while you make Web pages, this is the software that will let you do it!

Of course, there are tons of other features—find them for yourselves right away!



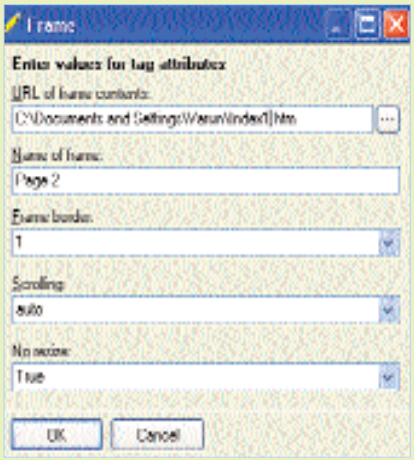
You upload using the inbuilt FTP program, you need to enter the file names manually

STEP 7 Adding Images

Adding images takes a single click, which gets you to the now familiar options menu where you can specify the alignment, borders, spacing as well as an alternate text.

STEP 8 Frames

Although we do not recommend the use of frames in your Web site, due to compatibility issues across browsers. However, if you choose to use frames, this software will help you tremendously. You can create frames at the click of a button, and the options available are amazing. You can create an iFrame (a frame containing dynamic content) or even specify what the browser should display when it does not support frames.



Create Frames using NoteTab Pro

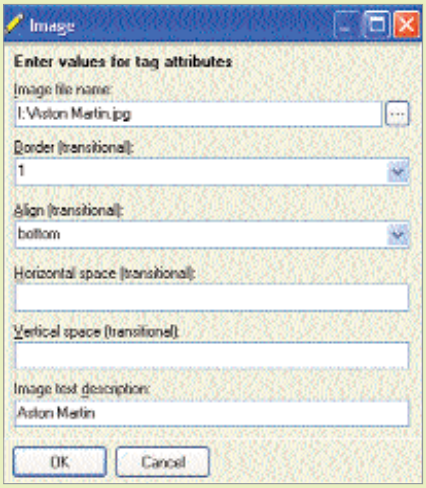
STEP 9 Creating Forms

If you would like to get feedback or conduct a survey, the best solution is to use a form.

This software excels in this regard, and the drop down menus take away the need for coding knowledge—just pick and choose whatever is required.

You can configure the Input type, the default text in the box as well as the name of the box (very important in form submission)

It will also let you change the input type from a box to a radio button, or even a check box! All with a couple of clicks,



Embedding images into a web page was never so easy

STEP 10 HTML Cleanup

What's more, if you mess up with the code, the software can fix it automatically. There is a single click option called "Clean Up HTML" which cleans up any un-ended or orphan, and empty or redundant tags, which ensures better compatibility across browsers.

Apart from the glitch in the FTP aspect, this software will let you do almost all kinds of HTML coding including CSS, and is an extremely powerful tool even if you swear by Dreamweaver. NoteTab Pro is lightning fast, and produces excellent results with just a few clicks. If you want to learn while you make Web pages, this is the software that will let you do it! ☒

varun_dubey@thinkdigit.com

that arrives from now on' is checked. (Choose 'Enable POP for all mail' if you want to download mail previously received at your Gmail account, or select 'Enable POP only for mail that arrives from now on'.) Select the action you want applied to mail after you have downloaded it to your e-mail client under 'When messages are accessed with POP'. Finally, click 'Save Changes'.

Now that you're done with the Gmail settings, it's time to configure Eudora to send and receive mail through Gmail. Select **Tools > Personalities** from the menu in Eudora. Right-click in the 'personalities' window and select 'New...' from the context menu. Choose 'Skip directly to advanced account setup', then click 'Finish'. Type in **"Gmail"** under 'Personality Name:'. Type your name under 'Real Name:'. Type your Gmail address under 'E-mail Address:'. Type your full Gmail address again under 'User Name:'. Type **"smtp.gmail.com"** under 'SMTP Server:'. Make sure 'Required, Alternate Port' is selected under 'Secure Sockets when Sending'.

Go to the Incoming Mail tab. Type **"pop.gmail.com"** under 'Server:'. Make sure 'POP' is selected under 'Configuration:'. Make sure 'Required, Alternate Port' is the 'Secure Sockets when Receiving' choice. Click OK.

Add An Animation To Your Signature

To add an animation to your signature, you first need to know how to create a new signature in Eudora. Here's how: select **Tools > Signatures** from the Eudora menu. Right-click anywhere inside the signature window. Select 'New...' from the context menu. Enter the name of the new signature. Click 'OK'. Type in your signature text, and select **File > Save**.

Now, to animate your signature, you'll need to use an animated GIF. First, create a new signature. Type your signature text. Make sure you use some HTML formatting in it somewhere so Eudora adds the necessary HTML code. It's enough to boldface a few characters. (You can remove the formatting later.) Hit [**Ctrl**] + [**S**]. Find and open your Eudora folder in Windows Explorer. Go to the Sigs directory. Double-click the (signature_name).txt file, where 'signature_name' is whatever name you gave your signature. Edit the file to include ****, where you want to place the image. (Make sure **"{path to your animated gif}"** points to the animated gif and follows this format: **"file:///C:/Documents and Settings/..."**.

Save the text file. Try the new signature. Don't be alarmed if the animation disappears shortly after showing up in the signature. It will display for the recipient.

Do Complex Searches

Eudora provides a whole lot of search criteria for mail. If you explore the first drop-down menu in the 'Find Messages' dialog, you will see criteria from 'Age' to 'Priority' and from 'Attachment Name' to 'Personality'. For more complex searches, you can try and combine two or more criteria by clicking on the 'More' button, and selecting either 'Match All' or 'Match Any'.

Using this, you can construct searches combining up to five criteria.

Clear The Ads Cache

Sometimes, Eudora for Windows in sponsored mode may complain that it isn't getting ads. To correct this, you can try clearing Eudora's ad cache.

Eudora keeps the ads in a directory called 'Ads' in the 'Eudora' folder. First, close Eudora. Then go to your 'Eudora' folder. Open the 'EudPriv' folder there, and then the 'Ads' folder. Delete all files in the 'Ads' folder. Finally, restart Eudora—the problem should have vanished.

Customise Eudora Message Labels

Eudora has a great feature called Message Labels that lets you quickly assign a colour and a label to messages. By default, these labels are called 'Label 1' through to 'Label 7'.

You'll probably associate more with something like "to do" than with "Label 1", and you can change the Eudora labels to suit your needs. To customise the message labels in Eudora, select **Tools > Options...** from the menu. Go to the 'Labels' category. Type in the desired name of the label in the entry field. Then click on the coloured box to open a colour selection dialog where you can assign any colour to your label.

Empty Trash Upon Exit

To have Eudora empty the trash when you exit the application, go to **Tools > Options**, then to the 'Miscellaneous' category. Make sure 'Empty Trash when exiting' is checked, and click 'OK'. Keep in mind that all messages in the trash will be deleted and purged—and therefore, permanently lost—whenever you exit Eudora!

Identify Your Eudora Folder

You probably will need to know, at some point or other, where Eudora stores your mails. Here's how to find the folder: on Windows 2000 and XP, go to **Start > Run**. Type in **"%appdata%\Qualcomm\Eudora"** (without the quotes). Hit [**Enter**] and you'll be taken to your Eudora folder.

If that doesn't work, search for 'eudora.ini' on your computer. If you get only one result, the folder containing 'eudora.ini' is your Eudora folder. If there are multiple folders containing 'eudora.ini', you'll have to open them all to identify 'your' Eudora folder. Look for .mbx files and .fol folders that match your setup of mailboxes in Eudora.

Insert Recipients Quickly

If you have added the people (or lists) you send e-mails to most often to the Recipient List in Eudora, you can use one of the fastest ways to address a message. Using the mouse, you can add recipients to mails, forwards and replies easily and quickly from the Eudora Recipient List. To insert recipients quickly and comfortably using the mouse

in Eudora, start with a new message, forward, or reply. Click in the To:, Cc: or Bcc: field to put the cursor in it. Click with the right mouse button. Select **Insert Recipient > [recipient]** from the context menu that comes up.

Make A Filter From A Message

Filters that automatically sort incoming mail are very useful, and they're best set up from existing messages in Eudora. To create an incoming mail filter from an existing message in Eudora, first highlight the message in the mailbox. Select **Special > Make Filter** from the menu. Enter details as you see fit. You can filter on the sender (it's best to look for the e-mail address only), any recipient or (part of) the subject.

By default, Eudora suggests you create a new mailbox named after the sender that the filter will move all mail to in the future, but you can also have it transfer messages to any existing mailbox (to select it, click the 'In' button), or delete them automatically. Finally, click 'Create Filter'.

Thunderbird

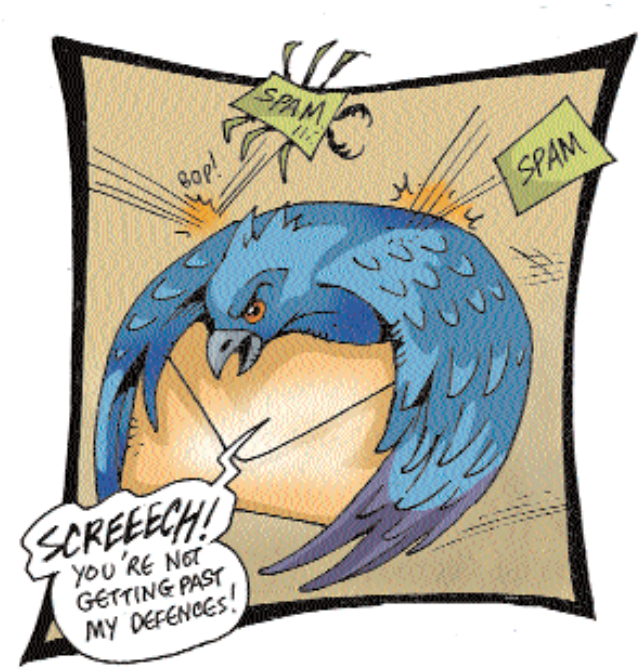
Adding A Background Image

A white background all the time for your e-mails may become boring. To add a background image to a message in Thunderbird, first create a new message. Select **Options > Format > Auto-Detect** from the message's menu. Click in the message body. Select **Format > Page Colors and Background...** from the menu. Click 'Choose File...' under 'Background Image:'. Select the desired file and click Open. Click OK.

Add OpenPGP E-mail Security

Plaintext e-mails are like postcards. Everybody can read what you send and receive. Cryptography is the solution, and ensures that only the intended recipient can decipher your message. Thunderbird comes with great inbuilt support for S/MIME. But OpenPGP is the rivalling standard, and you can add support for it easily.

There's something called Enigmail out there, which works with Mozilla Thunderbird, Netscape and Mozilla, and supports both PGP and GnuPG as its encryption backend—



providing comfortable message security. Enigmail is easy to use, and works transparently and with per-account settings. It doesn't interfere with, but complements Mozilla's S/MIME support.

The latest version is 0.92.0, which works with Thunderbird 1.0.x. Visit **http://enigmail.mozdev.org/download.html** to download and install it.

Compose Mail From The Address Book

To compose a message from the Address Book in Thunderbird, select **Window > Address Book** from the menu. Highlight the entry you want to compose a message to, and simply press [**Ctrl**] + [**M**].

Create A Filter From An Existing Message

Filters that move all mail from a certain sender to a special folder are extremely useful—to have the really important and the not-so-important e-mails sorted out right away and automatically—and in Thunderbird, they are extremely easy to create, too. To create a filter from an existing message, open the message either in the preview pane or in its own window. Click on the sender's name or e-mail address. (In either case the thing to click is the highlighted text following '**From:**'.) Select 'Create Filter from Message...' from the menu. Select your desired action under 'Perform this action:'. Click OK.

As an alternative to using the sender's context menu, you can select **Message > Create Filter** from **Message...** in the Thunderbird menu.

Create A Mailing List

Using Cc: or Bcc: is usually OK, but using a mailing list is easier and more elegant. Thunderbird includes support for simple mailing lists. To set up a mailing list in Thunderbird, select **Window > Address Book**. Click on 'New List'. Specify which address book the list should be added to. Give the mailing list a Name, Description and Nickname. Start adding addresses by typing them in the list one at a time. Close the dialog and click OK.

Export Contacts From The Thunderbird Address Book

Thunderbird makes it easy to export your address book to a format that most, if not all, other e-mail programs can understand. To export contacts from the Thunderbird Address Book, select **Window > Address Book**. Highlight the desired address book in the Address Books list. (If you are not sure which to select, choose Personal Address Book.) Select **Tools > Export...** from the menu. Make sure 'Comma Separated (*.csv)' is set under 'Format:'. Choose a location and filename, and click 'Save'.

Train The Spam Filter

Thunderbird, as well as Netscape and Mozilla, have great spam filters. The Bayesian spam filter in Thunderbird identifies spam by calculating for each incoming message how likely it is junk. These calculations are based on how you have classified previous messages.

This means Thunderbird can make a very good guess on what your spam and your good mail looks like. It also means that you have to train the spam filter a bit so it can get an idea what you perceive to be spam.

To train the spam filter in Thunderbird, open a message you want to classify as junk and click the 'Junk' toolbar button. Alternatively, click in the 'Junk Status' column in the message list. Either action will toggle the junk status of the message. You can use it to mark junk not yet recognized by Thunderbird, but you can (and should!) also use it to reclassify mail that has been wrongly labelled spam.

Once you find the spam filter classifies mail satisfactorily, you can have it move spam to a special folder automatically. ⊠

Q&A

Your Questions, Our Answers

Too Much RAM?

Q I have a P IV computer that I bought in 2002. My problem is that all of a sudden, my PC displays a blue screen and it restarts by itself. I don't know what to do. Recently, I installed a 128 SDRAM module on top of the existing 128 MB SDRAM module. Is the problem due to the RAM?

Tenzin Sherab, Manali

A There is a good chance that the new RAM module you installed is faulty, or incompatible with the motherboard or the older RAM module, or both. You'll need to get the new RAM module replaced. Take your old RAM module to the vendor from whom you bought it and ask him to replace the new RAM with one similar to the old RAM.

I Can Watch But Can't Catch!

Q I have an Intel Celeron 1.2 GHz, 256 MB RAM, a 60 GB hard drive and a Frontech TV-Tuner card. The TV playback of the card is smooth enough. But while recording, many frames are lost in the DVD quality. As a result, the quality of recording is poor. How can I ensure best quality?

Mahesh Bandekar, via e-mail

A The system configuration you mention is more than enough to view TV using a TV-Tuner card. But it is not enough to record live TV in DVD quality. You can record in MPEG-1 file format (VCD quality) without dropping a frame, but if you try to record a MPEG-2 file format (DVD quality), you will drop a lot of frames and the resulting captured file will be of bad quality.

If you wish to record in MPEG-2 format, you should consider upgrading your hardware to at least a 2 GHz processor from Intel or a 2000+ processor from AMD. To capture in MPEG-2 with really good quality, you will require a TV-Tuner card with hardware MPEG capture capability, such as the ones from Hauppauge.

Power Trouble?

Q My PC's configuration is as follows: an AMD Athlon 64 3000+, an Asus K8N4E Deluxe nForce 4 chipset-based motherboard, XFX GeForce PCX 5300 PCIx16, a Tricom 450 watt, iBox i612 Standard ATX, a Seagate 80 GB 7200 rpm SATA hard drive and Windows XP Professional SP2.

The problem arises when I start playing games like *Call of Duty* or *Prince of Persia—Warrior Within*. It runs fine initially, but after playing for 10 to 15 minutes, the PC hangs and restarts.

I have checked the CPU and motherboard temperatures—they were stable at 48 and 46 degrees Celsius respectively. All overclocking options are disabled and there is no overclocking. Is there a problem with my power supply? I'd asked my vendor for a genuine 400 W power supply. He recommended the Tricom 450 W, and I purchased it.

Devadatta, Bhubaneswar

A Install DirectX 9.0c on your PC. Install the latest versions of nForce4 chipset, nVidia graphics and AC'97 audio drivers for your motherboard. Install the latest hotfixes for Windows XP SP2. If the problem persists, your RAM is the probable cause. This is more likely if there is a slight mismatch in the RAM modules in the dual-channel configuration.

To figure out if this is the case, remove one of the RAM modules and try playing the game to see if it works. If it doesn't crash, the problem is with the mismatched memory modules. If the problem persists, there could be some heating issues with your processor. You can't always depend on the motherboard's temperature sensor to report the correct temperature at all times.

More For Less?

Q Using my Windows 2000 bootable CD, I can install Windows 2000 Professional, Windows 2000 Server and Windows 2000 Advanced Server. When I checked the size of the disk by right-clicking the CD drive icon, it was around 450 MB. But when I tried to copy it to my hard disk, it took around 1.5 GB.

I've also come across some 770 MB VCDs, although the normal disk capacity is 700 MB. How we can one write more data on a CD than its pre-defined capacity?

Prasad V Nair, Trivandrum

A Some data CDs are created in such a way that although the total size of the data on each may far exceed the normal capacity of a CD (which is 700 MB, and may sometimes even cross 1 GB), the CD properties still show the CD's size to be well within the limits.

This is achieved by a special method of CD image creation wherein identical files appearing multiple times in the CD compilation are stored as a single file with different entries in the file allocation table of the CD. This way, multiple identical files that are seen to occupy multiple times the size of the file actually occupy only the space of a single file. There are various tools available to create such images, including UltraISO at **www.ezbsystems.com/ultraiso**.

A Useful Dump

Q When memory dumping happens, '.dmp' files are created. Can you tell me how to open these files to know the reason of the dump?

Adesh Kumar, via e-mail

A Memory dump file creation is a very useful diagnostic tool in Windows systems based on NT. A memory dump is an output file generated by the OS during a crash, and is useful in determining the cause of the crash. It is saved as a file with the .dmp extension in the 'System32' directory inside the 'Windows' directory.

To set up this option, open 'System' in 'Control Panel', navigate to the 'Advanced' tab, and click 'Settings' under 'Startup and Recovery'.

The dump file can be analysed using a tool from Microsoft known as dumpchk.exe. You can download it from **http://snipurl.com/gzel**. Different versions of the tool are available for different versions of Windows. Detailed information about using dumpchk.exe can be found at **http://snipurl.com/gzf8**.

BIOS Upgrade Needed

Q I have an Intel P III 450 MHz (Katmai) processor, Intel (i440BX/ZX-SMC60X rev. C1, Intel 82371 (PIIX4) rev. C1) Chipset, Inno3D GeForce4 MX 64 MB, 128 MB of RAM, a DVD/CD-RW, Windows 98 SE, and a 20 GB hard disk. I have the following questions:
1. Can I use a P III 1 GHz Processor with this chipset? Is there some other fast processor that I can use with this chipset?
2. How can I upgrade my BIOS? I have the Award 4.51 P-03/01/99 BIOS. I am unable to install Windows XP. Is this a BIOS problem? Does this BIOS support only Windows 95/98?
3. While burning CDs, disk finalisation fails, and the disk becomes unusable. Why is it so?
I can play games like *Call of Duty*, *NFS Hot Pursuit 2* and *GTA Vice-City* on my PC, and they run very well.

Zaif Khan, Delhi

A Unfortunately, you will not be able to use a 1 GHz P III on your board—the board simply does not support that processor. You can upgrade your BIOS by downloading the latest BIOS and BIOS flashing utility from your motherboard manufacturer's Web site.

The Award 4.51 BIOS has certain limitations. When a hard drive larger than 33.8 GB is attached, the system hangs during Power-On Self Test. But you should be able to install Windows XP even with this BIOS.

CD burning can fail during finalisation for a variety of reasons—due to faulty media or a faulty writer. Try using different media. Use a cleaning CD to clean the lens of your CD-Writer—dust may have accumulated over it. Try burning at lower speeds.

Missing Music

Q My system configuration is a P IV, an Intel 845 motherboard, and 256 MB of DDR RAM running Windows XP. Whenever I try to open Windows Media Player, I get the following error:
"winplayer.exe - ENTRY POINT NOT FOUND
The procedure entry point ASFSend Time To Time could not be located in the dynamic link library WMASF.DLL"

It's only recently that I've started experiencing this problem. I've tried to restore the system to an earlier date, but the problem persists. What is the solution?

Prof Sanjay S Patil, Ratnagiri

A You need to reinstall Windows Media Player. Go to **Control Panel > Folder Options > View** and set it to 'Show hidden files and folders'. Uncheck 'Hide protected operating system files [recommended]' and 'Hide extensions for known file types'. Now, open the Windows Explorer and go to the 'C:\Windows\Inf' folder, find the file 'wmp.inf', right-click it and choose 'Install'.

You will need to either insert your Windows XP CD or know where the i386 folder is located on your hard drive. You may also need to know where the 'ServicePackFiles' folder is (it's usually under the Windows directory) if you've installed a service pack. If your Windows directory is 'C:\Windows', then the service pack files are in 'C:\Windows\ServicePackFiles'.

Icons For CDs

Q How do I assign an icon to the CD-R/RW while writing it, so that when I put it into the drive the icon appears at the place of the CD drive in 'My Computer'?

Ajay Bhushan, via e-mail

A The icon displayed in 'My Computer' when some CDs are inserted into the CD drive is due to the Autorun feature of the CD. The root of an Autorun CD contains a file 'autorun.inf', which is an instruction file associated with the function. This file has a syntax, and a simple autorun.inf file looks like

```
[autorun]
open=autorun.exe
icon=autorun.ico
```

Here, 'autorun.exe' is the executable file that is launched when the CD is inserted, and 'autorun.ico' is the icon file that gives the CD its icon. Sometimes, an executable file or a DLL that might contain an icon is also used instead of an icon file. You may also try a freeware Autorun file editor such as the one from **http://autorun.moonvalley.com** if you want to play around with Autorun files.

I Lost My Password!

Q I use MS Office 2000 on my computer. I created an MS Word file and saved it with password protection. I've forgotten the password. How can I open the file?

Vikram Dan, Barmer, Rajasthan

A To recover the password of an MS Word file, download software such as the Word Password Recovery from Interlore (**http://snipurl.com/gzf0**) or the Passware Word Key (**http://snipurl.com/gzey**).

A fast processor enables quick recovery of the password. Short passwords are easy to recover, but longer passwords may take days

Overclock your graphics card

If you're giving up on your graphics card, you might as well try and overclock it!

Varun Dubey

So you got yourself a spanking new graphics card and were excited about playing the latest games at the highest resolutions—only to find it faltered while running a low-end configuration of *Doom 3*? If that made you give up on your card, you might as well risk overclocking it to see if you can get that last bit of speed out of it.

What You Need

In this workshop, we tell you how to go about overclocking your nVidia card using a simple utility called nVHardPage and enabling some hidden menus in the default driver's menu for the card. You can download nVHardPage from www.guru3d.com/nvhardpage/

STEP 1 Running The Software

The software does not require any installation. Simply navigate to the folder where you unzipped the files, and find a file called 'nVHardPageSE'. Running the file will present you with a tweaking menu.

The default screen shows the system configuration including those of the graphics card, the CPU and the OS.

STEP 2 The Software Interface

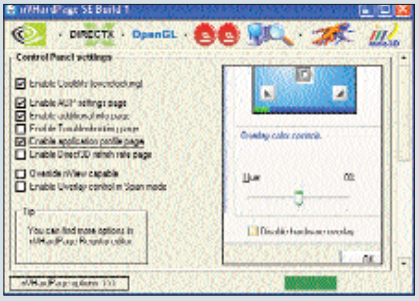
At the top, you'll notice icons for nVidia (card), DirectX and OpenGL, and an icon comprising two speedometers, which stands for the inbuilt overclocking utility. This utility has two sliders, which reflect the core clock speeds of the card and the accompanying video RAM speeds. They need to be adjusted together—your card should not run faster than the video RAM. Of course, both these speeds have thresholds you need to adhere to.

Move the slider to get optimum performance out of the card

STEP 3 The Control Panel

We won't be messing around with the card from within this software, but will do it from within the nVidia drivers, as they give us certain options that the software doesn't—namely, the automatic overclocker! Note that you can use nVHardPage to overclock your card if you want to, but we don't recommend that you do. nVHardPage gives you too much leeway—you could easily damage your card by moving the slider too far to the right! Why we used nVHardPage at all is because running it makes the overclocking options in the nVidia drivers available.

Now, to un-hide the frequency controller slider for the driver interface, click on the nVidia icon at the top and then click on the control panel settings. Here you'll find a list of options that signify the settings you can tweak from within the nVidia driver interface. The unchecked boxes signify the hidden tweaks. Now here, tick the 'Enable Coolbits' box. This will ensure that you get a speed slider when you open the display properties next time.



Enable various settings using the control panel

There are loads of other options here, such as AGP settings, which lets you choose the AGP acceleration, and a troubleshooting page—along with a page for configuring Direct 3D rendering, where you choose how many frames the card renders in advance. This can be tricky, because if you play a FPS you never know what kind of frames are required next—so if you render them in advance, it could prove to be a bottleneck.

STEP 4 The Overclocking Menu

Now since we've enabled the overclocking feature in the drivers, let's try and overclock the card!

To go to the nVidia settings page, right click on the desktop. Choose Properties > Settings > Advanced, and then click the tab that has your graphics card's name.

A menu opens up on the left with a multitude of options and settings. Click on the option marked 'Clock Frequency Settings'. On the right, select the radio button labelled 'Manual Overclocking'. Selecting it will present you with a disclaimer. Read it and hit the 'I accept' button. You will be presented with two sliders, one for 'Core Clock Frequency' and the other for 'Memory Clock Frequency'.

STEP 5 Overclocking The Card

Set the core and memory clock frequencies here

You could, of course, go ahead and overclock the card by simply sliding the slider as far to the right as you think is safe, but if you take the slider too far to the right, you could render your card forever useless.

There is an easy way to test the potential limit of your card. In the dropdown menu saying '2D Performance', select '3D'. A button labelled 'Detect optimal Frequencies' gets enabled. Clicking it will instruct the drivers to take all system parameters into consideration and give you the optimum frequencies for both the GPU core and the memory frequency.

There is, however, no guarantee that the card will run all games at these settings. Once the card gives you these settings, you should test the system stability by running different games.

If all goes well, try increasing the frequency a little, and test again. Continue this process until you get the maximum value at which your system stays stable. This is the optimum overclocked speed of your card, and this can be above or below the auto-detected settings.

If you have an ATi card, you can download some utilities from www.voodoofiles.com/9742

These software work similar to the one we've talked about, and you shouldn't have too much trouble overclocking your ATi card. ■

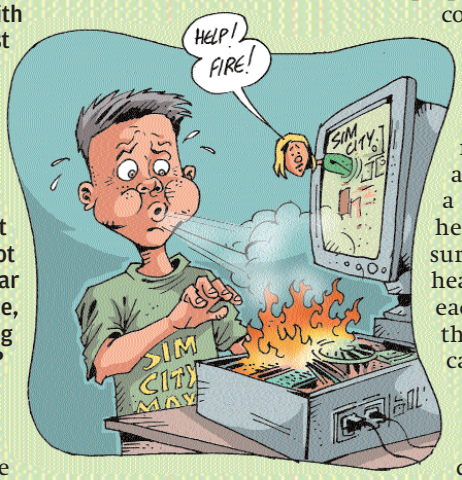
Too Hot To Handle!

Question of the Month

Q I have a Pentium IV with Intel 865GBF motherboard, 1 GB RAM, an ATi Radeon 256 MB graphics card running Windows XP with SP2. I have a peculiar problem with processor overheating. I experienced this first when playing *SimCity 4*. Within five minutes of launching the game, I got a warning message about overheating of the heat processor. But as soon as I quit *SimCity 4*, the system normalised.

Is it a problem with my processor? Other than this, my computer doesn't overheat even if it runs for a full day. On the boot before the OS selection, I am getting a particular message saying processor in dual channel mode, and so on, and press F4 to resume. This thing popped up recently. What could the problem be?

Mika, Via e-mail



A Even if your PC is switched on the whole day, and if it's not under stress, the processor will not overheat. But when you play 3-D games that stress the processor, it tends to heat up. Intel Prescott processors are known to heat up and your processor seems to be one of those. Rest assured, this is normal.

The reason for overheating could be due to the CPU fan not working properly or the CPU and heat sink not making proper contact thereby hindering maximum heat dissipation. Moreover, you need to check if your cabinet is properly ventilated as an improperly ventilated cabinet can also contribute to overheating.

In order to remedy the problem, check whether the CPU fan is rotating and not being blocked. It is advisable to remove the heat sink fan unit and the processor, clean it, apply a fresh, thin and uniform coat of heat sink compound on the surfaces of the processor and the heat sink that come in contact with each other and then re-assemble them. This should eliminate the cause of the overheating.

Based on the information which you have provided, we think the message that is displayed during system boot is "Memory in Dual Channel Mode" and not "Processor in Dual Channel Mode". However, this is a normal occurence for 865 chipset-based motherboards with two memory modules. The 'Press F4 to resume' must refer to the temperature shutdown of the motherboard and not due to the dual channel memory setting.

to recover even with a fast processor. The software uses the brute-force technique of password breaking, and how fast it can find the password is dependent on the number-crunching capability of the processor.

Now You C!

Q My PC runs two OSes, Windows 98 on the C drive and Windows XP on the D drive. A few days ago, I installed the Windows version of the C language. Recently, I uninstalled it and started getting an error message at bootup in the Windows 98 OS:

"There is an error in your CONFIG.SYS file on Line 2
The following file is missing or corrupted:D:\C700\BIN\SMARTDRV.EXE
There is an error in your CONFIG.SYS file on Line 8
Incorrect DOS version
The following file is missing or corrupted:COMMAND.COM
C:\>D:\C700\BIN\SMARTDRV.EXE
Bad command or file name
C:\>PATH= D:\C700\BIN;D:\WINDOWS\System32; D:\WINDOWS; D:\WINDOWS\System32\Wbem
C:\>SET LIB= D:\C700\LIB;D:\C700\MFC\LIB
C:\>SET INCLUDE= D:\C700\INCLUDE; D:\C700\MFC\INCLUDE
C:\>SET HELPFILES= D:\C700\HELP*.HLP
C:\>SET INIT= D:\C700\INIT"
Why is this happening?

Ravi Ranjan, via e-mail

A The problem with your system is that one of the startup files for Windows 98, config.sys, contains invalid commands that were added to it when you installed C for Windows. Now when you uninstalled C, the changes to config.sys have not been undone, and since those commands are no longer valid, you get the error.

In order to correct this problem, open config.sys in a text editor such as Notepad. The config.sys file might be hidden and read-only, and you might have to reset its attributes. To do this, go to the Windows command prompt and type in the following commands:

CD\
ATTRIB -S -H -R CONFIG.SYS

You'll now be able to edit config.sys. Go to line number 2, and type in 'REM' and a space at the start of the line. Similarly, go to line number 8, type 'REM' and a space at the start. After adding 'REM', save the file and restart your computer. Everything should work fine now. 'REM' is short for 'Remark Comments', and stops lines from getting executed. Similarly, to uncomment any line, just delete the word 'REM' from the start of the line.

Get Help Now!

E-mail us your computing problems along with your contact details and complete system configuration to **sos@jasubhai.com**, and we will answer them here! Since we get more mails per day than we can handle, it may take some time for your query to be answered. Rest assured, we are listening!

Registry Backup In Win98

Q I have a Pentium III 500 MHz processor, an Intel BX motherboard, 128 MB of RAM and a 20 GB hard disk. I have Windows 98 installed. How do I back up my registry?

Rajesh Bhatt, Mumbai

A There is a utility in Windows 98 to check, backup and restore the registry, known as SCANREGW. Go to **Start** > **Run**. Enter "SCANREGW" and hit [Enter]. You'll be asked if you want to back up the registry. Click 'Yes', and your registry will be backed up. ■

It's A PC... It's A TV

Once you add a TV-Tuner card to the computer, you could turn it into a TV or a PC at the touch of a button

Recently, after a three-year stay in the US, my best friend Samir returned to India. We soon caught up at our usual hangout and after the initial niceties, the topic immediately turned to our common passion—technology!

A techie and an avid gamer, Samir has an 02 XDA IIs, a Rio Karma MP3 player and the slimmest digital camera I have ever seen—the Sony DSC T7! Over the course of our conversation, he amazed me with stories of the US including his experiences with LAN gaming and the like. Well, what do you expect when two techies get together?

Now that he was back, things weren't exactly to his liking. I suggested he rent some DVDs or watch TV to pass the time but this just opened up a can of worms! Samir's home (like most Indian homes) had fallen prey to the saas-bahu sagas and the poor guy had no say in the matter.

Time for Agent 001 to swing into action! Having dealt with this problem myself, I knew the anatomy of the problem and the solution too! A TV-Tuner card is the best device to counter this problem and have your way! Accordingly, I suggested this to him and before I know it, I was in the thick of things and found myself searching for an ideal TV-Tuner device for his computer.

My first stop was at a decent enough shop in Vashi Plaza (Navi Mumbai). On inquiring about a TV-Tuner card, I was asked for two options—external and internal. What's the difference? In an internal card, one needs to install it in the CPU and then load the drivers—it's a lot of work!

With an external one, all one has to do is hook it up to a standard monitor and you're done.

Also, in an external box, since you are not required to switch 'On' the PC, it saves a lot of power, which is not an option with the 'internal' TV tuner card. But what about capturing Live TV programmes to view them later?

If you are interested in capturing live shows, you would be better off with an internal TV-Tuner card, I was told. There are some external boxes that hook up to your PC via the USB port, but then the connection becomes the bottleneck. It's advisable to go for an internal card if capturing is your game.

As for brands, the only two options I was presented with were Frontech and Intex. The external solutions from these brands are priced between Rs 1.2 K and Rs 1.5 K and offer maximum bang for your buck. Unfortunately, they lack the quality finish associated with good products.

If you would like to capture live TV shows, you would be better off with an internal TV-Tuner card

To hunt for better options, I decided to make the journey to the Holy Grail—Lamington Road (LR). Unfortunately, the July 26 rains that inundated the whole of Mumbai did not spare LR either. Nonetheless, business was as usual. My decision to make the journey here was vindicated at the first stop itself where I was presented with a range of options to choose from. The prices started at Rs 1.2 K and went up to Rs 6 K.

Entry-level internal TV-tuner cards with basic 'capturing' capabilities from Frontech, Intex, Mercury, X-Teq started at Rs 1.2 K. If you are on a hunt for the cheapest solution and can compromise on the capturing front, don't look any further.

Pinnacle, Compro, AverMedia and Pixelview are the middle range options and offer internal TV-Tuner cards between Rs 2.2 K and Rs 3.5 K. Within this category, AverMedia and Pixelview are slightly cheaper options with respectable picture quality. Both, Pinnacle and Compro, have Gold or Pro versions of their cards and offer extra features including FM Tuner, Stereo sound and more. These versions, though, would set you back by around Rs 3.5 K.

Although you can also use these TV tuner cards for capturing content, you need to remember that these cards don't have the required decoding hardware and hence, good quality capture is not possible.

Cards such as Hauppauge have an onboard hardware MPEG-2 decoder that makes good capturing possible. Despite my best efforts, I couldn't locate a dealer for these cards. Time to phone relatives abroad! Compro also has another solution wherein the tuner is integrated with the Graphics card. Cost: a good Rs 6 K.

Finally, for Samir, I bought Pinnacle's PCTV that cost Rs 2,350—an ideal option for viewing and capturing content provided you have a good computer. ⊠

Illustration **Pradip Ingale**

Want more of Agent 001? Turn over to read his answers to your buying questions

Ask Agent 001

Looking For A Notebook

Q I am interested in buying a notebook computer. Which one do you think is better? Acer Aspire 5000 with AMD Athlon Turion 64-bit processor or Acer Travelmate 4151LCi with a Centrino processor? Would there be any backward integration problems with the 64-bit processor?

Dr Vasant Patel

As far as AMD Turion is concerned, we haven't tested a solution based on this new platform and I will reserve my comments on the performance of the new chip from AMD. However, from what I have heard about it, it is good. I don't think there will be any backward compatibility issues either.

The Acer Travelmate 4151LCi is based on a tried-and-tested Centrino platform and I don't see any problems if you would like to purchase it. However, you should consider laptops from other brands such as HP-Compaq, Dell and Lenovo (IBM) as well.

Music On The Move

Q I am interested in buying a HDD MP3 player. I have around 20+ GB of classic rock and would like to carry it around and also be able to play it on my car tape deck. One more feature I am looking for is the ability to record lectures on the fly. Ease-of-use and battery life are important to me. I have narrowed down my choices to the iRiver and Creative because I am not so sure about the Apple iPod.

Dr A K George

Among the various HDD MP3 players, iPod from Apple is considered to be the best. It looks great, is extremely simple to use and offers superb battery life. However, it does not offer any additional features such as FM reception or voice recording.

Creative's Zen is another good MP3 player, which, according to me, fits the bill as it also allows voice recording although via an optional remote.

As far as the iRiver is concerned, they have recently launched their outlets in India and might not have a national presence as of now. Due to this, their service network also might not be up to scratch.

As for your buying decision, I suggest you go for the Creative Zen. However, if you are ready to sacrifice the voice recording feature, nothing beats the iPod. For playing MP3s in your car, a converter is also available with most shops selling car stereos. For Creative, contact your local dealer. Apple India can reached at 080-25550575.

Motherboard Musings

Q I am planning to buy a computer with AMD 64 3200+, 1 GB RAM, 6600GT nVidia graphics card, but I am unable to decide on a motherboard.

What I would like, though, should have a PCI-e slot for the graphics card. Moreover, it should support 939-pin AMD processors and preferably, be based around the nVidia chipset. I have allocated approximately Rs 8 K for the board. Also, could you suggest me a good cabinet in the Rs 3-4 K range, ideally from Antec?

Abhishek Dwivedi

For motherboards based on nVidia nForce4 chipsets, I would suggest you to go for the MSI K8N Neo4. It has all the features you have asked for and hopefully, should fit in your budget too. As far as the cabinet is concerned, I don't think you will get an Antec cabinet for Rs 3-4 K with the power supply.

I would suggest you buy a Mercury cabinet with good ventilation and then add an Antec power supply to it. A standard mercury cabinet should set you back by Rs 500-700 and the Smart Power 350W PS from Antec will cost you around Rs 3.6 K.

Creative's Zen is a good MP3 player, which fits the bill as it allows voice recording although via an optional remote

Ask Away

Want a tech product, but don't know how to go about buying it? E-mail **agent001@thinkdigit.com** with your complete contact details and get your queries answered. Please mention your PC's detailed configuration to ensure consideration for this section

MFD Matters

Q I am planning to buy a multifunctional device for my small office with a budget of around Rs 7K. Please suggest one that is capable of photo quality printing, has standalone copy function and preferably runs on low ink.

Ajil Mathews

From our experience, we can say that Epson MFDs are good at extending the life of the ink cartridge, but don't give you exemplary printing quality. Lexmark has some great looking devices, give good print quality but are ink guzzlers. HP offers the best all-round performance, though, with good prints and acceptable ink drain.

Nevertheless, among all these, Canon is the best when it comes to print quality, speed and cartridge life. Before you buy an MFD, look for the brand with easy availability of ink cartridges and a proper service network.

3G Or Not To 3G?

Q I need to buy a mobile phone but I am confused between the Nokia 6630 and 6681. Both phones are just awesome and offer almost the same feature set; only difference being the 6681 one doesn't support 3G. Should I go for 3G phone? In India, as far as I know, there are hardly any companies offering true 3G capabilities and it will take a long time for 3G to be fully functional. I am not planning on changing the phone frequently.

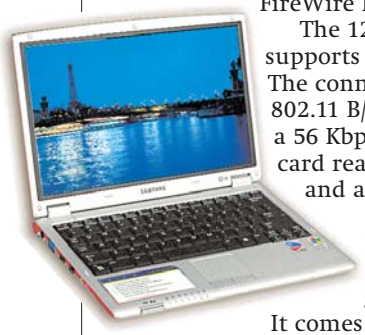
Ashish Anand

As far as 3G is concerned, I think we are unanimous about it: it's a long way before Indian cell companies offer something that is 'more go than show'. Therefore, investing in a cell phone supporting 3G might not be the smartest thing to do.

But, since you have mentioned that you won't be changing the phone frequently, I suggest you buy the 6630 with 3G support, which might come handy whenever cell companies in India offer 3G. Also, the price difference between the two models is not much and having that extra headroom might be a boon in disguise in the long run. ⊠

Samsung Note PC Q30

Samsung's Q30 is a sleek form factor notebook that weighs just 1.1 kg. This Centrino notebook has an Intel Pentium M-A 1200 GHz processor, 512 MB RAM and a 40 GB hard drive. It bundles an external FireWire DVD-RAM ReWriter.



The 12.1-inch wide colour TFT screen supports 1280 x 768 pixels resolution. The connectivity options are Wi-Fi 802.11 B/G, 10/100 Mbps LAN as well as a 56 Kbps modem. It also features a card reader and has 2 USB 2.0 ports and a FireWire port.

It was below average in the Business WinStone 2004, scoring just 14.3. The battery lasted for a good 3 hours and 57 minutes.

It comes with Windows XP Professional and recovery CDs. The price of Rs 1,40,000 is too high.

Company **Samsung India Electronics India Ltd.**
Price **Rs 1,39,990**
Phone **: 011-51511234**
E-mail **raman.singh@samsung.com**
Web site **www.samsungindia.com**
Rating

Logitech Mobile Freedom Headset

The Incredible Bulk

This Mobile Freedom Headset from Logitech is compliant with Bluetooth v1.2. The headset works with compatible mobile phones and PCs.

Weighing less than 30 gm, the headset is bulky. It has a range of 10 meters and is powered by a 140mAH rechargeable Lithium-ion battery.

The controls on the headset include a 'call answer button and a volume up/down button. The call answer button works as the power-up key as well and enables pairing up with other devices.

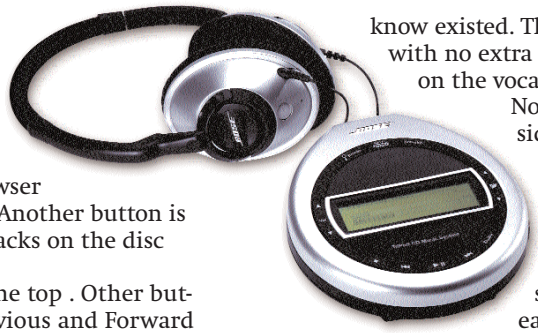
The rotating over-ear clip is not very comfortable to wear. Call clarity is exceptional, with a decent range.

Company **Logitech Electronic India Pvt Ltd**
Price **Rs 3,995**
Phone **022-26571160**
E-mail **response@logitech.com**
Web site **: www.logitech.com**
Rating

New&Notable

Bose TriPort Music System

Head For The Phones



The Bose Triport Music System consists of a CD/MP3 disc player and a Triport headphone. The player looks like any other Discman, but appearances can be deceptive!

Since it plays MP3 discs, a folder browser button lets you browse through folders. Another button is 'Browse' that lets you check the other tracks on the disc while you are listening to one.

The volume controls are placed on the top . Other buttons include the regular Play/Pause, Previous and Forward and Stop buttons. A unique MyMix button lets you create custom playlists from any MP3 disc that you are currently listening to, but once you switch off the player, the list is lost.

The headphone weighs only 5 ounces and looks flimsy, but it is just the lull before the storm. Once you wrap it around your ears, you will be surprised by the amount of reduction in the ambient noise. Remember, these are not noise-canceling headphones, but they perform a near-similar job. Nevertheless, the real pleasure starts when you hit play! The headphone can be summed up in one word—fantastic!

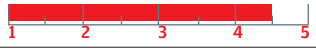
Some of the artists whose music we played on it were Nirvana, Pink Floyd, Madonna, Pearl Jam, Metallica, Alannah Myles, Chicane, Bryan Adams, Aerosmith, Lata Mangeshkar, Kishore Kumar, Mohd. Rafi, Beethoven, Claude Debussy... not necessarily in that order. Everything sounded amazing! You could hear notes that you previously did not know existed. The music is perfectly balanced with no extra stress on the instruments than on the vocals—everything is crystal-clear.

Nonetheless, there are some downsides: in some songs, we noticed that the treble went intermittently high. This can be attributed to the quality of the Audio CD, too, but the sound jarrs at high treble and volume settings. Another factor is that each note is faithfully reproduced, so for people who listen to low bit rate MP3 files, they will notice a flanging effect that is not apparent on low-end stereo systems or headphones.

So, is this combination the best that we have seen? In a manner of speaking, it is. It is the headphone more than the player that steals the show. However, there are much cheaper brands available today which do the job just as well.

The Anti-Skip function is one of the best we have seen. Finally, everything boils down to one all-pervading truth: this is a Bose. So, if you like to flaunt it, you have to get it!

Company **Bose Corporation India Ltd.**
Price **Rs.11,900**
Phone **1600112673**
E-mail **customersupport@boseindia.com**
Web site **www.boseindia.com/**
Rating



Creative Zen Portable Media Player

The Zen Portable Media Player from Creative is one of the early devices running on Microsoft's Portable Media Center software. Straight out of the box, the player is simply stunning, albeit a bit bulky, with a shiny black coating and a nice big 3.8-inch LCD screen. It fits into your hand and lets you play music, movies and photographs with ease.

In terms of the specs, it is powered by an Intel Scale 400MHz processor, 64 MB RAM and a 20 GB hard disk drive. The Zen's interface is extremely responsive. And all this despite the glitzy fade-in and smooth sliding effects within the Windows OS.

The controls are fairly simple and gameboy-ish.

Despite all these amazing features, the player does not identify as a removable drive, and drivers are needed to transfer music. It works on Windows Media Digital Rights Management 10, which prevents a movie file from loading into the player if not authorised by a Web server, which it connects to every time you sync it.

It plays only the WMV format, but does it well. If you have movies in other formats, WMP10 will first convert them and then upload them—a colossal waste of your time. The device plays music (MP3 and WMV formats), displays photographs and plays videos with élan. The interface is slick and extremely easy to navigate and makes scrolling through huge lists easy. If you can live with a slightly bulky (but well built) device, we would absolutely recommend this device.

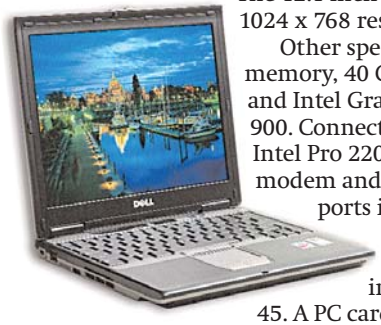
Company **Creative Technology Ltd.**
Price **Rs 28,299**
Phone **0 - 9820357718**
Web site **www.creative.com**
Rating

Dell Latitude D410

For Professional Laps

The Latitude D410 measures 1.25 x 11.0 x 9.4 inches and weighs just over 1.7 kg.

Powered by an Intel Pentium M Processor 760 (2.00GHz, 2MB L2 Cache) installed on an Intel 915GM chipset, the notebook offers the latest mobile offerings from Intel—including PCI-Express, DDR2 support and 533 MHz FSB. The 12.1-inch screen supports 1024 x 768 resolution.



Other specs include 512 MB system memory, 40 GB 5400 RPM hard drive, and Intel Graphics Media Accelerator 900. Connectivity options include Intel Pro 2200 802.11b/g Wi-Fi, 56K modem and Gigabit LAN. Available ports include Docking connector, 3 USB, VGA, headphone/speaker out, infrared port, RJ-11, and RJ-45. A PC card slot is provided, though FireWire and media card reader are not available.

Because of its reinforced magnesium alloy frame, the D410 is extremely sturdy, and comes with Dell's StrikeZone shock absorber system to protect the hard drive.

Both touchpad and pointing stick options are present. The notebook logged a whopping 23.9 in the Business Winstone Test and 3413 in PCMark04, making it one of the best performing notebooks we have ever tested. The included six-cell battery lasted a decent 2 hrs 39 minutes.

The D410 bundles an external combo-drive, Windows XP Professional with SP2, a nine-cell extended battery, leather carry bag and a 3-year on-site warranty.

Overall, the Latitude D410 will not disappoint frequent travellers who want great performance.

Company **Dell Computer India**
Price **Rs 94,757**
Phone **080-25357309**
E-mail **anil_srinivas@dell.com**
Web site **: www.dell.com/ap**
Rating

iRiver N10 256MB MP3 player

Anti-piracy MP3 Player

The iRiver N10 is a sleek MP3 player with a memory capacity of 256 MB. It comes with a standard USB cable and earphones. The style is abstract and will appeal to people who want to flaunt their MP3 players.

The display is OLED which is very functional and actually helps in conserving battery life. The iRiver N10 can play Windows Media Audio and MP3 files.

Coming to performance, the player has very good sound quality. Its software lets you tweak just about anything you want, however, the controls are rather cumbersome to use. You can use the preset equalisers for listening to music or customise them as you wish.

Battery life is pretty good; with the player running non-stop for approximately 10.5 hours.

The player is plug-and-play and is recognised as a USB device when connected to a computer. You will, however, need to install the proprietary iRiver software before using the player. Using this bundled software, you can also store data in the player.

Another feature (or mis-feature) is that once you copy a song on to the player, you cannot copy it back to the computer. According to iRiver, it is a step to prevent illegal transfer of music from one system to another.

The sound recording quality is good and recorded files are in .REC format, which can be converted to MP3 using the iRiver Music Manager software.

The player is feature-packed and boasts good performance but the price of Rs 8,499 is a big letdown.

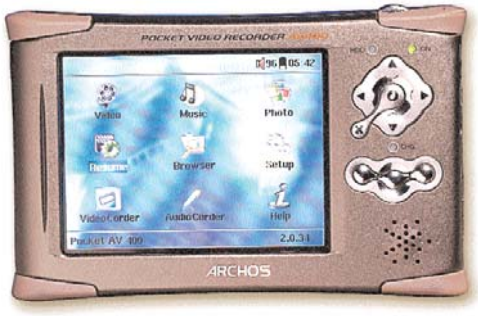
Company **Salora International Ltd**
Price **Rs 8,499**
Phone **011-51614322**
Web site **: www.iriverindia.com**
Rating

Archos AV 400

Video On The Go

This 20GB device is only slightly bigger than your regular iPod but does much more! For starters, it plays video (MPEG-4 and AVI in DivX format), audio (MP3, WAV, WMA) and JPEG and BMP images.

To be fair, the 3.5-inch screen is not spectacularly big like its sibling, the Archos AV700's, but the clarity is excellent.



It has a four-way navigation key and a centre-click button. A sixth button is used for going back in the menu structure. Unlike iPods, where you need iTunes, the AV400 is recognised as a removable drive in Windows XP and you can copy files using Windows Explorer. When you unplug it, a scan is automatically performed and each file is classified under Artist, Genre, Album, Title and so on. Updating 1 GB of new music took less than 3 seconds. We were floored!

The interface is brilliant, fast and vivid. The player has an inbuilt CF reader and an additional 4-in-1 adapter can be bought to let you insert any kind of memory card directly into the device. It has a book-marking feature—click 'Resume' to continue from where you left off in a movie or song.

It comes bundled with Virtual dub and a front-end proprietary software, which ensures that all encoding settings are just right for the movie to play. In our tests though, even unoptimised movies played without framing. The included headphones are strictly decent.

Archos also bundles a hub which allows you to record and playback movies or images to a TV. The recording is limited to just 2 GB per file. It can also be used as a Dictaphone.

You can rename files and create/delete folders and playlists directly from within the player. The battery life is just about adequate for 3 hours of video and 11 hours for music.

The product is amazing but we would've liked a bigger hard disk for more movie storage.

Available from **The Gadget Boy (Inorbit Mall, Malad, Mumbai**
Price **Rs 29,999**
Phone **022-56880270** Web site **www.archos.com**
Rating 1 2 3 4 5

O2 XDA IIi

XDA Again

The XDA IIi boasts significant enhancements over the older XDA II. Featuring the same design, the XDA IIi is a PDA phone with Windows Mobile 2003 Second Edition for Pocket PC Phone Edition.

Its enhancements include added Wi-Fi (802.11b) support, a faster processor (Intel PXA 272 running at 520 MHz as compared to the 400 MHz CPU in the XDA II), double the ROM at 128MB, and a 1.3 megapixel camera. Other specifications of the XDA IIi include tri-band GPRS, a 3.5-inch 240 x 320 touchscreen supporting 65K colours, 128 MB SDRAM, SDIO slot, Infrared and Bluetooth v1.2.

Pre-installed applications include Pocket Excel, Word, Internet Explorer, MSN Messenger, Windows Media Player 10, Java MIDlet Manager (J2ME), Photo Contacts, PowerPoint and PDF viewer, and much more... The device connects to a PC using the bundled USB cable and Microsoft ActiveSync 3.8 included on the CD.

The 520 MHz CPU is zippy and handles most applications, multimedia and games with ease, even while multitasking. Phone clarity on the XDA IIi is excellent, and the 1.3-megapixel camera produces decent results—provided lighting conditions are good.

To sum up, the XDA IIi is a worthy buy for corporate users who want to stay connected on the move. However, others can opt for an entry-level notebook at a similar price!

Company **Creative E-Biz.com**
Price **Rs 45,888**
Phone **022-5631 4845**
E-mail **cr_mum@yahoo.com**
Web site **www.seeo2.com**
Rating 1 2 3 4 5

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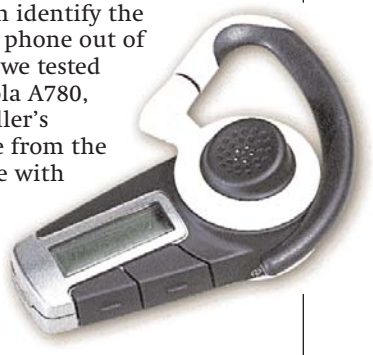
Please write to products@thinkdigit.com. The *Digit* Test Centre will be delighted to respond to your queries.

Jabra BT 800

Jabra has finally made its way to Indian shores. The BT800 Bluetooth headset, Jabra's flagship model, is packed with impressive features.

The BT800 looks chunky, but at 22 gms, is quite light. The skinny ear loop does a good job of holding the BT800 comfortably in place.

It has an integrated, one-line, backlit LCD display that lets you see the caller ID. This feature comes handy since you can identify the caller without pulling the phone out of your pocket or bag. When we tested the headset with a Motorola A780, we were able to see the caller's number, but not the name from the phonebook. Test the device with your phone to make sure all advanced features work before buying it.



Jabra provided a power adapter and a USB connector to charge the BT800. It supports voice dialling from the cell phone address book, has five polyphonic ring tones and even a mild vibrate mode.

During testing, the BT800 performed well; the onboard DSP was able to cut through most of the background noise.

Sensibly priced at Rs 6,500, this product should be on your buying list.

Company **Faxtel Systems (India)**
Price **Rs 6,500**
Phone **022-6113055/6115524**
E-mail **faxtel@bom4.vsnl.net.in**
Web site **www.jabra.com**
Rating 1 2 3 4 5

1 **Poor:** Has serious drawbacks and needs improvement before it can be used for its target application. 2 **Mediocre:** Does not live up to expectations, needs improvement in many areas. 3 Average: Reasonably competent, but nothing spectacular about the product. 4 **Good:** A good buy, better than most products in its category. 5 **Excellent:** A brilliant combination of price, performance and features—far beyond expectations.

Windows Vista

We recently got our Beta 1 release of Windows Vista. Pleased as punch, we promptly proceeded to check out what lay inside the DVD. Yes, the new version of Windows ships only on DVD!

Installing It

The installation doesn't go the usual interrogatory way: it's simple and asks only for the product key, install type, computer's name and the partition you want to install it on. Here, you can create/modify/delete partitions if you want. The installation screens are extremely user-friendly.

System Requirements

Microsoft *had* warned us that system requirements were pretty heavy. Apparently, Vista requires a minimum of 512 MB of RAM. Also, if you want all the slick graphics, you need a dedicated graphics card with DirectX9 support. If you don't have one, your Vista desktop won't look as cool as it can.

The Desktop

The first thing that strikes you about the desktop is its amazing look and feel. Those who've used a Mac would readily say there's now more of the Mac in Windows.

Straight up, it doesn't seem anything revolutionary—most of the icons are from XP, but they're high-res.

There's a small button on the bottom right—the Windows Indexing Service, finally getting the front seat. MS has integrated MSN Search into the OS.

GDI vs DirectX

GDI (Graphics Device Interface) is the standard that Windows uses for creating graphical objects and putting them on displays and printers. Now, the reason why it's DirectX that is used for high-end gaming is because it lets programmers use a lot more of the features that the hardware supports. If you have a DirectX9-compliant card, Vista will use the DirectX API as far as possible, rather than the GDI API. It'll look pretty much like XP if you don't.

Vista's Start Menu

Using Vista

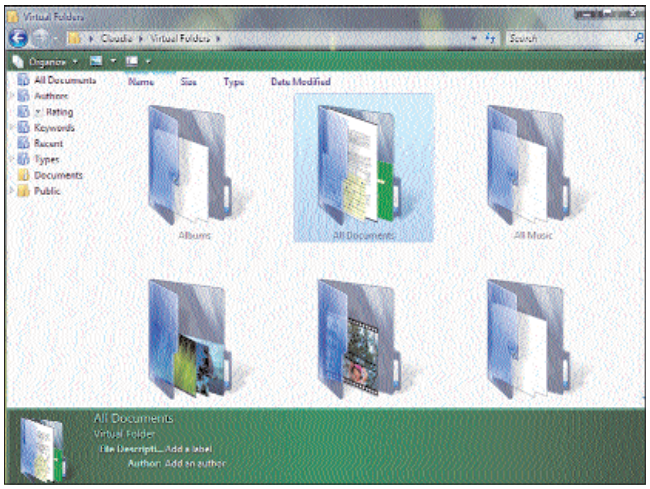
The way the startup menu works has changed. Firstly, there's a small search box in case you have too many programs and don't want to scroll. It finds as you type. When you click the 'All Programs' option, there's no new pane that slides out; instead, the pane on the left switches to the entire listof programs, and clicking on a folder opens it up *à la* Explorer.

Other changes include the lack of the 'My' prefix for any of the links—so 'My Computer' is now just 'Computer', and so on. Also, the Log Off and Shutdown buttons have been improved.

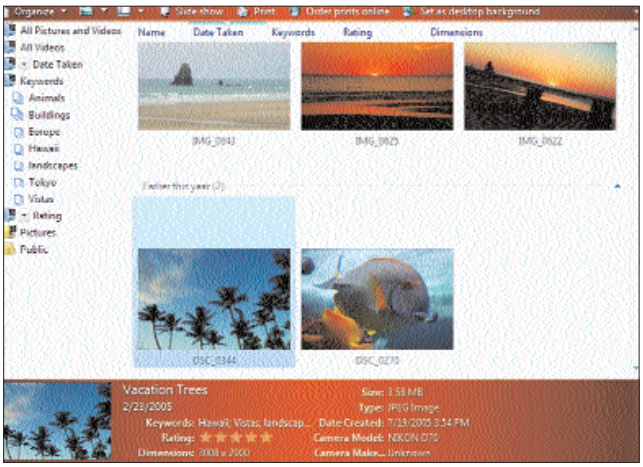
Here are some more features:

Virtual Folders

Virtual folders are basically specially-formatted XML files that act as regular folders. These folders contain search results. You can create virtual folders of your own searches. That is, if you have properly tagged music, video, documents, etc.—in other words, if the folders you're searching in contain the necessary metadata—you can save the search as a virtual folder.



Live icons in Windows Vista



Virtual Folders in Windows Vista

Internet Explorer 7

IE7 installs by default. It's got tabbed browsing (finally!), an RSS reader and the 'Shrink to Fit' printing feature.

Live Icons

If you have an Images folder, the folder will show up with images lined up like pages. The same applies for documents, music and video folders.

Security

A recent outcry about the first virus for Vista that exploited a security hole in the command shell (MSH, probably for Microsoft Shell) bundled with it has been largely unthreatening, as Vista Beta 1 does not ship with it—nor is there any confirmation that the final release will have it.

Finally...

At this juncture, Vista looks cool, more like a Mac, but only more user-friendly! There are still some hiccups to smoothen out, and compared to Windows XP, the changes visible are more in the GUI than anywhere else. We suggest you wait and watch this space for the next update.

Bhaskar Banik (bhaskar_banik@thinkdigit.com)
Varun Dubey (varun_dubey@thinkdigit.com)

Motherboards

Mercury PI915GVM

⊞ Supports PCIE, DDR/DDR II RAM, 6-channel audio

⊟ Only 2 PCI slots. No SATA.

Contact Kobian ECS India Pvt ltd
Phone 022-23020767 / 774
E-mail mumbai@kobian.com
Price Rs 4,850

MSI RS480M2-IL

⊞ + PCIE based, 6 channel audio, supports 4 GB RAM, socket 939, Firewire port

⊟ No Gigabit

Contact Tirupati Enterprises
Phone 033-22251192
E-mail mail@tirupati.net
Price Rs 5,200

Graphics cards (High End)

XFX GeForce 7800 GTX 256 MB

⊞ Extreme performance, great price, exotic features

⊟ None

Contact Rashi Peripherals
Phone 022-28221013
E-mail navinderc@rptechindia.com
Price Rs 35,000

Portable Hard Drives

WD-Media Centre 250GB

⊞ Very low cost per MB, memory card reader slots

⊟ None

Contact Western Digital
Phone 022-25851085
E-mail ajay.kapure@wdc.com
Price Rs 13,999

Cell Phones

Sony-Ericsson K700i

⊞ Extensive feature set; includes camera, MP3, FM radio, etc., fast processor

⊟ None

Contact Sony Ericsson
Phone 0124-2560808
E-mail dhiraj.soni@sonyericsson.com
Price Rs 10,500

Internal TV Tuner Cards

Compro VideoMate PVR/FM

⊞ Exceptionally clear TV reception quality, low price, FM radio, good PVR software

⊟ None

Contact Mediatech India
Phone 022-26361111
E-mail sales@mediatechindia.com
Price Rs 1,850

Linux

Xandros Desktop OS 3

⊞ Simple to use

⊟ Paid

Contact G.T. Enterprise
Phone 080-2669 5890/91/92/93/94
E-mail gtcdrom@vsnl.com

SuSe 9.3 Linux Professional

⊞ Up-to-date software bundling

⊟ None

Contact G.T. Enterprise
Phone 080-2669 5890/91/92/93/94
E-mail gtcdrom@vsnl.com

The A-List

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

Graphics Cards (Low End)

Gainward GeForce 6200 256 MB

⊞ Good performance, Shader Model 3.0 support, good value for money

⊟ None

Contact Mediatech India
Phone 022-26361111
E-mail digit@mediatechindia.com
Price Rs 3,950

Graphics Cards (Mid Range)

XFX GeForce 6600GT 256 MB

⊞ Great performance, good features

⊟ High price

Contact Rashi Peripherals
Phone 022-28221013
E-mail navinderc@rptechindia.com
Price Rs 15,000

PDA Phones

O2 XDA II Mini

⊞ Small, thin and pocketable

⊟ One-handed operation not possible

Contact Creative e-biz
Phone 022-23828100
E-mail creative@goldkist.net
Price Rs 32,000

Projectors

Acer PD11

⊞ High 1600-lumen brightness support, large 330-inch diagonal image size capability, Picture-in-Picture mode

⊟ None

Contact Acer India Pvt Ltd
Phone 080-25219520
E-mail rajesh_aiyar@acer.co.in
Price Rs 62,999

CRT Monitors (17-inch)

Acer AC715

⊞ High resolution of 1600 x 1200 @ 75 Hz, good reproduction of finer details

⊟ None

Contact Acer India Pvt.Ltd.
Phone 080-5219520
E-mail rajesh_aiyar@acer.co.in
Price Rs 6,995

CRT Monitors (19-inch)

Samsung SyncMaster 997DF

⊞ Good colour reproduction, compact

⊟ None

Contact Samsung Electronics India
Phone 011-51511234
E-mail marketing@samsungindia.com
Price Rs 13,999

LCD Monitors (15-inch)

Acer AL1512

⊞ Very competitively priced, good contrast ratio

⊟ No vertical swivel

Contact Acer India Pvt. Ltd
Phone 080- 5219520-23
E-mail rajesh_aiyar@acer.co.in
Price Rs Rs 9,500

LCD Monitors (17-inch)

Acer AL714sm

⊞ Light, good greyscale reproduction

⊟ None

Contact Acer India Pvt Ltd
Phone : 080-5219520 / 23
E-mail rajesh_aiyar@acer.co.in
Price Rs 14,999

Digital cameras (Entry level)

Canon PowerShot A400

⊞ Class leading performance and decent feature set

⊟ A bit expensive in its class

Contact Macro Foto
Phone 022-22618639
email macrofotoone@yahoo.com
Price Rs.8,995

Digital cameras (Mid Range)

Sony Cyber-Shot DSC-W5

⊞ Reproduces some great photographs, good features to close the list

⊟ Relatively expensive in its class

Contact Sony India Pvt. Ltd.
Phone 011-55006600
E-mail mktginfo@ap.sony.com
Price Rs.18,990

Home Inkjet Printers

Pixma iP1000

⊞ Economical; decent photo printing.

⊟ No output tray; no PictBridge

Contact Canon India Ltd
Phone 0124-5160000
E-mail www.canon.co.in
Price Rs 3,195

Office/ Photo Inkjet Printers

Canon Pixma iP 3000

⊞ Fast, excellent photo and text printing

⊟ No LCD

Contact Canon India Ltd.
Phone 0124-5160000
Web site www.canon.co.in
Price Rs 7,495

Colour Laser Printer

Epson AcuLaser C1100

⊞ Duplex printing, network ready, excellent performance

⊟ High Cost per page

Contact Epson India Ltd
Phone 080-3051 5000
E-mail aculaser@eid.epson.co.in
Price Rs 36,500

Mono Laser MFDs

Canon MF 3110

⊞ High speed, low price

⊟ No fax

Contact Canon India Ltd.
Phone 0124-5160000
Web site www.canon.co.in
Price Rs 19,995

Office Inkjet MFDs

Lexmark X7170

⊞ Full featured MFD, fast printing and copying speeds. decent quality photo prints

⊟ No memory card reader; B&W LCD screen

Contact Lexmark India Ltd
Phone 022-26057755
Website www.lexmark.com
Price Rs 14,999

5.1 Speakers

Artis X10 Mini

⊞ Compact, sturdy, clear sound

⊟ Slightly weak bass

Contact Kunhar Peripherals Pvt Ltd
Phone 022-56345758
E-mail salesbom@kunhar.com
Price Rs 13,500

Digital cameras (Mid Range)

HP PhotoSmart 945

⊞ 8X optical zoom, big lens results in some great photographs

⊟ Not quite pocketable

Contact J.J Mehta and sons
Phone 022-24326865
E-mail sales@jjmehta.com
Price Rs Rs.16,500

Digital cameras (High End)

Sony CyberShot DSC-P200

⊞ Compact, 7 Mega Pixel performance oriented camera

⊟ None

Contact Sony India Pvt. Ltd
Phone : 011-55006600
E-mail mktginfo@ap.sony.com
Price Rs.20,990

Mono Laser Printers

Canon LBP 2900

⊞ Great Performance, price

⊟ Lacks Duplex printing and network capabilities.

Contact Canon India Ltd.
Phone 0124-5160000
Web site www.canon.co.in
Price Rs 9,995

Brother HL 6050D

⊞ Excellent performance, duplex printing,economical printing

⊟ Not Network Ready

Contact Brother International.
Phone 022-25797470
Web site www.brother.co.in
Price Rs 35,100

Brother MFC-8440

⊞ Good print and scan quality, Sheetfed & CIS scanner

⊟ Low scan speed

Contact Brother International.
Phone 022-25797470
Web site www.brother.co.in
Price Rs 35,000

Photo Inkjet MFDs

HP PSC 2608

⊞ Inexpensive, excellent and fast text and photo printing

⊟ None

Contact Hewlett Packard India Ltd
Phone 0124-2566111
Website www.hp.com
Price Rs 14,999

MSI MegaBook M510C

⊞ Terrific performance, typical feature set, high screen resolution

⊟ Average wireless LAN performance

Contact Maxtone Electronics
Phone 022-23011434
E-mail maxtone@vsnl.com
Price Rs 68,000

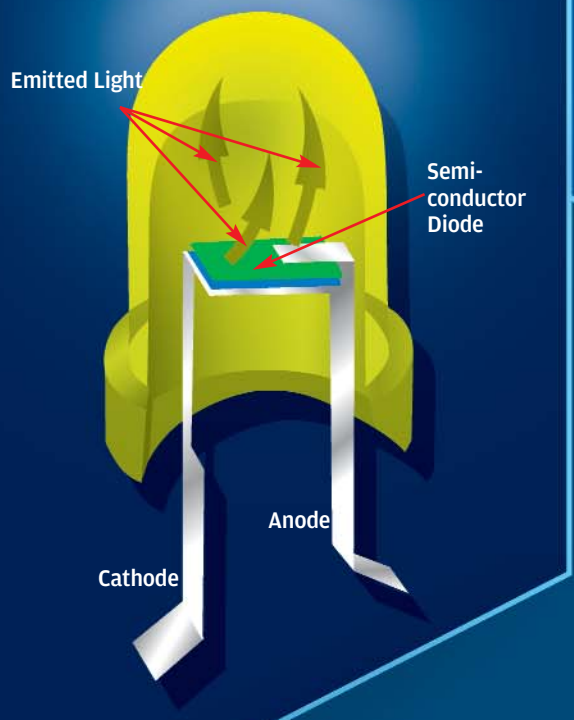
Fujitsu S2020

⊞ Hot-swappable combo drive, good graphics performance

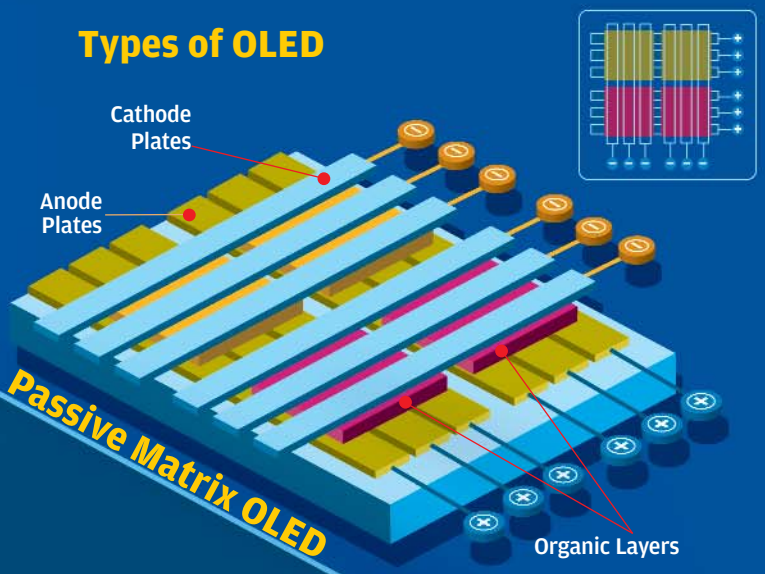
⊟ Average screen readability in sunlight

Contact Fujisan Technologies Pvt Ltd
Phone 022-56368718
E-mail gathani.paresh@fujisan.co.in
Price Rs 78,000

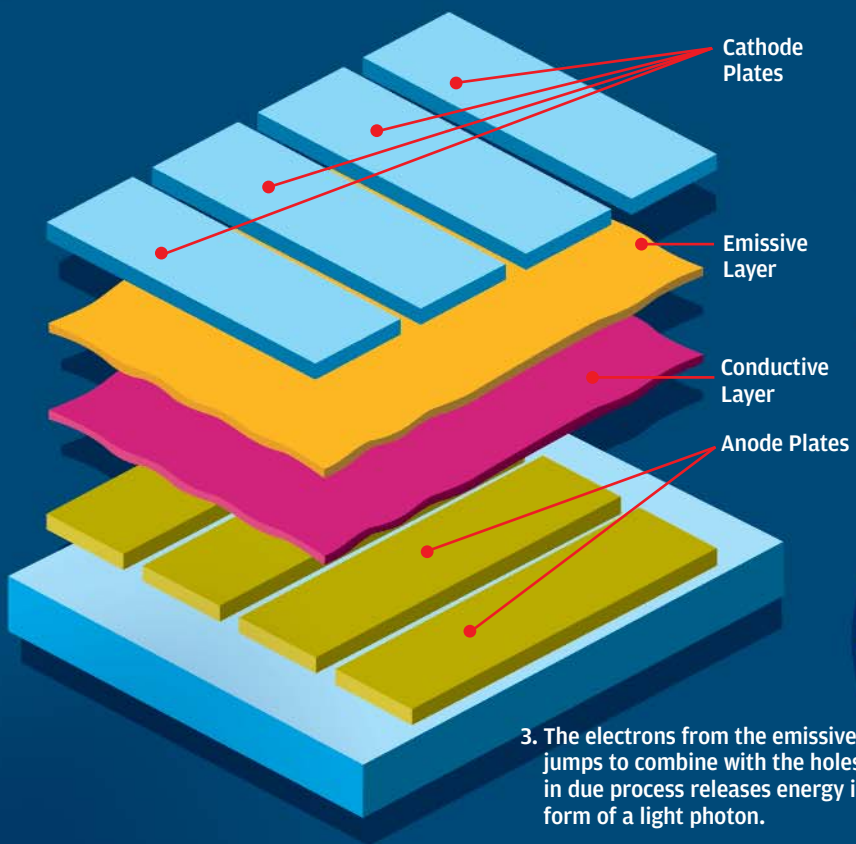
A Typical Light Emitting Diode (LED)



Types of OLED

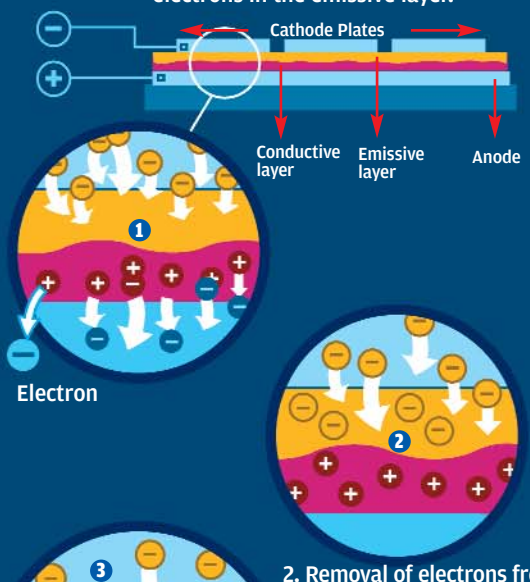


Construction of an OLED

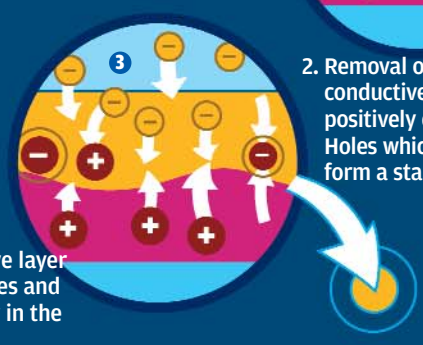


Creation of Light in OLED

1. Applied Voltage makes the current flow from the cathode towards the anode thorugh organic layers. This leads to removal of electrons from conductive layer and introduces electrons in the emissive layer.

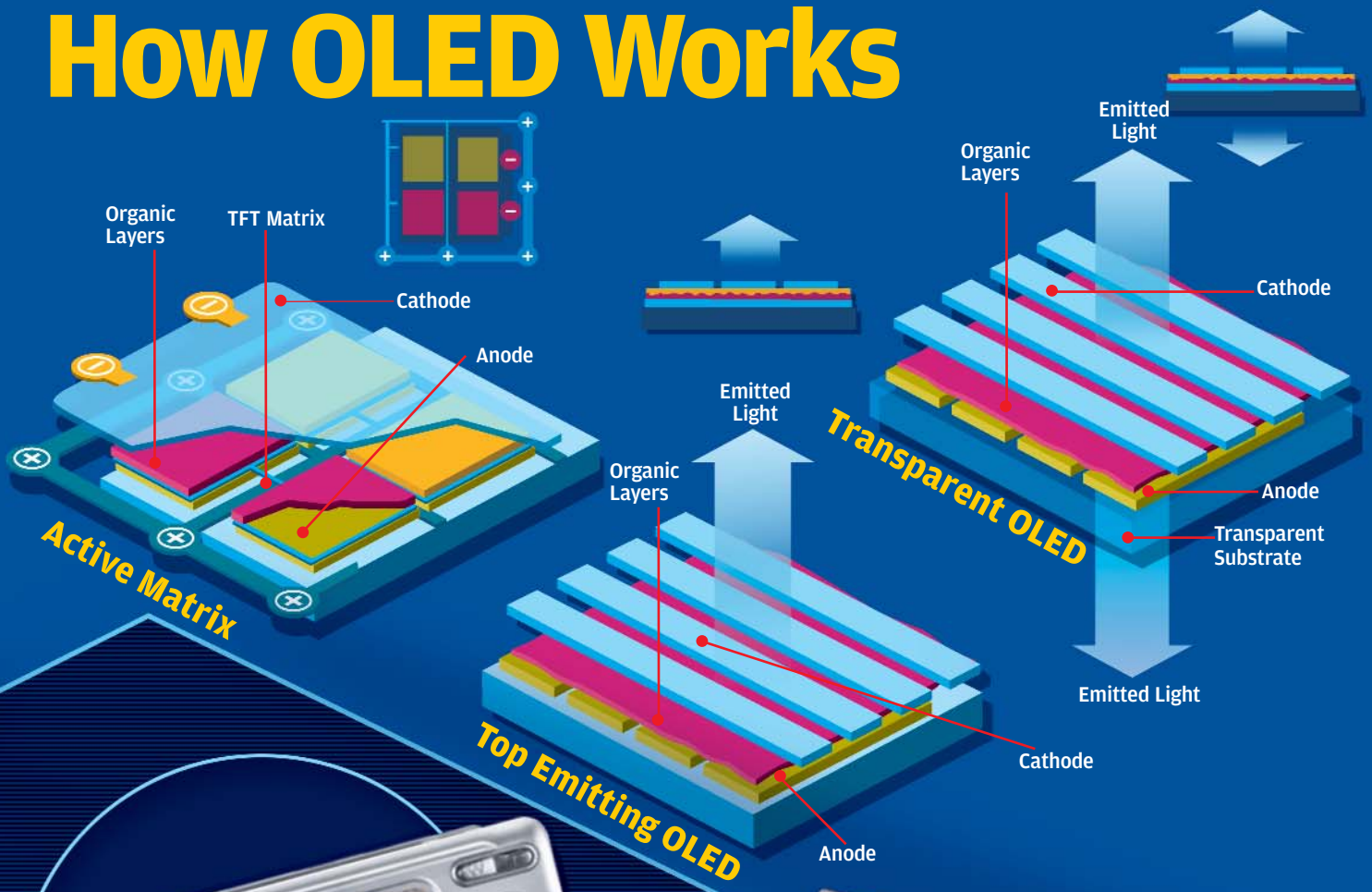


2. Removal of electrons from the conductive layer creates positively charged atoms called Holes which need one electron to form a stable atom.



3. The electrons from the emissive layer jumps to combine with the holes and in due process releases energy in the form of a light photon.

How OLED Works



Kodak LS 633—the first camera to use OLED Screen

Applications of OLED

Samsung's 21" screen based on OLED. Expect more such screens in the near future

Small OLED screens made its way on the Samsung E700 cell phone

Imaging Akhilesh Prasad

smart Business

Playing Mailman

Most businesses today rely heavily on e-mail—reason enough for e-mail correspondence to be handled exclusively by professionals

Robert Sovereign-Smith

With the increase in Internet penetration in India, more and more businesses are using e-mail to communicate with their customers, and even their own employees and branch offices.

Whether it's complaints, feedback, placing orders with distributors, or even communicating amongst employees, e-mail has become the *de facto* form of communication today. Honestly, we don't even think much about it anymore—unless you are the systems administrator, or the one paying the bills!

The Dilemma

Unfortunately, many smaller companies are still relying on their VSNL/BSNL, Rediffmail and GMail accounts to communicate with clients and colleagues. Some firms have their own domains, and have even set up Web sites, but are still using popular free e-mail services to conduct their business.

Today, when prices for all things online have fallen drastically, there's no excuse for not having a "yourname@yourdomain.com" e-mail id.

For instance, doesn't it look very unprofessional when you visit a Web site, check out the products on offer, decide you like them, and then have to write to some free e-mail address in order to get more information?

Imaging Vikram Kathare, Pradip Ingale

It would be like logging on to **www.thinkdigit.com** or reading a few articles in ***Digit***, and then having to write to **digit-magazine.editor@gmail.com** or to **thinkdigitwebsite@rediffmail.com** to send in your feedback or contact our staff!

OK! Agreed, it's ridiculous for free e-mail addresses to appear in a business environment, especially to customers. So what can you do about it? You have two options available: set up an e-mail server at your office, or get **yourname@yourdomain.com** hosting from one of the many online options.

E-mail Servers

Though this seems like a logical step to take, it is something that requires manpower and investment. It's not really advisable to set up an e-mail server on a regular machine for small companies, especially if e-mail is critical to the functioning of the company.

Also, this solution requires dedicated manpower that checks and maintains the e-mail server on a regular basis. Since most stable and free e-mail solutions are open source and built for Linux, you will need to find staff that is well versed with Linux.

However, the salaries you will have to shell out for one or two such people will easily cross Rs 1 lakh per annum. Smaller firms might not be able to afford this.

Now comes the hardware part: a typical server, is at worst, a dedicated desktop running Linux and a mail server such as Qmail, along with anti-virus software.

Though there are plenty of Windows-based mail servers, hardly any of the good ones are free. Moreover, you will always run the risk of infection by spam and e-mail worms.

Of course, your business also needs to have a fat always-on broadband pipe with minimal downtimes. For instance, if your e-mail server goes offline for a few days due to problems with your ISPs, all your mails will begin to bounce back to their senders—something you definitely want to avoid when it comes to business e-mails!

While setting up an e-mail server may be a good option for businesses with over 300 employees, it's generally considered too much trouble and a significant amount of expenditure for smaller companies.

Here at *Digit*, we run our own e-mail server, primarily because our e-mail traffic is measured in terms of gigabytes per day for over 500 e-mail users, and also because we don't have trouble finding qualified personnel. However, smaller companies might not be able to meet this kind of expenditure.

Essentially, if you are buying a new domain, all you need to do is buy hosting and the business e-mail is provided at no extra cost

Comparison Chart

Service Name	Rediff Business E-mail	Indiatimes Meramail Business E-mail	Godaddy.com Premium Plan
Number of E-mail IDs	5	6	100
Space	1 GB	1200 MB Email/1GB Briefcase	2 GB
POP3	Yes	Yes	Yes
Web mail	Yes	Yes	Yes
Domain	Registered in your name	Registered to Indiatimes	Domain charges Rs 400 Extra
Terms & Conditions URL	http://hosting.rediff.com/hosting/scripts/terms.phtml	http://meramail.indiatimes.com/meramail/help/MeraMailTerms.jsp	http://www.godaddy.com/gdshop/agreements.asp?
Price per year	Rs 1,695	Rs 1,499	Rs 1,320 + 400
50 or more IDs	Rs 10,200 for 49 IDs	Rs 10,299 for 50 IDs	Rs 1,320 for 100

Home AD

Hosted E-mail

This option is much better for the majority of smaller companies, as the hardware and software are all taken care of by the hosting provider. A company knows exactly how much it has to pay every month or every year when opting for this solution. The security is also taken care of by the hosting provider, as are all the licensing issues for software.

Setting up e-mail access for employees is then only a matter of configuring Outlook for POP3 access and creating user accounts via the hosting provider's Web interface. Here again, you can choose from a range of options.

For instance, you can either choose to go with an Indian e-mail hosting provider or opt for a cheaper US one. There is also a lot of legal jargon to sift through when you make your decision, and you should always remember to read the fine print in the terms and conditions.

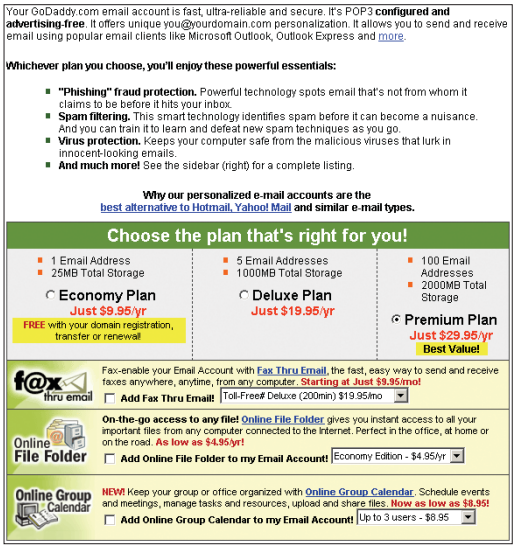
Depending on the size of your business, and the number of employees, you can make the right choice for your e-mail solution. Now, let's look at providing a solution for companies that have between 25 and 100 employees.

Services

Mention the term 'business e-mail solution' and everyone thinks of Rediff's and Indiatimes' business e-mail models. Undoubtedly, these are very popular, but not necessarily the best solutions for companies with more than 25 employees. Let's find out why...

Both Rediff and Indiatimes offer very similar services, as you will see in the Comparison Chart. Unfortunately, what they offer is just plain e-mail addresses—no hosting, no domain, and in fact, sometimes even the domain is not registered in your name, though you pay for it.

We compared them to GoDaddy.com's most basic offering to see whether it made any sense to opt for these popular e-mail hosts. As you can see, if your company has no more than five employees, GoDaddy works out to be a little more expensive. On the other hand, when you consider buying even a minimum of 50 e-mail addresses, the Indian solutions lose out completely.



GoDaddy's e-mail solutions are much cheaper for those with more than 50 employees

If you opt for GoDaddy's services, remember that with the Premium e-mail option there is no domain name included, so that will be an additional cost.

The ideal solution seems to be to buy the domain name from GoDaddy.com, and then buy the Web site hosting as well. When you buy even the most basic Web site hosting package from Godaddy.com ($3.95 a month or about Rs 2,000 a year), you are given 100 e-mail IDs with 500 MB space absolutely free.

Essentially, if you are buying a new domain, all you need to do is buy hosting and the business e-mail is provided at no extra cost. The only difference is the smaller mailbox size of 5 MB per user! You still get all the features of the premium plans as well, such as spam filters, virus checks, POP3 access and even Web mail...

In Summation

As you have now seen in this article, getting personalised e-mail addresses can hardly be considered expensive anymore; and it doesn't require a Linux guru to set up. The Web interface means that anybody with just basic Internet experience can start setting up e-mail accounts for your employees.

The fact that the solutions mentioned here cost next to nothing should make you consider opting for an outsourced e-mail solution for your business. Remember, you can't make any more excuses now; it's time to do away with that amateurish appearance by giving your business the professional look it deserves! ⊠

robert_smith@thinkdigit.com

Satish Mohan
Head—Engineering,
Red Hat India

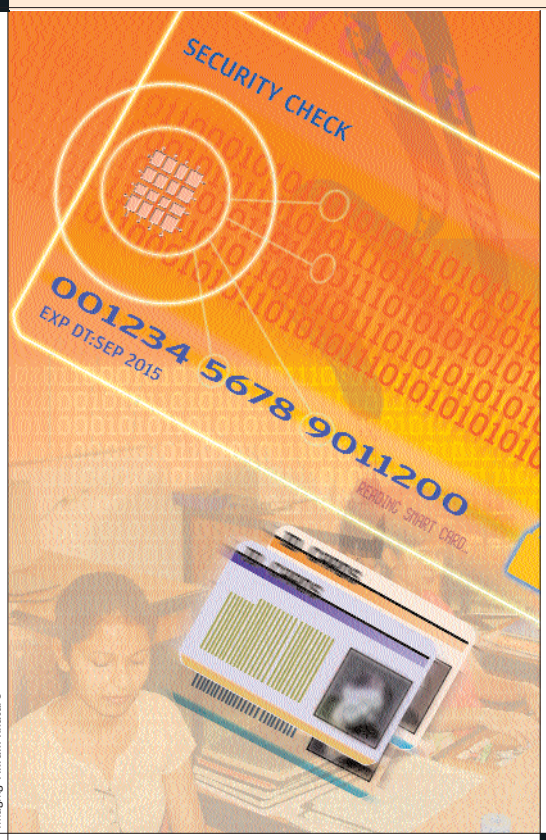
We never sidestep security—smart cards are used across our seven locations in India. Travel being frequent, it's mandatory for employees to carry individual smart cards. Entry into the main office is enabled through smart cards. Our server facility is secured through a two-step access mechanism—using smart cards and biometric fingerprinting for enhanced security.

Only select personnel have secure access to the server facility. To log in, employees swipe the smart card and press their thumbs on the biometric fingerprint reader. Having a LAN interface, the smart card and biometric fingerprint devices can be networked without a computer.

Apart from employee identification, log in and log out data, 'timestamps' are recorded in a centralised Human Resource Information System that captures online, real time data generated nationwide, which can be accessed by the HR department from anywhere. Since they are long lasting and virtually maintenance free, smart cards are indeed a smart choice.

Smart Access

Smart cards are being increasingly implemented in the workplace to record employee attendance, track their intra-office movement and maintain security. Is this just about security or is there more to it?



Imaging Vikram Khatare

Piyush Gupta
GM Operations,
Television Eighteen

At present, the deployment of access cards—proximity or smart—is limited. However, we are in the process of installing the access control system across the company. Since we are a television channel (CNBC-TV18) and a production house, we have a fair amount of expensive equipment and gadgetry that needs to be kept away from unauthorised individuals.

Another problem is that certain areas in the office that are not in use through the day end up becoming meeting points, specifically server rooms and editing bays. Access control systems and smart cards will enable us to track the movement of employees in our restricted areas.

Installing a smart access system with restricted entry levels would prevent this occurence. If need be, the concerned departments could also get a report of an individual's movement in office premises.

This would obviously increase productivity. As far as TV18 is concerned, rights to access different areas are decided by the Administration department, while the implementation is done by the Systems and IT department.

Dipayan Kar
Manager—Sales,
Zicom Security Services

Zicom provides various corporations with security solutions. With regard to access control systems, the most common ones in use are proximity and smart cards. A great deal of information regarding the bearer can be carried on a smart card. They can also be programmed and customised depending on the client's need.

We have set up and are maintaining the entire access and smart system at iFlex. Here, apart from the usual attendance records, the card also carries canteen credits of an employee. This allows an employee to simply hold his card against a reader and the requisite amount is deducted. The card, of course, is topped up with the employee's canteen allowance at the beginning of every month.

The normal employee attendance and access permissions are also programmed into the card's chip and because of the centralised nature of administration, records of an employee are constantly updated in real time.

Control

G Gopinath
Director of Rooms,
Grand Hyatt (Mumbai)

The Grand Hyatt has been using smart cards since March 2004. Although our staff doesn't use these cards for their daily access and attendance, we use them in guest rooms and residences.

The card is used as a room key that allows touchless opening of the door. By using this technology, hotel management can trace up to 150 opening and closing actions of a particular door. Due to the details entered of the opening and closing action, valuable statistical data can be gained. Lock installation schedules can be created and administrated flexibly with very little effort. The connection to other data pools via suitable interfaces enables a more cost-effective total management of the hotel due to faster sharing of information between departments.

The system also provides for a very high level of security. Also, every key is easy to replace and we can disable a lost key easily. This is the latest in room security and service and is in use at all the top hotels worldwide. Entire system is monitored by the Security department and administered by Front Office department.

Captain Sailesh
Head Security Systems,
Standard Chartered

Any security or access system set up for an organisation like ours needs to perform multiple functions. We have a number of critical locations on our premises. Each has various levels of restrictions. It is therefore imperative for us to have these restrictions embedded into the system.

All the staff members at StanChart carry an Access Control card. This takes care of the daily attendance muster and also generates reports on areas visited by an individual. The card readers situated at various critical and strategic locations in our office are connected to a central server where these reports can be generated.

These reports come in handy when it comes to ensuring that we have a secure set-up, which is a must for a bank, and also with respect to complying with the various Audits we conduct.

As told to Mithun Kidambi
(mithun_kidambi@thinkdigit.com)

Touched By Tech

Ergonomics At Work

Improve your typing safety and performance—use ergonomically designed keyboards and mice

Renuka Rane

Have you ever used a gently sloped keyboard that gives you better comfort while typing? Ever noticed how the ergonomic design lets you place your hands, wrists and forearms in a natural position for greater comfort?

Ergonomics entails matching the design of physical devices to the needs and characteristics of the human body. The term is derived from the Greek words 'ergon', meaning work, and 'nomoi', meaning natural laws—in other words, the study of any man-machine interface, whether physiological or psychological. Keyboards and mice that take ergonomics into consideration are designed to be as comfortable as possible. They increase productivity, reduce operator fatigue, and improve the work environment.

Edging Towards Ergonomics

Ergonomics is becoming increasingly important in the design and use of computer peripherals. Most conventional keyboards cause painful and even permanent injuries to the spine, fingers, neck and wrist joints. 'Overuse' injuries and cervical spondilitis are some of the persistent hazards associated with poor computer ergonomics. Hence, most ergonomic keyboards aim to get the hands and wrists in the right position.

Keyboard makers have developed a variety of alternative, ergonomic keyboard designs to improve work performance for users, protect them against Repetitive Stress Injury (RSI) and thereby bring down professional hazards to a minimum.

Moninder Jain, country manager, Logitech India, says, "Comfort is usually a personal

Illustration Akhilesh Prasad

factor. However, there are specific design traits that can determine how comfortable a keyboard is."

Jain adds, "Research indicates that the keyboard height and slope can increase wrist extension, thus increasing the risk of hand, forearm and upper extremity discomfort. As a result, you might want to consider a thin and flat keyboard design."

"The Logitech Cordless Desktop LX and MX family of keyboards, for example, are all 22.3 mm in height. They also feature 'zero degree tilt', which means the primary rows of keys are all at the same height. Also, keyboards that offer navigation controls complementary to those on the mouse also have ergonomic benefits," says Jain.

Indeed, in most ergonomic keyboards, the key mechanisms have become flatter and lighter, and require less force. An ideal ergonomic design should eliminate the inadequacies of the keyboard and mouse. It should be flexible to meet unique user needs, in regard to dimensions and otherwise, of all users.

Ergonomic input devices let you adjust your position more easily and stay further back from the screen, aiding flexibility and easing stress on the eyes, back and shoulders.

Basic Inadequacies

Have you noticed that the rows of alphanumeric keys on the keyboard don't line up in columns? This arrangement was first introduced in the mechanical typewriter to prevent the levers from colliding. Obviously, this design serves no function on an electronic keyboard.

There is no particular justification for the layout of the keys in the QWERTY format. The Dvorak layout is an alternative to the familiar QWERTY. But despite the advantages of the Dvorak layout, QWERTY has remained the *de facto* standard.

"I don't routinely recommend Dvorak to RSI patients, but encourage them to try out various modifications to see what works for them. At the very least, when they first make the switch, the unfamiliar layout slows them down, and assists the healing process in injured arms and wrists," says Dr Deepak Sharan, a Bangalore-based orthopaedic surgeon, who also provides consultancy in Ergonomics/RSI (and offers rehabilitation) to top IT companies in India.

Dr Sharan feels, "In general, any design that promotes a neutral posture of the wrist is helpful. However, like every other ergonomic tool, different people respond differently to the same product, and it's impossible to make generalised recommendations for everybody."

Preventing Injuries

The Carpal Tunnel Syndrome (CTS) and RSI are caused by a continuous stressful motion of the fingers, wrists, elbows, shoulders, back, and neck. Soreness, numbness, a tingling feeling and wrist pain are other symptoms.

"Over 75 per cent of IT professionals in India report musculoskeletal symptoms of varying severity at work," says Dr Sharan. Srikant Makarani, underwent myotherapy treatment to heal a painful wrist consition. Makarani feels that had he used an ergonomic keyboard and mouse at the outset, the problem would not have been so severe.

The Logitech V500 Cordless Mouse has an expandable chassis

"Any design which promotes a neutral position of the wrist is helpful"

Dr Deepak Sharan
Orthopaedic consultant

Makarani, has now switched to the Microsoft Natural Keyboard Elite series, and vouches for the comfort they offer over conventional keyboards.

Neeru Pahwa has been in the IT industry for the past seven years. An engineer with an MNC, she is on leave to recuperate from RSI. Pahwa says, "A year ago, I developed a painful sensation in my wrists. At first, most doctors could not correctly diagnose the reason for the injury. It was very frustrating. In a few months, the pain extended to my shoulders and neck. And now, it has affected and worsened the nerves as well."

At present, Pahwa is undergoing daily treatment for her ailment. She strongly feels that increased awareness about ergonomic devices coupled with information on correct posture will spare others from facing a similar predicament.

Preliminary findings from Dr Sharan's four-year study on RSI have revealed the following predisposing ergonomic factors responsible for computer-related injuries (percentage-wise):
Lack of appropriate breaks (86), improper monitor height (60), mouse being too high (54), resting the arm or wrist on a hard surface while typing (42), keyboard being too high (40), and bizarre leg positioning (25).

Safety And Health

Dr Sharan feels that ergonomics primarily play a preventive role—an important role, but one that cannot compensate for inefficient management or ineffective practical training.

He says, "While inadequacies in the ergonomic design of keyboard and mice do not seem to be major factors causing RSI, we do encourage our patients to try out the various input devices available and see which one works for them."

He goes on to add, "One fundamental problem with the design of alternative keyboards and mice is that it initially feels good because the stress shifts to parts that aren't injured yet. However, it does not address

Tips For A Balanced Computing Posture

- Balance your head above your torso: don't roll your shoulders or neck forward
- Place your monitor at a comfortable reading distance, just below eye level, tilted up a little, and free from glare
- Place your keyboard and mouse on a tray so you don't need to reach up to them
- Keep your keyboard lowered and angled slightly away (negative pitch)
- Keep your elbows close by your side: don't reach out. The elbow should be at an angle of 100 to 110 degrees
- Don't bend your wrists up or out
- Don't rest your elbows or wrists on anything while typing - no armrests or wrist rests.
- The feet should be placed firmly on the floor. Otherwise, use a footrest
- The back should be supported against the chair's backrest
- Take a micro break: five seconds every five to seven minutes
- Take a macro break: two minutes every 30 to 40 minutes

Courtesy: Dr Deepak Sharan

some of the root causes of RSI: repetition and static positions."

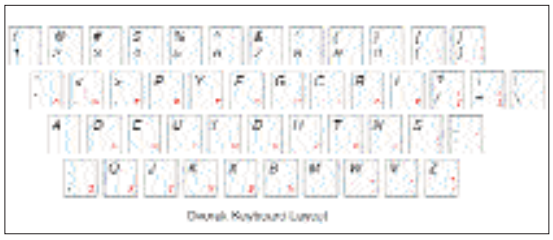
Take Your Pick

Alternative keyboards promote neutral wrist postures. They use different designs to change the user's posture. By and large, designs try to tackle the issue of wrist extension.

For instance, fixed split keyboards try to straighten the wrist by increasing the distance between the right and left sides of the keyboard so that each half is aligned with the forearm.

A complementary ergonomic mouse allows you to work comfortably for hours by keeping the hand in a neutral position. For instance, in the Logitech V500 Cordless Notebook Mouse, the patented expandable chassis articulates seven degrees to fit the hand while in use.

Then there are multi-touch fixed-angle split keyboards with a touch sensitive surface, wherein with a few finger gestures you can issue multiple commands. Multi-touch software can track and interpret the motion of several hands—and their corresponding fingers—at a time.



The Dvorak layout is an ergonomic alternative to QWERTY

In some designs, keyboards are completely split **(www.kinesis.com)**. Vertically split keyboards require the user to type with the hands facing each other **(www.safetype.com)**. The Orbitouch keyboard **(www.keybowl.com)** lets users rest their hands on two domed surfaces and then move these surfaces to generate characters. Hunt-and-peck typists may need time to get accustomed to using such keyboards; touch typists are easily able to adjust.

Increase In Productivity

Many designs result in demonstrable productivity improvements, with users improving their overall work speed.

For instance, some keyboards have one-touch buttons that take you directly to the most used programmes. By merely pressing a single button, you can start many of your favourite media applications, navigate videos and comfortably adjust settings.

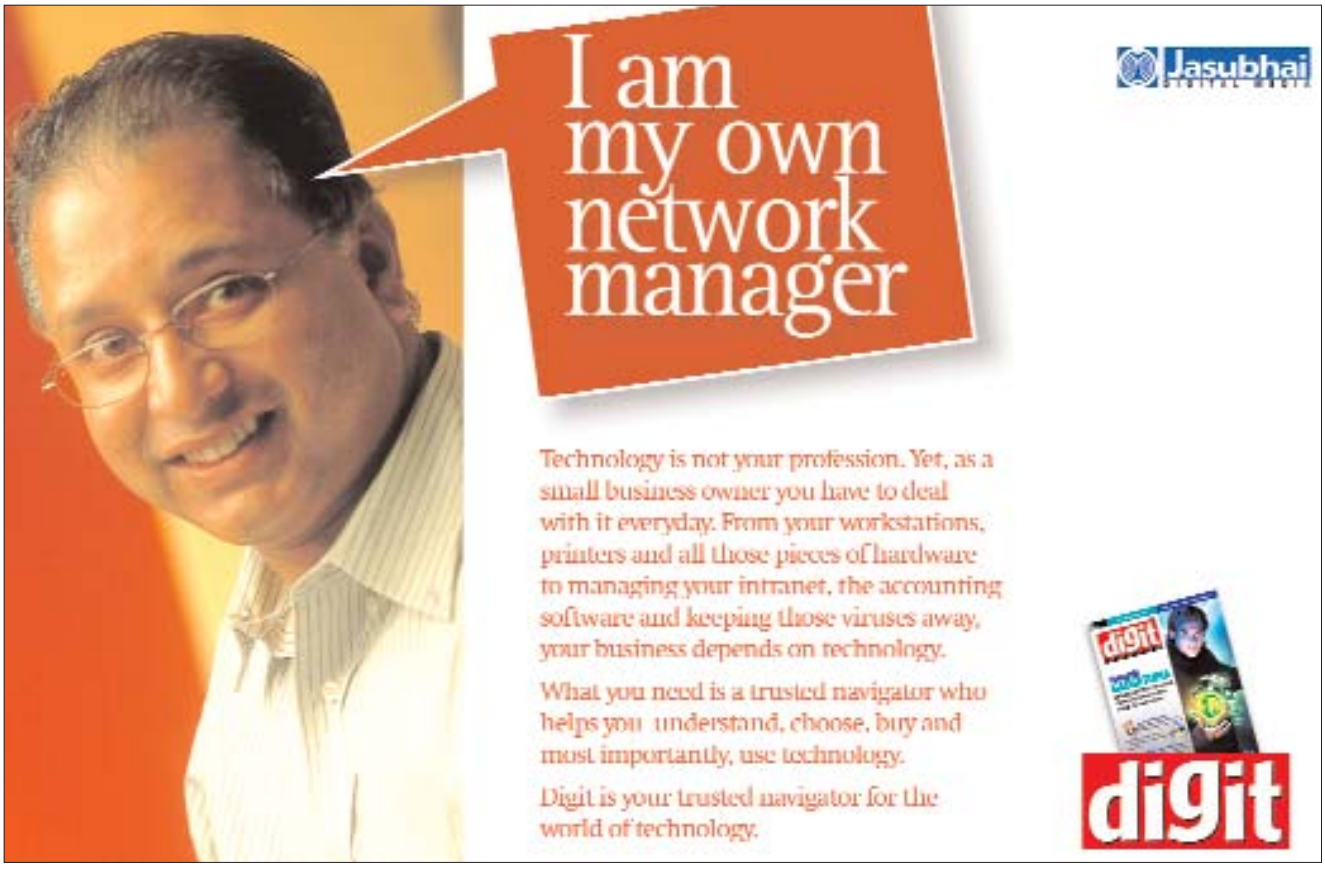
In India, Microsoft **(www.microsoft.com)** has introduced special curved and split keyboards in the Natural Keyboard Elite series. The keyboard is split into two, as a result, only minimal movement is needed to hit each key—and the hands move very little.

Ergonomic keyboards offer health benefits, as we've mentioned earlier. Still, the ubiquitious conventional keyboard has the largest number of takers because of its low cost.

Nevertheless, this equation will change as businesses find that ergonomically-designed input devices increase productivity and offer less risk of injury. Such devices could certainly become the norm one day.

If you spend a lot of time at your computer, a keyboard featuring cordless technology, a comfortable design and convenient controls, along with a complementary mouse may be worth the extra expense. ⊠

renuka_rane@thinkdigit.com



Let's Play, Gentlemen

Not exactly the real thing, but Brian Lara International Cricket 2005 is by far the best of the lot available

"What is life but a game of cricket," asks the opening screen of Brian Lara International Cricket (BLIC) 2005. You may agree with that, but unfortunately, this game is no substitute for the real thing.

To be fair to the Codemasters, the creators of this game, no cricket game has been able to emulate the true feeling of playing cricket, but BLIC 2005 comes the closest so far. The graphics are great, as is the gameplay, but the player details and commentary leave a lot to be desired.

Match Time

Before you can actually start playing a match, you have options to choose from... lots of options. Choose between a Challenge Match (England v Australia, 1887), World Series (multi team ODI Series), World Tour (Test and ODI series) and World Cup. We decided to pit India against Australia in a four-match Test series and six-match ODI series. Incidentally, six is the maximum number of ODIs you can choose in this mode.

That done, another options box popped up asking about the level of matches. Your choices are 'Village', 'County' or 'Test', with 'Village' being the easiest and 'Test' the toughest. In this box itself, you can also define the conditions for the match (Good, Warm, Humid, Cloudy), pitch (Hard, Damp, Dry, Crumbling) and the condition and make of the ball (Kookaburra, Dukes and Club).

The next choice lets you pick your playing 11. All Test-playing nations are included in the game, and there are 16 players in each squad. The names of the players have been garbled—perhaps due to licensing issues. So Glenn McGrath is G MacGirth, Shane Warne is S Worde and so on! You can, of course, edit these names to put in the actual ones, but it's a cumbersome task. Finally, it was time to play.

Gameplay

The match starts off with the toss, and an unidentified match referee accompanies the two captains to the pitch. Ricky Ponting called wrong, much to his chagrin, and India chose to bat.

No, that's not Lord's. That's the Motera at Ahmedabad

That's the start of your challenge...

Field settings can be altered, but you cannot move one fielder from a preset. You need to set the whole field

All along, the commentators (David Gower and Ian Botham were voices we recognised) are apprising you of the conditions and how "they are happy to be in the commentary box".

The Match

J Guisseppe (Jason Gillespie) was the first to mark his run-up. Among all the players, his was the face that had the maximum resemblance to a real player. As he runs up to bowl, we are scurrying to find the controls. By default, [W], [S], [A] and [D] are the controls during the game, and are also used to manoeuvre back and forth between screens when setting up the game.

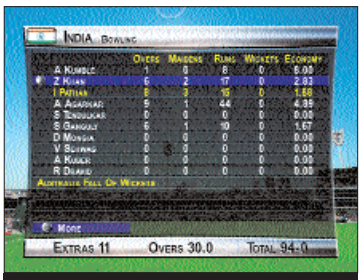
There are three vertical bars on the bottom left that tell us about the bowler's confidence level, the batsman's confidence level and the timing of a shot.

Confidence levels for bowlers and batsmen change throughout the over, depending on how many dot balls are bowled, or how many times the bowler beats the batsman. Similarly, for the batsman, they rise with every run scored or every boundary hit. Normally, as one rises, the other falls.

Gillespie lets the first one rip outside the off

Match settings can be adjusted in relative detail

Catch the throwing meter in the middle for a flat and fast throw



Scorecards are good and detailed—batting, bowling and summary

You can create custom teams of your choice and play against friends

Like your shot? Take another look. At least five angles are available

Create a new player and decide what he's going to be good at

TOP SELLING GAMES

List Courtesy **Crossword Mumbai**

1. **GTA Vice-City**
   Rs 1,299
   E-xpress Interactive Software Pvt Ltd
2. **GTA San Andreas**
   Rs 2,999
   E-xpress Interactive Software Pvt Ltd
3. **EA Sports Cricket 2005**
   Rs 999
   Gayatri Impex
4. **Brian Lara Int'l Cricket 2005**
   Rs 1,299
   Origin Marketing Pvt Ltd
5. **Counter Strike Condition Zero**
   Rs 699
   Universal Music India Pvt Ltd

stump and Sehwag connects pushing it through the covers for one, getting India off the mark.

The ball is picked up in the deep and fired in straight to the 'keeper right over the stumps. To throw, there is a meter that has to be met right in the centre for a flat, fast and accurate one. By default, if you don't interfere, the throw will be a looping albeit accurate one.

We realised that judging a run takes some time since the default (and only) angle of viewing the match is not the usual 45-degree angle that shows you the field at large. Rather, the cameras are at a 30-degree angle, from where you can only see the umpire and 'keeper. And Sehwag ran three batsmen out. Oh well!

On the whole, batting is not tough, and once you get used to reading the three different meters, you can easily judge what to do. Another little marker in the middle of the pitch shows where the ball is going to pitch and the general direction it will move in. There are times, though, when this can totally bamboozle you. It can show 'good length' and suddenly be a half tracker. Watch out!

Look And Feel

The graphics look good, and the interface is rather well done. But although details on the ground are good, stadium layouts are not very realistic. An appeal for an LBW that is turned down is explained in the replay using Hawk Eye. The same technology is also used to show a bowler's performance after every over. This is indeed realistic. Replays are also shown after every boundary, using about five different camera angles.

Characterisation

Bowlers are the most animated of the characters on the field, and also indulge in the occasional banter or sledging. Batting skills deteriorate as you go down the order, and the tailenders are prone to the odd swipe across the line leaving them vulnerable to the swinging ball.

Create A Player

BLIC 2005 also lets you create a custom player that you can add to any team. The player can be customised to be a batsman, bowler or all-rounder, and his skills with the bat can also be customised. You can then give him a face, choose his kit (good choice here) and define if he is stronger on the off or the on side.

Conclusion

Considering there are only two real options available for the cricket fanatic—EA Sports' Cricket 2005 and this—we would recommend you choose BLIC 2005 for the graphics and smoother gameplay. While most other features would match, this game is a tad better than the competition. None of them, however, are up to scratch, and we hope they get a lot better.

aditya_kuber@thinkdigit.com

Brian Lara International Cricket 2005
Publisher **Codemasters** Price **Rs 1,299** Web site **www.codemasters.com**
Minimum requirements **Windows 98SE/ME/XP/2000, DirectX 9.0c, Pentium III or Athlon at 1GHz, 256 MB RAM, Supported Graphics card, DirectX 9 Compatible Sound Card, 8x CD-R Drive, 4.4 GB HDD Space**
Distributor **Origin Marketing Pvt Ltd**

CASIO EXILIM Z750

The Casio Exilim Z750 may not be the 'newest' sensation around, but it is a sensation nonetheless. A couple of years ago, Casio launched the Exilim range, touted as the slimmest and most compact camera available. Even today, that billing stays. These stunning works of art are now adding to their capabilities and the Z750 has a whopping 7.2-megapixel CCD. Makes you wonder how they manage to keep the camera so slim...

What will further make you wonder how is when you find out that the camera also has 3x optical zoom, a 2.5-inch TFT screen and an optical viewfinder.

You'll now need to really stretch your imagination to figure out how a very slim battery in a very slim camera can capture 325 images per charge. Well, it does. So there... you don't really have to worry about how long the battery will last and whether this is just a good-looking camera.

Further proof that this beauty does indeed have brains is the fact that there are 30 preset best shot scene modes. All you need to do is set it and shoot. But wait—there's more.

In-camera special effects allow you have some fun and not capture just photos. Speaking of not capturing just photos, did we mention that you can also shoot MPEG-4 movies at up to 640 x 480 pixels at 30 frames per second? No? Well, it can! Just so you know, this is DVD-quality video.

Ergonomically as well, the camera is well-designed and features an EX button to allow quick access to shooting controls. Once in the controls, you can also make the most of the post-shot white balance and exposure adjustments to make sure your photos are looking their best.

The Exilim Z750 is in competition with cameras such as Canon's SD500 and Sony's DSC-P200 in one of the most fiercely competitive segments of the market and offers by far the largest feature set in its class. Priced at approximately Rs 19,000, this is one camera that offers great value for money and is perhaps the most stunning gift you could give anyone. Do you know our address?

Tech Shopping

NIKON COOLPIX 5900

The megapixel count of digital cameras is ever on the increase and today, a 4-megapixel camera is perhaps more the norm than an exception. Digicam prices have fallen beyond imagination, and a 4- or 5-mp camera is within reach for most.

One such camera that fits the bill for most casual users is the Nikon Coolpix 5900. A 5.1-megapixel camera, the 5900 has 3x optical zoom, 13.5 MB of internal memory—and the Nikon tag! What's better, all this is available for just Rs 14,000! Could you ask for more? Even if you did, there is!

The Coolpix 5900 combines state-of-the-art technology, great image quality and speed with an all-metal design, and is an eye-catcher. At the back of the camera is a big two-inch LCD screen, the biggest yet in the Coolpix line-up, and the new Face-priority AF feature.

Rs 14,000

Also inbuilt is the D-Lighting feature that can be selected in Playback mode—automatically compensating for insufficient flash or excessive backlighting. It ensures balanced exposure throughout the frame.

The Coolpix 5900 can also shoot VGA movies with sound at a rate of 30 fps. Available across the country, the product retails at approximately Rs 14,000 and is great as a gift—for yourself or for your near and dear ones.

SONY DCR HC 90E

If you're looking for more than stills and are interested in venturing into the moving-image arena, here's one product you should consider: the Sony DCR HC 90E. With 10x optical and 120x digital zoom, this camera is farsighted!

Rs 51,500

Armed with a Carl Zeiss Vario-Sonnar T* lens, the clarity when you capture the 530 lines of horizontal resolution is simply stunning. The optics on this little baby are a treat and perhaps the best available.

Features-wise, too, the camera packs a punch. It has a 2.7-inch wide touch panel swivel screen that rotates up to 270 degrees to provide multiple viewing angles. The truly 'steady shot picture stabilisation system' stabilises without compromising on picture quality.

One great thing about this camera is the Analogue to Digital converter that lets you connect any analogue video source to digital using the provided inputs. But this is not just a camcorder—you can also shoot stills at a resolution of 2016 x 1512 (about 3 megapixels).

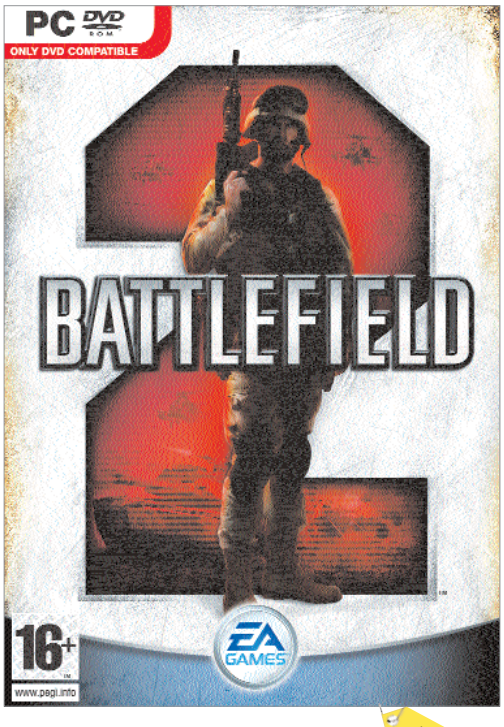
Another thoughtful addition that would be of great help to non-tech savvy users is the 'Easy Handycam' button. With a press of this button, most advanced features of the camera are 'locked out', leaving operational only the buttons essential for recording.

Priced at about Rs 51,500, this is one great deal.

BATTLEFIELD 2

Yet another war game, you'd grumble, but hold on to your horses for a bit! *Battlefield* is truly a game that's in a class of its own. This, of course, does not mean that its predecessor was a shoddy offering.

In *Battlefield 2*, players pick a side. It could be one of three military superpowers: the United States, China, or the newly formed Middle East Coalition. Of course, if you're fighting for a superpower, you have the latest modern weaponry. That means you can control over 30 different types of vehicles in combat and, here's the best part:



Rs 1,299

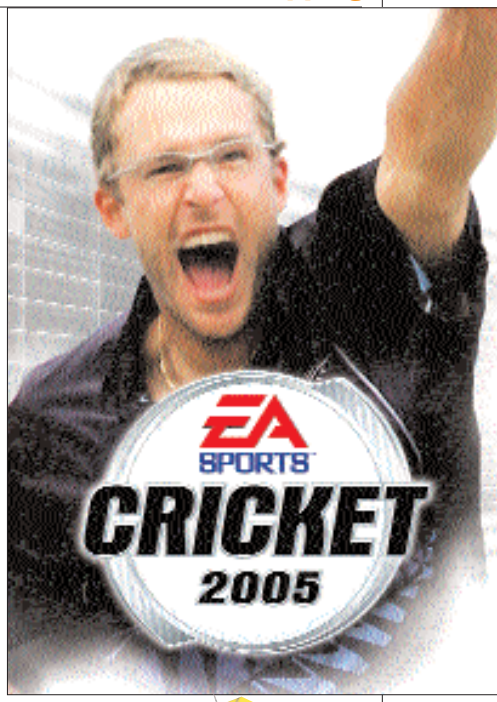
you can engage over 64 players in major battles. All of this over the Internet. Is that one major war in cyberspace, or what?

A very interesting feature of the game is the persistent character growth possibility. This allows a player to literally rise through the ranks and eventually attain the rank of General. Talk about fair and equitable promotion and acknowledgment for your achievements. Guess real life could draw inspiration from the gaming world.

Battlefield 2 has a new game engine as well as an new, improved physics system that makes all the graphics seem realistic. Not that you'd care about a new or old engine as long as the game looks and plays good. The game also brings about a lot of realism, detailed environment and realistic maps. The situations faced by a soldier in a battlefield are also reproduced very well.

We could just keep on and on about the game, but it's for you to play and experience. Do we recommend a buy? By Jove, we do—and at Rs 1,299, it's quite a bargain.

EA SPORTS CRICKET 2005



Rs 999

This is India, so whatever we do will be influenced by the local flavours. "If it's sport, it has to be cricket" sounds like a cliché, but that's the truth. So if any games producer is looking for a bestseller in India, they have to come out with a cricket game.

EA has been doing that over the years with their Cricket series and even though it has been way below par as far as serious gamers were concerned, they managed to reach the bestseller charts.

This time round, though, EA has decided to give a fair deal to the Indian gaming community. So the latest cricket offering has a TV-style presentation including a full action replay mode, a third umpire, animated ducks, TV-style overlays, and a field position editor, among other things. In addition to the international teams and bonus squads, you can also compete in the domestic seasons in England, Australia, New Zealand and South Africa.

Of course, you have a large number of stadiums, pitch types and playing conditions to choose from. What is really new is the gameplay with completely reworked graphics. Though the gameplay is realistic, the character modelling leaves a lot to be desired.

And yeah, mastering the game is as difficult as the real thing. So you can check out this Rs 999 offering from EA while we work on our timing!

GTA SAN ANDREAS - VICE CITY

No, we are not trying to be naughty by recommending this game. Don't use the Hot Coffee mod and the game still rocks!

The latest offering from Rockstar carries on the GTA tradition of climbing up the gangland hierarchy. You start off as a small-time guy who has to work his way up the, ahem, gang he's part of. Hot Coffee lets you work your way up a lot of other areas! But let's not go that way, shall we?

So what's the story this time round? You play Carl Johnson, a small-time crook who has his mother murdered and is framed for another murder by a group of corrupt cops. So you have to be on the run and come up fast to save your skin as well your broken-up family.

The gameplay and action are a treat to watch; the violence and sound effects are very realistic. Though the game has come under severe criticism from a lot of authorities in the US and a number of big stores have yanked it off the shelf, we can still buy a legit version in India.

Available for Rs 2,999, this is the game for you if violence and experimenting with the underworld is your cup of tea!

Rs 2,999

PHILIPS HTS3000

This is a model for the masses. A 5.1 home theatre system, this one sure packs a mean punch. At 94W RMS, it is not an earth-shaker, but is enough for a small living room. The system looks nice and has an external amplifier with a 5.1 Audio output, PC/VCD/CD input and 5.1 inputs.

Bundled is a remote control that handles individual speaker controls. However, the feature that will attract shoppers is the ability to handle almost any disk format, including SACDs and DivX CDs or DVDs in addition to playing regular DVDs, VCDs and MP3 disks.

This product is priced at a sweet Rs 9, 990, which is enough to tempt any shopper to get one. Compared to other brands in the same price category, this system takes the cake, considering the features and performance. If you're on a limited budget and looking for a reputable system, your search ends right here!

SAMSUNG HT-P50

For a user with a budget of around Rs 35,000, we recommend the Samsung HT-P50 home theatre system. This system has all the frills that you can think of and also includes a USB port for connecting any USB devices and playing content directly from the system. It also features an FM tuner for when you just want to listen to radio. The media this system can play includes DVD Video, DVD Audio, DVD-R (W), CD-R (W), JPEG, MP3, WMA and DivX disks.

The form factor is extremely classy, with four satellite speakers and one central speaker and subwoofer. The USB port lets you connect your portable MP3 player and use it as a part of your home theatre system. You can now listen to your MP3s in 5.1 surround!

Inputs include auxiliary, an optical digital input and the USB port. Outputs include a SCART socket and composite video output, making it ready for HDTV as well as regular TVs.

The system has ample power and peaks at 1000 W RMS, enough for you to make yourself heard across your building!

At a price of Rs 34,400 the Samsung HT-P50 does not pinch your pocket too much, and does provide you with a fashionable home theatre and powerful features to boot.

SONY DAV-LF1

Let's get one thing out of the way first: this is a high-end system and costs Rs 99,990. Still interested? Read on...

The highlight of this system is that it is wireless. Yes, now no more wires to disrupt your interiors—well, almost. The DAV-LF1 still needs a power cord from one of the rear speakers and another main cord connecting it to the other. The other speakers require wires as usual. Just place them where you want, configure the system, and start watching movies and listening to music.

The system is powered modestly enough at 600 W RMS. However, it is the drop-dead gorgeous looks of this system that will attract you more than anything else.

There are four ultra-thin column speakers with one centre satellite speaker. You also have two wireless satellite speakers that can be hung on the wall right beside the centre channel. The subwoofer build quality is solid and is sure to shock and awe your neighbours at peak volume.

This may be a pricey system, but hey, if you want to complement your plasma or projection TV, you just can't go wrong with this baby!

DELL XPS GEN 2

The XPS Gen 2 from Dell is an exquisite gaming machine loaded to the gills with features that stand to redefine gaming on a mobile platform. Based on Intel's Centrino platform, it incorporates the latest avatar of this mobile platform, known as Sonoma.

Armed with a top-of-the-line Pentium M 2.13 GHz processor with a 533 MHz front side bus and 2 MB of cache memory, it has enough juice to rock your games. 512 megs of DDR 2 memory comes as standard which can be further upgraded to 2 GB for blistering-fast game loading speeds. To make gaming characters come alive, the Gen 2 incorporates nVidia's best-in-class GeForce Go 6800 Ultra PCI-Express graphics core.

All the action can be viewed on the crystal clear 17-inch display that Dell is renowned for. Encased in silver-and-grey plastic, this second-generation XPS laptop has much better visual appeal. To liven up the gaming experience, Dell has introduced colourful lights on the top lid, air vents and speaker vents. You can assign up to sixteen different colours to these lights!

Rs 1,50,000

It's not all looks, though. Ergonomics, too, is spot on; the keyboard is sufficiently large, with a good amount of real estate on which to rest your palms.

The XPS Gen 2, being a desktop replacement, does not fall short in offering the numerous ports or connectors that a desktop PC offers. In all, there are six USB ports, a FireWire port, DVI and VGA connectors for connecting an external display, and an S-Video connector for hooking it to a TV. For online gaming, the XPS comes with an Ethernet port and offers wireless connectivity via the inbuilt Wi-Fi 802.11b/g adapter. Two unique features are the Secure Digital card reader and a PCIe card slot.

If you're an avid gamer looking for a portable gaming solution, this is a godsend. But if you want to lay your hands on this baby, you'd better start bugging your cousin in the US, as Dell is not offering this in India yet.

Priced just short of Rs 1.5 lakh, the XPS Gen 2 is the ultimate gaming laptop available.

ACER FERRARI 4000

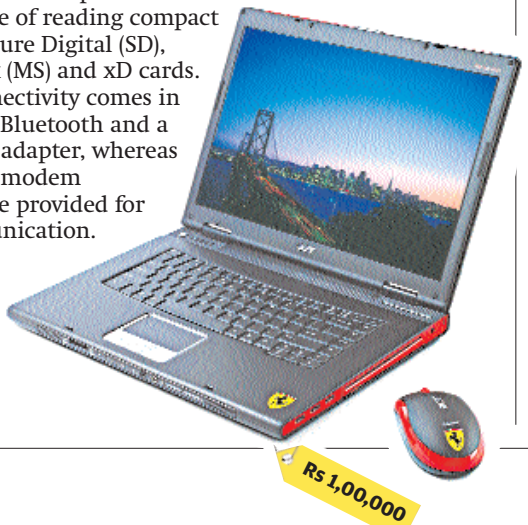
Acer's penchant for speed materialised in the form of their alliance with Scuderia Ferrari as an official partner for laptops. To commemorate this alliance, Acer introduced a series of special-edition Ferrari laptops starting with the Ferrari 3000 series introduced last year. The Ferrari 4000 is the latest in this series, sporting a unique blend of cutting-edge technology and exotic materials.

The 4000 sports a matte-black carbon fibre case with the prominent prancing horse logo shouting for immediate attention. The deep scarlet sides of the laptop make the Ferrari connection come through clearly. Despite being made of lightweight material, the Ferrari 4000 tips the scales at 3 kg, which by today's standards, is a tad too much on the shoulders (or the lap).

Acer doles out 1 GB of DDR 333 MHz memory to make most of your applications zoom by. The 15.4-inch, crisp display is powered by ATi's Mobility Radeon X700 graphics core. To cut down on the thickness, the Ferrari 4000 is provided with a slot loading, multi-format, double-layer DVD burner.

While all common ports such as USB, FireWire, S-Video, VGA and DVI are available, Acer has also included a multiple card reader capable of reading compact flash (CF), Secure Digital (SD), Memory Stick (MS) and xD cards. Wireless connectivity comes in the form of a Bluetooth and a Wi-Fi 802.11g adapter, whereas Ethernet and modem connectors are provided for wired communication.

Priced at around Rs 1 lakh, this is *the* gadget to have if you're a speed freak.



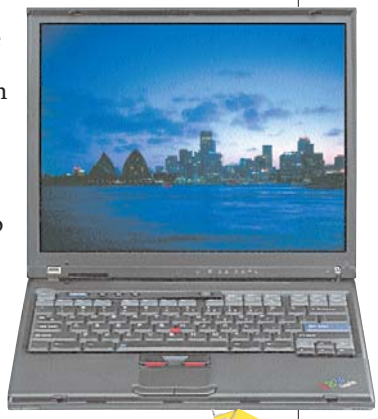
Rs 1,00,000

LENOVO THINKPAD T42

The ThinkPad T42, a worthy successor to the almost-famous T41 notebook, is the latest in the thin-and-light series from Lenovo. The ThinkPad laptops have always been appreciated by professionals for their rock-solid reliability coupled with good performance, and the T42 doesn't disappoint on either count.

Beating at the heart of the T42 is Intel's Centrino technology, delivering exceptional performance without compromising on battery life. The T42, like all other ThinkPads, has the same understated design, with most surfaces finished in black.

Build quality is top-notch, and it oozes from every nook and corner of the laptop. The metal hinges that clamp the top lid are tough nuts to crack and will take the worst fall without a scratch.



Rs 1,00,000

When it comes to the configuration, the T42 isn't spectacular, but has enough horsepower to get most of your work done. It comes with a Pentium M processor running at 1.7 GHz, 512 MB of DDR RAM, a 40 GB hard drive and a combo drive. The upgrades, though available, are unreasonably expensive.

The T42 makes do with just two USB ports, a gigabit Ethernet slot, a modem, two PCMCIA slots, a parallel port, a serial port and a VGA port for connecting an external monitor. Frills such as FireWire or Card readers don't make it to this laptop.

The Lenovo T42 comes preloaded with Windows XP Professional and also boasts of out-of-the-box support for Linux distributions such as RedHat and Suse.

Priced at around Rs 1 lakh, the T42 is our choice for the best executive-class laptop one can buy off-the-shelf.

IPOD MINI

Talk of MP3 players or portable music players and the first image that springs up is the plain white face of the iPod. The impact of the Pod has been so great that it has become synonymous with portable music players. What was it that made it a cultural phenomenon, a must-have accessory?

Rs 12,000

We think the intuitive user interface and a radical yet minimalist design might have helped. The fact that it is a hard disk-based player means it can store many more files than conventional portable players. Add to this the image Apple had built up over the years of being a niche über-cool brand, and you have a winner. Apple also came up with an online music download service, iTunes. At 99 cents or around Rs 42 per download, this was a definite steal. Pity iTunes isn't accessible from India yet.

Available in different capacities, the Pod that has caught our fancy was the iPod Mini. With a 4 GB (or 6 GB) storage capacity, the Mini can hold between 2,000 and 3,000 songs of MP3 quality. The metallic-coloured bodies also add to charm of this baby, which is slightly larger than a credit card.

With street prices starting at Rs 12,000 for the 4 GB variant, this nifty little gizmo is well within the reach of any average buyer. Of course, those with deeper pockets can always go in for the 20 GB iPod or the U2 special-edition ones.

IRIVER H 10

They call it the soul machine, one look at the Ferrari red and metallic colour combination and you know why. The minimalist navigation design and the colour TFT LCD screen gets any gadget lover hooked. A visual treat, you say, plug in those ear phones and this gadget sings as well. With a 5GB solid state storage capacity and with features such as FM recording, voice recording, photo and text viewing and multiple language support the H10 is a serious contender for the top spot in its category. The player has the basic equalizer modes and 30 preset ones as well but what is sorely missed was a line in plug, which comes only with a cradle. The H10 series however does not offer support to all the different file types, only the basic MPEG and WMA for audio and JPEG for image. At Rs 16,000 this is priced at a premium when compared to the competitors but for a sub 100gm, pocket sized 5 GB mp3 player we think it just about makes the cut.

Rs 16,000

Rs 15,000

CREATIVE ZEN MICRO & ZEN NEEON

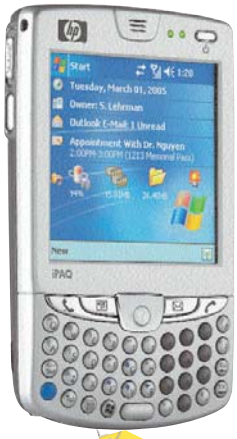
Creative's MuVo2 never quite took the MP3 player market by storm. Many said it was the clunky design that did the MuVo in. Not to be upstaged, Creative has hit back with their international bestsellers—the Zen Micro and the Zen Neeon.

With refreshingly new designs coupled with a 5 GB hard disk, these players are out to deliver a one-two knockout punch. The best thing about the players is that you don't have to convert or reconvert your music files into any proprietary format—something both Sony and Apple players demand.

The Neeon's 5 GB capacity means that you can store a large chunk of your music collection on the player; of course, you can also store other data files and use the player as a portable drive. The interchangeable covers and the changing neon backlight add a large dose of pizzaz to the gizmo. So go ahead and co-ordinate your MP3 player with your wardrobe... and feel free to get right back at us if this showstopper doesn't catch everyone's attention!

At a starting price of Rs 15,000, the Zen Neeon is directly aimed at the would-be iPod Mini customer. For an MP3 player that sounds great and makes you look cool, it isn't too expensive.

HP IPAQ HW6515 MOBILE MESSENGER



Rs 29,990

For those who gallivant around the globe, the new iPAQ hw6515 Mobile Messenger is the perfect companion. One of the latest PDA phones launched by HP, the hw6515 Mobile Messenger is true to its name and keeps you connected no matter where you are.

Featuring a quad-band GSM phone (850/900/1800/1900 MHz), the device also supports GPRS/EDGE technologies, which provide high-speed connectivity on the go.

Boasting of an internal GPS receiver, the iPAQ hw6515—coupled with GPS software and digital city maps—is capable of pinpointing your exact location and provides you with turn-by-turn driving instructions. The integrated QWERTY keyboard allows you to easily compose e-mail, notes, text, and instant messages. The inclusion of two memory slots—one SDIO and one mini-SD—allows expansion of memory as well as installation of expansion cards such Wi-Fi, barcode scanners and more.

What's more, you also get a 1.3-megapixel HP Photosmart Camera inbuilt so you can capture stills and videos—and share them instantly via MMS or e-mail.

Running Microsoft Windows Mobile 2003 Second Edition, the hw6515 is powered by an Intel PXA270 Processor running at 312 MHz complemented by 64 MB of ROM and 64 MB of SDRAM. The 240 x 240 transflective touch screen can display 64K colours.

Connectivity options include Bluetooth v1.2, Infrared and USB using the bundled cradle. The 1200 mAh rechargeable Li-ion battery is user-replaceable.

HP has also bundled exclusive applications like iPAQ Wireless, GSM/GPRS Settings Manager, HP Profiles, MMS Composer, Bluetooth Manager, iPAQ File Store, iPAQ Backup, Pocket Panel Lite, and HP Image Zone for Pocket PC.

The package includes a removable flip cover for the screen, as well as a belt clip so you can carry it around wherever you go. Priced at Rs 29,990 excluding taxes, this is one workhorse you should seriously consider.

PALM LIFEDRIVE MOBILE MANAGER

If you need an integrated camera or a cell phone, look elsewhere. But if you're looking for a device that can manage your chaotic life schedule, the aptly named LifeDrive Mobile Manager is for you.

The device runs on Palm OS 5.4 (Garnet) and is powered by a 416 MHz Intel XScale Processor complemented by 64 MB of onboard RAM, and offers a whopping 4 GB of storage space. It looks sleek with a brushed, muted aluminium finish, a big screen (a 320 x 480 TFT touchscreen) and four dedicated buttons for music, photos, home (main menu) and the file browser, along with four-way navigation and a centre-click button.

Rs 26,500

The 65K colour screen is gorgeous. Multimedia entertainment is provided by the mobile version of iTunes. Other pre-installed goodies include the Blazer 4.1 Web Browser and the Versa Mail 3.1 e-mail client. Apart from these, the software disk provided has some more cool stuff such as Adobe Reader for Palm OS and Real Rhapsody 3.0, amongst others. 'Documents to Go' allows you to work with MS Word and Excel files.

You can connect the LifeDrive to your phone via Bluetooth and send and receive SMSes and make calls. In terms of connectivity, the LifeDrive has it all: Wi-Fi, Bluetooth, USB 2.0—but no infrared. But will you miss it?

Synchronisation with a PC requires the bundled application, but you can use it simply as a removable mass storage drive by clicking a single button labelled 'Drive Mode' on the touchscreen. You can then simply copy and paste files onto the drive. All files—music, movies, and what have you—that are added get updated automatically into the media library, and there is no stifling requirement of using a proprietary software to transfer media files.

A PDA phone or a camera this device is not, but what it is is a brilliant organiser and portable entertainment centre that will organise your life. And it does that job quite beautifully.

At Rs 26,500, it's not that expensive either. Buy a cheaper cell, and use this, what?

PALM ZIRE 31

Rs 9,999

If you're a first time user or if a basic PDA is what you are looking for, the Palm Zire 31 is made for you. This affordable PDA runs Palm OS 5.2.8, and is powered by a relatively modest 200 MHz Intel ARM-based processor.

Inbuilt memory is only 16 MB, but that should be enough for you to store years of appointments and thousands of contacts—with room to add software. The S-DIO slot lets you add more memory, too. Screen resolution is 160 x 160, supporting thousands of colours.

The design is compact and fairly attractive. There are two hardware buttons that launch calendar and contacts. You can also reassign these buttons to applications of your choice. A five-way navigation key is also provided.

Graffiti 2 lets you input text in natural handwriting, either in the Graffiti area beneath the screen or anywhere else on the screen. You can even use the Zire 31 as an MP3 player, though you would need to invest in an SD or MMC card for this.

Bundled software includes standard PIM applications such as Contacts, Calendar, World Clock, Memos, Tasks, Calculator, Expense, and Note pad. Additional software included features RealOne Mobile Player, palmOne Photos, Audible, Handmark Splash Money and Mobile DB, powerOne Calculator, Palm Reader, AddIt, and Solitaire.

At just Rs 9,999, the Zire 31 is surely the most affordable and easiest way to enter into the world of mobile computing.

SONY ERICSSON K750I

This is the latest flagship model of Sony Ericsson's extensive mobile line-up in India. A one-line description would probably go: a tri-band GSM phone with a 2-megapixel camera, FM radio tuner and an MP3 player, with a Memory Stick Duo (MSD) card slot.

The K750i is stylish, but not overly so, making it a good phone for professionals. The buttons have decent tactile feedback, but the five-way joystick is too sensitive and results in navigation errors—until you get used to it!

The camera is perhaps its best feature, and is accompanied by a pretty decent flash. There are various digital camera options such as 4X zoom, Macro mode, night mode, a cool Panorama mode for shooting wide scenes, and even a Burst mode for capturing four shots in quick succession. In movie mode, you are offered the option of either shooting for MMS or high-quality video. Overall, the camera is excellent.

Special controls include a media button on the left, which launches either FM or your media player. On the right are volume controls that double up as zoom controls when in camera mode and as the shutter button for the camera. Above the joystick is an application button that gives you quick access to various functions. In our case, this button let us end hung games.

The speaker could have been louder, and can hardly be heard on our noisy crowded streets. You cannot listen to FM without plugging in the bundled handsfree, and you cannot set the phone to ring both via the external speaker as well as in the handsfree earphones—only when set to silent mode does it ring in the ear!

Connectivity is achieved via Bluetooth, GPRS, infra-red, and the bundled USB cable. Overall, the phone is great to use, has tons of functions, a great camera and excellent battery life of about three days normal usage. At Rs 19,995, the price may be a little steep, but the camera makes it worth it.

NOKIA 6255 (CDMA)

The Nokia 6255 is perhaps one of the best CDMA mobiles available in India. For Rs 14,995, it seems packed to the brim with features as well as two screens—an external mini screen and the internal main screen—which are standard in flip phones today.

The 6255 comes with an integrated VGA camera with flash, capable of capturing still images as well as video. It also features 5X digital zoom and a night mode, as well as a self-timer. The phone is Java capable—great for all the gamers!

The main screen is 128 x 160 pixels with 65K colours. The external mini screen supports 4K colours. The keys include a five-way joystick and a user-configurable soft-key plus standard keypad.

In terms of entertainment, apart from Java games, there's the inbuilt FM radio tuner and music player which supports MP3 and AAC files.

Connectivity options include Bluetooth, infra-red, and a high speed CDMA wireless data IxRTT connection. There's the WAP 2.0 browser, and the Nokia PC Suite is bundled. The Li-ion battery offers between 100 to 176 hours of standby time.

Overall, this phone isn't half bad for its price, and considering that Indian CDMA consumers have long been demanding a larger variety to chose from, this is one model that takes a step in the right direction.

SAMSUNG SGH-D500

Measuring just 93.5 x 45.7 x 23.6 mm and tipping the scales at just 99 gm, the D500 is the latest head-turner from Samsung. A tri-band GPRS mobile phone, the D500 boasts of features like a slide-out keypad, MP3 playback, external speakers and a 1.3-megapixel camera with flash.

Encased in a beautiful glossy black casing, the device sports a 176 x 220 LCD that can display 262,144 colours. Apart from the screen, the front facia includes a four-way navigation key with a centre button, two soft keys, a send and hang-up key, and a cancel button. The left side of the phone has a conjoined volume control key and an IR port, while the right side has a dedicated camera key and a port to connect the external speaker. The bottom of the phone slides out to reveal the backlit 12-key numeric pad and the camera at the rear.

Connectivity options include Bluetooth, USB and SyncML apart from infra-red. Other features include video and voice recording, 64 polyphonic ring tones, SMS, EMS, MMS, e-mail, and Java 2.0.

Standard applications such as World Time, multiple alarms, Calculator, Converter, Timer, Stopwatch and Organiser (with monthly, weekly and daily views) are also available. Three Java games—*Forgotten Warrior*, *Freekick* and *Arch Angel* are pre-loaded. Memory capacity is 96 MB, shared dynamically between applications. However, there is no provision for memory expansion.

The 1.3-megapixel camera can capture stills at a maximum resolution of 1280 x 1024, and has three different quality settings. The shooting mode can be set to single, multi, mosaic or night. The ISO setting can be kept at Auto, or set to speeds of 100, 200 or 400.

The flash can be switched off or set to Auto, Permanently On, or Shoot-Only modes. Video can be captured in 3gp format at a maximum of 176 x 144 pixels, again with three quality options.

In terms of usability, the phone provides a standard icon-based menu, accessible using the soft-key and the navigation button.

The size of the keys is a bit of an issue, and you'll have to use the tips of your thumbs to operate the device. The slider can be operated easily using one hand. The 262K colour screen is vibrant. MP3 playback is quite decent using the inbuilt speaker, and is even better with the external speaker module. Battery life is average at best, with the internal battery lasting between two and three days.

On the whole, the phone is great for users who want a sleek model. Price? Just Rs 21,399!

TISSOT T-TOUCH

Rs 28,000

What do you want in a watch? A timer, stopwatch, accurate time, and an alarm, right? How about maybe a compass, a thermometer and an altimeter? No, we haven't lost our head—such a product does exist.

What's better is that it's a touchscreen wristwatch and not some bulky device you would have to lug around in a bag.

Also, the fact that it's good-looking and has the Tissot label makes it even more desirable, don't you think? The Tissot T-Touch, a first-of-its-kind wristwatch to include all these features in a brilliantly-finished chrome-metal casing is something you simply must have on your wishlist.

In all, there are eight functions on the watch including the Altimeter (in feet and metres), Chronograph (split and add time), Compass, Alarm, Thermometer (in °C and °F), Barometer as well as Date and Time (with a choice of 12H and 24H).

Operated by gently tapping on the each of the crystals underneath the watch face, you can activate any of the seven functions. This simple feature allows quick access to the features, unlike in many other watches where you need to scroll through to access the functions.

Although the touch-sensitive display is the T-Touch's main feature, other features are just as impressive. Of course, most of these features are useless for the average day in the office. But if you are an active person with an interest in hiking, climbing, or swimming, you'll find these functions very handy.

At approximately Rs 28,000, the T-Touch is not too expensive for a watch with so many functions. Hey, you wouldn't be buying it to wear it to the movies anyway, would you?

OMEGA SPEEDMASTER X-33 MEN'S PILOT WATCH

Rs 1,30,000

A Quartz watch with broad arrow hands, tachymeter bezel, sapphire crystal glass and 3ATM water resistance, the Omega X-33 is something to die (or kill) for!

This watch looks as good as a watch possibly can. The Omega Speedmaster X-33 simply leaves you awestruck from the moment you lay your eyes on it.

It is equipped with a battery that will last 24 months on the average with the alarm and light in use. If some of the functions are not used often, battery life extends to almost 36 months. That gives you six months to get to the moon at closest passage, a year on the Martian surface, and six months to return! Incidentally, that's what the watch has been designed to endure. What's earth?

The X-33 is equipped with a digital readout in the centre that displays time, alarm status, Mission elapsed time, mission elapsed alarm, Digital Universal Time (DigiUT), its alarm, and yes, countdown and chronograph.

The dial is covered with a scratch-resistant sapphire crystal and is encased in a solid titanium case and bracelet. You want the price? It's about Rs 1,30,000. What did you expect? It's supposed to last a trip to the moon!

CASIO PRG 80 1V

Rs 15,000

Another watch for the outdoor person, the Casio PRG 80 1V, too, packs in some super features. Scoring over the competition, this watch has a solar power cell in addition to a normal cell.

One of the main problems in using a watch is trying to view it in the dark. If you thought Indiglo was the pinnacle of watch lighting, wait till you see this. The PRG 80 incorporates an Auto EL backlight that automatically deactivates when the surrounding light is sufficient, and activates it under dim light or dark conditions. No more fumbling for the light button in the dark—on your wrist, anyway!

Other features include an inbuilt compass, altimeter, barometer, and thermometer in addition to the usual world time, stopwatch and timer. Before you start wondering, yes, there is an alarm. Actually, there are five!

Of the special features, the compass uses an inbuilt direction sensor to detect the magnetic north, while a pressure sensor detects changes in air pressure and converts the result into an altitude of up to 10,000 metres. The Height Gain function sums all the metres you may have climbed, and you can see the total ascent at a glance.

Inbuilt pressure and temperature sensors measure the barometric pressure and the temperature respectively, giving you all the necessary readouts at the push of a button.

There are other, basic functions, such as world time, which displays the current time in major cities and specific areas around the world.

The five daily alarms remind you about recurring events with an acoustic signal at the time you set. You can also activate the hourly time signal that indicates each full hour. The damages? About Rs 15,000. Not a bad deal at all!

The Guardian, August 11, 2005

When Laptops Are A Pain In The Neck

JACK SCHOFIELD WRITES about the horrors of an increasingly wirefree world. What? Yes, the notebook computer has its negatives thanks to the ergonomic disaster that it is or so Schofield and Jeremy Clarkson seem to agree...

Jeremy Clarkson and I seem to have something in common: we've both been laid low partly by our laptops. Physically, if not financially, he's much worse off than me. According to his column in The Sunday Times, he's visiting an osteopath for a slipped disc, whereas I'm just having physiotherapy for a cricked neck. But in a world where Wi-Fi and notebook computers are replacing wired desktops, this is very likely to become an increasingly common problem for computer users over the next few years.

Clarkson got the same instructions as me: sit up straight. When computing, you should try to keep your ears, shoulders and hips in line, with the top of your computer screen just below the height of your eyes.

"Fine, but I use a laptop and if I get the screen high enough, I can't see any of the keys," wrote Clarkson on the subject.

As a touch-typist, I don't need to see the keys, but any laptop with a fixed keyboard makes it impossible to get both the screen and keyboard in an ergonomic position at the same time. To do that, you need to plug in either a separate monitor or keyboard.

My problem arose partly because of the perfectly natural tendency to use the fastest machines around, and both my newest computers - an IBM ThinkPad X31 and an Apple iBook - were notebooks. Both have Wi-Fi, too, and if you work at home, you get extra points for staying-home time.

As a result, I've spent too much of the past 18 months slumped over a notebook rather than sitting upright at a desktop. This helped accustom my upper spine to being in a bad position. Then I woke up one morning with a cricked neck, and the pain didn't go away in a couple of hours, it got worse. And worse. Soon, the only way I could raise my right arm was using my left.

As someone who has read more than one book on computer ergonomics, I was surprised to find my physiotherapist so hostile to notebook PCs. With the keyboard at the correct height, I felt my typing position was comfortable, and my posture was not particularly different from the one used when reading books.

However, keen readers can change their posture at frequent intervals, holding the book in a different position. That's much harder to do with a notebook computer, and I haven't been doing it. Nor have I been taking 10-minute breaks every hour, which is something that I tell everyone else to do.

Notebook computer ergonomics are dreadful, and the built-in keyboards have become far worse as notebooks have become thinner. Few, if any, now offer keys with decent amount of travel.

There are solutions. For example, if using a notebook for any length of time, buy a "notebook riser" or ergonomic stand to lift the screen, or a docking station, and plug in a separate keyboard and mouse. Wireless versions are a good idea. As I can testify, the alternatives can be extremely painful.

To read the complete column, go to: http://snipurl.com/mediawise1

NY Times, August 16, 2005

From Blog To Stage, A Pundit Examines The Power Of Politics

LEE PAPA, A blogger, shows his face in "The Rude Pundit in the Year of Living Rudely," a one-man show at the New York International Fringe Festival

Who knew that the Internet would turn out to be a new frontier for theater; a stage that lets us choose our exits and entrances while playing any part we please? Everyone with a blog is a solo performer. And all theatrical forms are blogworthy, from diarylike realism to explosive satire.

Political theater thrives on the Web. No censorship, no compromise. Mainstream news media writers and cartoonists get to shake off time and tone constraints. New talent shows up regularly.

The Rude Pundit roared into the blog arena two years ago, and his audience keeps growing. His ferocious column (subtitled "Proudly Lowering the Level of Political Discourse") hurls analysis and abuse at the war in Iraq, religious fundamentalism, America's immigration policies, Congressional scandals and press timidity (rudepundit.blogspot.com).

The author's identity is unknown to most readers. Last week, though, he unmasked himself in a one-man show, "The Rude Pundit in the Year of Living Rudely," part of the New York International Fringe Festival. "He" is Lee Papa, a tall, stocky young man in his 30's with long hippie-esque blond hair, who is a writer, professor and sometime actor.

Mr. Papa was seated in a chair with his back to us when the stage lights came up. ("Us" being the 40 or so people who lounged on couches and secondhand chairs at Dixon Place, the hip performance space on the Bowery that looks like a vintage living room.)

Naked, pink-flesh figures were propped up on the wall behind him. They wore the masks of the famous: Ronald Reagan; President Bush and the first lady, Laura Bush; Vice President Dick Cheney; the presidential adviser Karl Rove; and the conservative commentators Rush Limbaugh and Ann Coulter. Some had penises, some didn't. You could hear people asking whose was bigger. Why did Mr. Limbaugh and Mr. Rove have breasts instead? And what about Ms. Coulter? Like the versatile Greek prophet Tiresias, she had been granted breasts and a penis, but she bested him, she had both at once.

Mr. Papa is a tornado of a writer. So it was refreshing when he began the show with memories of his adolescence. We're all under some kind of blight as adolescents. His blight was Ronald Reagan, the man who "hounded my life for eight years." In the Rude Pundit's world, Mr. Reagan was the cruel patriarch who set the world on its downward spiral of greed and aggression.

What followed was a set of free-form riffs, separated by blackouts. If you have qualms, prepare to feel them now. I felt fine most of the time, and so it seemed did the rest of the audience. ... *(more)*

For complete column, go to http://snipurl.com/mediawise2

CNet.com, August 9, 2005

The iPod's Achilles' Heel

DAVID CARNOY, EXECUTIVE Editor, CNet Reviews has a few gripes with the (gulp!) Apple iPod. Yes, he managed to find some and now he puts them in black-and-white

Before all the diehard Apple and iPod fans get out their flamethrowers and torch the hell out of me, let me start by saying: I'm with you, the iPod rules, it's great, I own one, I bought one for my wife, and I plan to name my next baby Apple--and not just because Gwyneth Paltrow did. OK, so I'm lying about the baby part, but the rest is true. I like the thing--a lot. But at the same time, it's not totally for me.

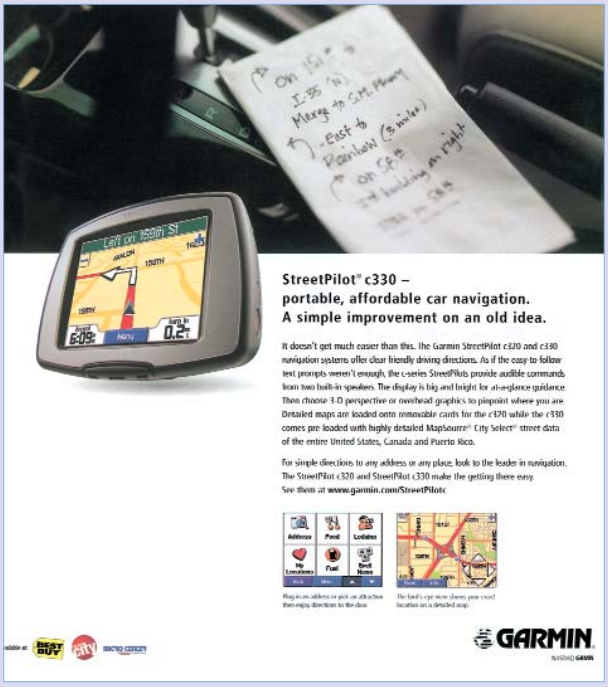
First off, I'm pretty lazy when it comes to organizing my music. Or, more accurately, I just don't have the time to deal with it. Sadly, I recently resorted to having someone else rip the remaining half of my CD collection--about 200 discs--for me. I used a new service called Awaken, which sent me a preaddressed FedEx box. I dumped the discs into the supplied cake boxes and a few days later got back three DVDs filled with my MP3-ified tunes and all of my CDs neatly organized in a giant binder. Awaken, like several other companies that provide this type of service, charges around $1 per disc for its deluxe package, which gives you those little extras such as the CD carrying case.

If you have a substantial CD collection, you'll easily end up paying as much for ripping as for the iPod itself. But if you're strapped for time, it's money well spent. But the fact that such services even exist exposes a dirty truth about Apple's little white music player: a lot of iPod owners fail to use their players to their fullest potential. You know the whole line about how we only use a fraction of our brain's power--the same goes for the iPod. I don't have any hard numbers, but I would bet, judging from the informal polling of friends and coworkers, that only about a quarter (or fewer) of iPod users are really getting the most out of their iPods. I meet plenty of people who have 20GB models and only have a couple of gigabytes worth of tunes on them. Their iTunes databases are a mess, they don't make use of playlists, they couldn't care less about podcasts and audiobooks, and they end up listening to the same songs over and over. These are the same people who tend to ask me, "How do I get my friend's collection off his computer onto my iPod?"

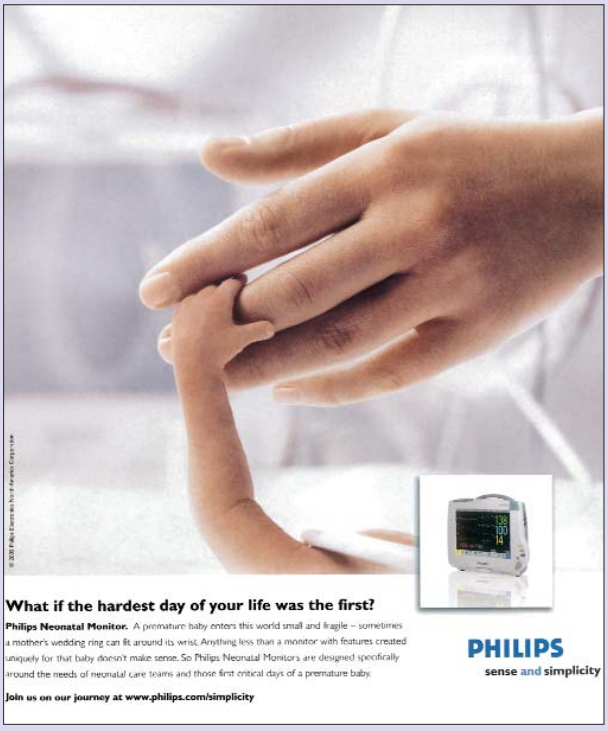
The long and short of it is that the iPod is a great device, but it's wasted on a lot of people. As easy as it is to use, it's not for everybody--particularly not for lazy or ultrabusy music lovers who can't afford to impulsively download new albums from the iTunes Music Store at $10 a pop. (An unnamed CNET vice president reports that he's particularly susceptible to this phenomenon--especially after a few glasses of wine--and that iTunes hangovers are nasty, even for VPs).

Ironically, the biggest chink in the iPod's seemingly impenetrable armor is users' failure to take full advantage of it. And that's exactly why I'd venture to say that ultimately the way for any manufacturer to truly challenge Apple will require both an elegant hardware solution as well as a revolutionary, new music-delivery system. ... *(more)*

For the complete column go to: http://snipurl.com/mediawise3



Lost?
The age old way of taking directions on a piece of paper has been enhanced by technology. That's the point this ad makes and it does well. The reference to directions on a paper in the background with the same directions on the new Garmin device in the foreground connect instantly.



Tech For Babies
Neonatal monitors that are created around a premature baby's first few days is what this ad is for. Add to it the tagline "sense and simplicity" and we have a winner. Tech at its best.

Stampede For Used Laptops

Nearly 5,500 people had gathered to buy 1,000 used laptops for $50 (Rs 2,200) in Richmond, Virginia in the US on August 16. When the shop opened, a stampede ensued—someone tried to drive a car through the crowd, and an elderly man was thrown to the pavement.

Gadget Can 'Cure' Cellulite

A gadget that removes cellulite has been a success in the US. The gadget works by using infra-red light to break up the fat that causes the cellulite. The Syneron Vela-Smooth then gives a deep massage, followed by a suction action. The treatment costs £80 (Rs 6,300) per session.

Escape

WE ARE NOT AMUSED

Google's Chief Gets Googled

To use a stock phrase, it's a delicious irony. Google's chief executive Eric E Schmidt is miffed at the fact that CNETNews.com published personal details about him—details that became available through a Google search.

In the first week of August, Google told CNETNews.com, a technology news Web site, that they would not answer any questions from CNET's reporters until July 2006. This move came after CNET published an article in July that discussed how Google can uncover personal information, and which raised questions about what information Google collects about its users.

The article, by Elinor Mills, a CNET staff writer, gave several examples of information about Google's chief executive Schmidt, which could be gleaned from the search engine. These included that his shares in Google were worth $1.5 billion (almost Rs 6,525 crore), that he lived in Atherton, California, that he had been a fund-raiser for Al Gore's presidential campaign, and that he was a pilot.

Illustration: Harsho Mohan Chattoraj

After the article appeared, David Krane, Google's director of public relations, called CNET editors to complain, said Jai Singh, the editor-in-chief of CNETNews.com.

"They were unhappy about the fact that we used Schmidt's private information in our story," Singh said.

He added, "Our view is what we published was all public information, and we actually used their own product to find it."

Singh also said Mr Krane called back to say that Google would not speak to any reporter from CNET for a year.

Singh, who has worked in technology news for more than two decades, said he could not recall a similar situation. "Sometimes a company is ticked off and won't talk to a reporter for a bit," he said, "but I've never seen a company not talk to a whole news organisation."

Win!

My Desktop

Think you have the most beautiful, most innovative desktop around? E-mail with subject **'My Desktop'** and your postal address to **mydesktop@thinkdigit.com,** and Digit will publish the most eye-catching of them each month.

Next month's winner will receive **EA Cricket 2004** Game

There is no winner for this month. The majority of entries we received used desktop theme packs. This is not allowed!

UNUSABLE!

Nokia CDMA 2112

Ah! Those ubiquitous devices that all of us draw out of our pockets like gunslingers and shoot off calls and messages to anywhere in the world... but wait! It's not always that simple—especially if you're using the Reliance IndiaMobile service in India.

We took a look at a Nokia (yes, the same reliable, easy-to-use Nokia) model—the 2112 CDMA—available from Reliance, and tried to send an SMS. Here are the steps involved:

Menu > Messages > Text Messages > Create Message > Add Number > [Number selected] > Options > [Option 4] Edit Message > Type Message > Options > Send.

Whew! But there's another way too... scroll down to the number you want to send the message to and then:

Options > [Option 13] Send Message > [Type Message] > Send. That's roughly 11 (or about five) steps to send a message. Actually it's 15 (or 18) if you count having to scroll to choose 'Edit Message', but we will be nice!

Now, we wonder why Nokia went ahead and messed around with a perfectly good, fast, intuitive and easy-to-use menu system and created this monster. Or was it Reliance's doing?

Most other Nokia phones (read GSM) allow three-step access to the message window (and just one step in some of the new Symbian 60 phones). Whoever the culprit, the menu system is just terrible!

DigiPick of the month

Well Receiving Transmission

This month's winner is
Ravneet Randhawa
House 138, Katari Bagh,
Kochi - 682 004

He wins **The Unix Programming Environment** by Brian W. Kernighan & Rob Pike Published by Pearson Education (Singapore) Pte. Ltd.

WIN!
Send in your entry and you could win a **Canon Pixma iP 1500** just by sharing an amusing picture with a tech angle to it. The picture should be shot by you, and should not have been published anywhere earlier. E-mail your picture with the subject **'DigiPick'** and your postal address **on or before 15th of this month** to **digipick@thinkdigit.com.** One prize-winning picture will be published each month.

FINALLY!

A Multi-Buttoned Mac Mouse

Apple users may possibly frown at this new, think-outside-the-box offering. It's just not Apple's style. It's a mouse with more than one button—four, to be precise.

And there's a 360-degree scroll ball, one that can scroll diagonally as well! Apple is calling it the 'Mighty Mouse'.

And mighty it is, compared to the ghastly hockey-puck mice that shipped with the colourful iMacs, and other stubbornly single-buttoned Apple mice.

For some it is Apple's finest mouse ever. Others call it a Trojan horse—one of several entry points into the Windows-user territory. Another indication of popularising Mac culture amongst Windows users.

Although a departure from the traditional one-button mouse, the Mighty Mouse looks similar to the other Apple models.

A major difference is the small scroll ball at the head of the mouse, which can move cursors diagonally, even up and down across display screens, and can be pressed to 'click' functions.

Since long, Apple has built added functionality to its OSes to accommodate multi-button mice. But there were no Apple mice to take advantage of this. We wonder why Apple took this long to bring mouse technology to the nineties!

Mighty Mouse, which connects via a USB port, will retail for $49 (Rs 2,130). It is PC-compatible, but cannot move the cursor diagonally on Windows.

So, is this the beginning of the end of the traditional difference between PCs and Macs? A multi-button mouse eliminates one of the important differences.

Recall that in May, Apple said it would cease using IBM processors in favour of Intel chips. With the new mouse, Apple is seeking to tap into the market for accessories.

This may be a leap forward for Mac users, but need Windows users pay any attention? Lara Luepke of ZDNet Australia sums it up best: "For Apple Mac OS Tiger users, the scrollwheeling Mighty Mouse is worth a look; for everyone else, better options are available."

"MIND THE BOMBS"

Outrage Over London Underground Terror Game

UK tabloid *The Sun* recently discovered an online game in which players have to stop bombs detonating on the London Underground system.

In a sick take on the "mind the gap" warning (referring to the gap between the train and platform) that sounds over the Underground every time

People Who Changed Computing

An All-Round Genius

Born in Hungary, John Luis von Neumann was a child prodigy. After his early education in Budapest, he moved to Zurich and later to Berlin, where he received degrees in chemical engineering and mathematics.

John von Neumann

Von Neumann was a brilliant mathematician and a staunch supporter of the stored-program concept.

His first association with computers was with the Harvard Mark I (ASCC) calculator. His greatest contribution to computing was the EDVAC in 1945—his single-handed creation. This is when the elements of the stored-program concept were introduced to the computing world.

The foundations of von Neumann's work were laid out in the "First Draft of a Report on the EDVAC" in 1945. It presented the first written description of the stored-program concept.

The report organised the computer system into four main parts: the Central Arithmetical unit, the Central Control unit, the Memory, and the Input/Output devices. This is popularly known as the 'von Neumann architecture'. Sounds familiar? It's this that has become the CPU-Memory-IO system that all computers use today!

The Institute of Electrical and Electronics Engineers (IEEE) continues to honour von Neumann through the annual IEEE John von Neumann Medal, "for outstanding achievements in computer-related science and technology."

Bluff
YOUR WAY THROUGH

Microsoft .NET

To be honest, .NET is a lot of things. Actually, we know so little about .NET that we were ourselves tempted to bluff *our* way through it this month!

Well, anyway, .NET is "software that connects information, people, systems, and devices. It spans clients, servers, and developer tools"—whatever that means. Just remember to use those words when talking about .NET!

Now, Microsoft .NET consists of many things:

- The .NET Framework 1.1, used for building and running all kinds of software
- Developer tools, such as Microsoft Visual Studio .NET 2003
- A set of servers
- Client software such as Windows XP

Now you at least know what .NET is. So, what's the .NET Framework? Basically, it is "an integral Windows component for building and running the next generation of software applications and Web services."

In addition, it is composed of the common language runtime (CLR) and a unified set of class libraries.

Pay attention! The CLR is responsible for run-time services such as language integration, CLR security enforcement, and memory, process, and even thread management.

Here's how to sound as though you know about .NET programming: just say, "I'm currently working on cross-language exception handling. That has a lot to do with strong typing: and runtime binding as well; .NET makes it easy for me to use class libraries to do the exception handling without having to go into the intricacies of Windows Forms."

Of course, that doesn't make any sense, but then again, who'll ever know?

DIGIT DIARY

When The Heavens Opened

While we were busy in a story idea meeting, the Rain Gods were releasing a century of frustration on Mumbai—and we had no idea!

As the warnings started, panic slowly filled our hearts as water seeped into our office. While some preferred to stay back, others were eager to reach home. Preethi, the bravest of us all, firmly wrapped herself in her red windcheater and left—not knowing that her usual two-hour journey was to become a 48-hour ordeal.

People who lived nearby, Ram and our ed Deepak, were home without a fuss. Renuka was lucky too; she reached home in an hour, albeit *sans* footwear. But some of us—Ishan, Mithun, Raaabo, Aditya, Vijay and Sanket—stayed overnight. We played cricket in the corridors using a stress ball—releasing stress. We ordered pizza, watched movies and slept on the carpeted floor (some used the conference table). Meanwhile, the water level rose alarmingly and some cafeteria windows were broken to let the murky water out. Then, Raaabo and Vijay decided to brave Mother Nature and headed home at 3 am, despite pleas, and only reached at 11 am.

The rest of us woke up bleary-eyed to another urgent situation—a homesick tantrum-throwing Mithun. Finally, we resolved to troop back. Some walked 40 km for 12 hours through waist-deep—and at times neck-deep—water. Avoiding carcasses, debris and open manholes, it's a miracle we reached home safe and sound.

An enforced holiday followed. And now, post the rains, our meals are served in a small foyer that has sunlight streaming through the glass ceiling. Our café remains uninhabitable. Once, when we tried to lunch there, it was like sitting on the beach... the rain lashed at us through the broken windows: surf's up!

And so is our team—back to our schedules and enjoying every moment!

a train stops, the game is called *Mind the Bombs*!

The game's Web site invites you to "do your part in the war against terrorism: e-mail this FREE game to all your friends, family and associates to enjoy!"

It also declares itself as "dedicated to the good people of Britain—specifically those individuals directly affected by terrorist activity in London. God save the Queen".

A disclaimer, evidently by creator Keith Fieler to avoid litigation, states: "This game is in no way affiliated with Transport for London."

The Sun quoted London Transport spokesman: "Passengers on the Underground and their staff were faced with horrific scenes on July 7. Anybody involved in the making or viewing of this game would do well to stop and think about that. We will never forget those who were killed and injured in the attacks."

A representative of London Transport Users Committee raged: "Londoners are just getting on with it and we think people should show this game the contempt it deserves. I don't think anybody will find it very funny or very pleasant."

Remember, a lot of people actually died in the exact same situation— trivialising it does nothing but hurt.

IPODIFIED BABIES

Your Baby's An iPod

Some people have weird ideas—like the folks at ipodmybaby.com. Based on the idea that some people treat their iPods as if they were real babies, this site is selling baby clothes—you can dress babies in them to make them look like iPods!

At the iPod My Baby Web site, you can order a pink, blue, or white baby 'onesie' emblazoned with the signature iPod scroll wheel. But why? Obviously because "the only thing cuter than a baby, is an iPodified baby," as the site states.

People hooked on their iPods will probably find it cute. But the rest of us just don't get it—why would you want to make a baby look like an iPod of all things?

Anyway, the onesies come in three sizes and cost $15.95 (Rs 695 approx). Also available at the site is a service called iPod My Photo, which turns a picture of your child—or anybody else—into a mock iPod ad that can be transferred on to T-shirts, greeting cards and more.

Ho-hum. Yet another indicator of how popular Apple's portable music player is...

GAME STUFF FOR REAL CASH

Mugged Online!

A Chinese exchange student has been arrested in Japan on suspicion of an online mugging spree—he used software bots to beat up and rob characters in the online game *Lineage II*.

The student then sold the characters for cash, the *Mainichi Daily News* reported via *New Scientist*. The audacious stunt involved robbing online gamers of several online goods, including the 'Earring of Wisdom' and the 'Shield of Nightmare'.

whatwerethey thinking.com

www.hud-son.com

Seriously... what were they thinking? Hudson Forest Equipment, as the name suggests, deals in forest equipment. Since the name hudson.com may have been taken, they've chosen hud-son.com. OK, understandable. But one look beneath the address bar and you will leap with fear. We did.

The top left of the first frame—yes, there are many frames—has a photograph of a forest. Relevant, but it's hugely underexposed and looks tacky. And it gets tackier. The right part of the top frame has links placed one below the other and squeezed.

The second frame is a scroll line that says "Scroll down to view our many products". Thanks for pointing out the obvious! The next frame shows a flag of France with a link—"Our Canadian Office". Click that, and you are taken to page that's entirely in French, with a link to Freetranslation.com. Whatever.

www.hud-son.com

Scrolling down (as advised—remember?), the shock deepens as seven rows of nearly 40 photos and links appear. These are their products. The background is a deep green (the 'forest' theme all over again), and there are more scrolling marquees saying a bunch of things.

The real reason we got stuck here was a picture of a newborn in the second frame from top. The caption says "New Addition at Hud-son: Taylor David Hollenbeck". Now, the owner's name is Hudson and the company is Hud-son. Assuming Taylor is a new entry to the Hudson family, why should they ever write about a new addition to Hud-son? Unless this is a new tool we don't know about... once more, we suggest, don't go here. Will you listen?

The mugger was an invincible character controlled by a software bot, and the stolen stuff was sold on a Japanese auction site, *Lineage II* publisher NCsoft claims. So how was the unnamed student able to do this?

The thing is that bots are pretty much invincible in games of this sort—human players don't stand a chance.

If you're wondering what this means, recall that we reported in this space about the game *EverQuest*, where game items can be exchanged for cash.

How this works is people play online and try hard to gather game items. And they value the items so much that they're willing to buy and sell them.

In other words, the players are literally living online: their online experiences are actually translating into trade in the real world. And items can be sold, usually online, for thousands of dollars.

New Scientist quotes security guru Bruce Schneier as noting in his blog: "I regularly say that every form of theft and fraud in the real world will eventually be duplicated in cyberspace. Perhaps every method of stealing real money will eventually be used to steal imaginary money, too."

Ren Reynolds, a UK-based PC games consultant says, "There's an ongoing war between people who make bots and games companies," Reynolds told *New Scientist*. "And making real money out of virtual worlds is getting bigger."

Reynolds says the growing number of online game players will only increase the incentive for scammers. "There's nothing exceptional about the virtual world. Wherever there is that sort of money, there's always crime too."

There are reports that some online scammers are using 'sweatshops' in China and Indonesia, where people monitor teams of bots to generate money while trying to avoid bot traps! ■

Compiled by Aditya Kuber, Ishan Prakash, Ram Mohan Rao and Renuka Rane

Blog WATCH

We bring you another eclectic selection of blogs this month: from a bard blogger who dares you to guess his or her identity, to an office-goer who reflects on the experience of e-mailing limericks and finally to funding on RSS in Silicon Valley

Cliques, Clicks, Bullies And Blogs
http://spaces.msn.com/members/hatefilledchild/

I am the Walrus
I am one of a long list of people, you shall see.
But I will never reveal my true identity.
Crack the mystery and you shall win a prize.
But beware of my most frequent lies.
The name that though call me upon
is not that, of which my father titled his son.
Some would say that I speak a total of zero
Colonel Klink is not fond of my heroes
You would know who I am by now,
if you'd followed the quest.
I hold a golden badge upon my chest.
The very person that I most defame is myself
Jackson is my name, and I am a shit-dang-woozit-head.....shelf...
Or maybe I am none of the above.
I may be someone you all hate,
or someone you all love.
Rest assured my identity will not be found tonight.
So you can all just go and fly a fucking kite.

Nina Turns 40
http://ninaturns40.blogs.com/nina_turns_40/

light verse geekitude
I believe I mentioned that we at eVil corp. moved to a new office suite in June, whereby I lost the perk of my own private office and now share a bigger, better-viewed office with two co-workers. This arrangement has its disadvantages, but one of the fun things about it is that one of the said co-workers is quite funny (he does a kick-ass Kermit THE frog impression which never fails to crack me up). He is young and charming and cute, an advantage to anyone, but what won him a special place in my wee little heart is that he partakes in email limerick smackdowns with me. We fire emails to each other filled with silly limericks composed on the fly. You'd be amazed at how much this relieves stress, and how much joy it brings me... Feeling emboldened by this, I asked him the other day if he liked to write double dactyls. He gave me a look. That look means you've crossed the line from fun, silly, office goofing into pure geekitude. He had no idea WTF I was talking about. Sigh.

Naked Conversations
http://redcouch.typepad.com/weblog/

$100m VC Fund for RSS companies started
Silicon Valley Reporter's Tom Foremski reports: Jim Moore and John Palfrey have launched RSS Investors with $100m of capital. It is the first VC fund with a focus on Really Simple Syndication, (RSS), the syndication technology at the heart of media technologies such as blogging and corporate news communication.

This shows that at least in some sectors, venture money is getting smarter after several years of demonstrating it had less vision than Ray Charles.

Check your TQ

Of Black Ducks

1 Name the mouse with a 360⁰ scrolling ability designed specifically by Apple to work with Mac OS X Tiger.

a. Multi-mouse
b. Mighty Mouse
c. Mac Mouse
d. Major Mouse

2 Identify the correct domain name for Palestine?
a. .pl b. .ps
c. .pt d. .pe

3 What are Super Scorpios?
a. A species of scorpions
b. A video game
c. Underwater robots used by the US Navy
d. Satellites sent by NASA to Mars

4 Kevin Turner, the new COO of Microsoft, was formerly employed with which company?
a. Sun Microsystems
b. IBM
c. Wal Mart
d. McDonalds

5 What is the size of the world's largest digital panoramic photo?
a. 6.5 million pixels
b. 8.1 million pixels
c. 1.9 billion pixels
d. 2.5 billion pixels

6 What does LLU stand for?
a. Local Loop Unbundling
b. Laser Light Unicode
c. Last Leap at UCLA
d. Local Label Uniform

7 According to a recent study by SciVisum, a UK-based Web site testing firm, which department of an organisation was held responsible for majority of the company's Web site crashes?
a. Human Resources
b. Information Technology
c. Marketing
d. Logistics

8 Who are Palamida and Black Duck?
a. Mathematicians
b. Hackers
c. Software licensing specialists
d. Cartoon Characters

9 What incentive is the Scottish government offering its adult citizens who take up IT training?
a. A weekend cruise to Hawaii
b. A personal computer
c. £100
d. Guaranteed employment

10 What does the e-border scheme of the UK government pertain to?
a. A border surveillance programme, it collects biometric data on visitors to the UK
b. It creates a virtual boundary around all government offices in the UK
c. It is a military strategy developed for the UK Army
d. It rewards citizens who provide information about infiltration

Got an interesting question? Send it in with the answer to **tq@thinkdigit.com** Mark 'TQ' in the subject area.

Did You Know?

Script kiddies are inexperienced crackers, who download software from the Net that automatically performs the cracking. It's a derogatory term for those who use scripts and programmes developed by others to compromise and launch attacks on computers.

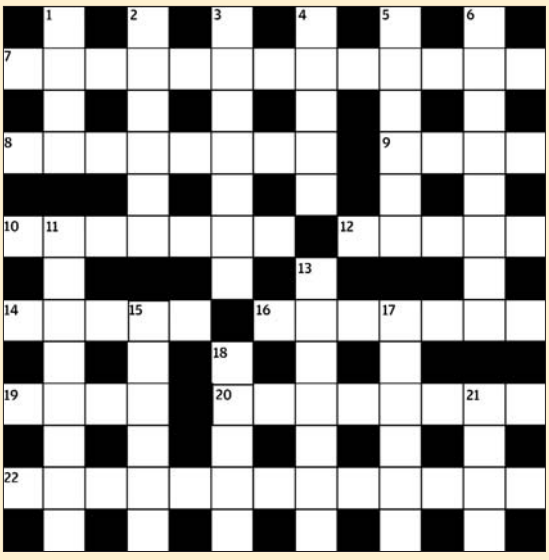
Answers

1. Mighty Mouse
2. .ps
3. Underwater robots used by the US Navy
4. Wal Mart
5. 2.5 billion pixels
6. Local Loop Unbundling
7. Marketing
8. Software Licensing Specialists
9. £100
10. A border surveillance programme, it collects data on visitors to UK

Crossword

Across
7. Working at home and communicating through e-mail or fax (13)
8. Natural state paper symbol in place of a character (4,4)
9. International Data Encryption Algorithm (abbr) (4)
10. Electricity flow (7)
12. Representative program that gathers information in the background (5)
14. Adaptive Differential Pulse-Code Modulation (abbr) (5)
16. Microsoft's multimedia encyclopedia (7)
19. Short for Any Transport over MPLS (4)
20. Sample shareware or HTML Assistant Pro? (8)
22. Known as 'tunneling' in networking (13)

Down
1. Binary prefix multipliers breaks bite (4)
2. Text title (6)
3. Segments of addresses that specify an organisation (7)
4. Wireless data transfer widely used in Japan (1,4)
5. Cord series of alphanumeric characters (6)
6. LANs connected through protocol (8)
11. Changing of data to present day and time (8)
13. Put a programme onto a computer system (7)
15. Common Random Access Memory (abbr) (6)
17. Unit of electrical power disperses bat wat (6)
18. Category of objects (5)
21. System base (4)



Crossword by **Nitta Jaggi**

Send your answers to the crossword with complete contact details to **TQ@thinkdigit.com** on or before **Sep 15.** One lucky participant will win: ***The UNIX Programming Environment*** by Brian Kernighan and Rob Pike published by Pearson Education (Singapore) Pvt Ltd (Indian branch in New Delhi)

Win!

August 2005 Solution

There was no winner for the August 2005 crossword.

Digit Forum

C'mon, you can win a game!

chinmay_d
Warmed-Up Nerd
Location: Gurgaon, India
Whoa .. articles look nice ... seems I'll have to hurry to buy my copy ...
My favourites topics:
Biometrics
30 Days With...
Geek Dreams
A Lossless Compression
Agent001
Tech Critique
Seems DIGIT is improving. There was no article which didn't interest me.

****

ShekharPalash
Digitized!
Location: Toyland v8.0 BETA
Was little excited when I saw the *BIOMETRICS* on cover... I thought this time DIGIT covered lot of articles on Biometrics... I thot *A Biometrics Special Isue*... wow! Unfortunately, It wasn't. Article was good, but kind of small :(

Thanx for PDFs... as I forgot my last month's issue in the train! Lol... this month I realized tht CD & DVD contents are different for the last couple of months... lol... I used to ignore CDs thinking it's all n DVD... !!

****

QuickFire
Analogue Novice
Location: India
Received my issue tday due to mumbai rains. Excellent Cricket 2005 review by Raaabo but c'mon u can win a game easily. Its not that difficult. The Q&A and other regular sections are good. Yet to go through all the contents but overall looks ok. The editor's post abt improvement in quality of digit is not correct. Maybe quantatively, digit has improved.

More contents due to that Fast Track booklet and I appreciate that but quality needs a lot of improvement. Even the paper quality of last couple of issues is not upto the mark. I think you people should come up with more interesting articles!

****

Biplav
In-House Geekc
Location: U REALLY WANNA KNOW???
I must say the Fast track was superb this time round. Although I had a
fair bit of knowlegde in most of the things written down; but then the "fair bit" was enhanced like hell!!!. Make no mistake about it, this was an awesome read.
i read the entire thing on my journey in the train. The Magazine was good (although I am not interested in MFDs and printers).
Another thing: has the magazines paper quality reduced???
All in All hats of to the Fast Track Writers

To post your comments on Digit Forum, visit www.thinkdigit.com/forum

Four Marvellous Years

First of all, kudos for bringing out such a magnificent tech marvel and congrats for completing four successful years as India's best tech magazine. I am a budding geek and although I am not a subscriber, I keep an eye on every issue of *Digit* and buy the best of the issues.

Your 4th anniversary issue was really above par but I regret to inform you that I was unable to enjoy it fully since the DVD had a corrupted structure...

I hope in future you will not give me a chance to complain. I bought your July issue too, which was excellent; especially the article on gadgets was awesome. Hope you will keep bringing such excellent issues and tools through your DVDs and CDs.

Rohan Malik
New Delhi

Dear Rohan,
Please accept our sincere apologies for the damaged DVD. We have forwarded your problem to the Help Desk and you should have heard from them by now. Thank you very much for your kind words and we assure we will do our best to continue providing you the very best.

—Editor

I Am Now Tech Savvy!

I had been suffering from a phobia of computer jargon till I started reading *Digit*. Earlier, I used to see the huge packet of *Digit* with CDs and wonder how people read this hi-fi magazine... I would just console myself saying "they must have born with extraordinary brains".

But thanks to *Digit*, now even I am comfortable with most of the terminologies and am now considered among the tech-savvy people in my college! I hope *Digit* will keep on injecting the technological fuel in me!

Vineet Gaurava
Bangalore

Dear Vineet,
It is our pleasure to have been able to turn you into a 'tech savvy' geek! And no, you don't need to have extraordinary brains to understand *Digit*. That's our whole aim: Make technology understandable. Keep reading!

— Editor

Computing Nirvana

I recently read the editorial on your latest issue of *Digit*. It really made me think. It made me think whether we should be made numbers or whether we should fight for our own privacy? It is a question that has been asked since the Internet was created. Man needs both, his personal space and peace of mind.

The Net, unfortunately, cannot provide both. We have to learn to compromise if we are to get anywhere. In the real world, do people mark us as numbers? Do they come up to us and ask us what we have been doing every 10 minutes? No. But, in the digital world, this will happen soon enough.

As you so rightly stated, all Net users will be classified by numbers and will have neither a real identity nor privacy. All they'll have is a false sense of security.

So, no matter what safety precautions we take, there will always be those who will find a way around it. But there is an old saying, "The darkest hour of the night is just before dawn".

That is the one sparkle of light and hope that we must cling on to if we are to make to computing nirvana.

Manik Sinha
Via E-mail

Dear Manik,
Well said. Nirvana is "the state of being which follows the state of happiness in the growth of the self". Like Nirvana in real life, computing Nirvana can also be achieved only through self discipline and the state of happiness preceding it can only be achieved through self knowledge. Before I sermonise any more, suffice to say that knowledge is the biggest step on the way to Nirvana and educating yourself the only way to it!

—Editor

The Price Hike Is Justified. Or Is It?

I am a regular reader and a subscriber of *Digit*. To me, it is like 'a drug for my life'! Each month I wait for my *Digit* and the first week of each month is very crucial time for me for I must get my issue before the 7th or 8th of each month!

One thing I would like to tell all readers is that the rise in the price from Rs 100 to Rs 125 was not too much considering all the things provided by *Digit*, which includes a DVD, a CD, Fast Track and not to forget *Digit* itself.

Regardless of what others pay for the magazine, I get my copy at Rs 66.66 per month because 'wise men subscribe when

Write to the Editor

E-mail: editor@thinkdigit.com

Snail Mail: The Editor, Digit, D-222/2, Om Sagar Building, MIDC, TTC Industrial Estate, Nerul, Navi Mumbai 400 706

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Inbox

the time is ripe. The unwise keep waiting for a better offer that may never come'!

Shalabh Agarwal
Lucknow

I am a student of class XII. I am reading this magazine for a long time now. I really like the contents. But I am unhappy with the price hike. Students like me who are interested in technology and are from a middle class family find it tough to shell out Rs 125 every month. Last month, when I saw the price, I thought of not buying it. But after a few days, I could not resist.

This magazine has become an essential commodity to serve the hunger of knowledge. Now that we are obliged to bow our heads to such blackmailing, I think we have the right to ask for something more. I think one (or more) page (s) could be added to deal with career guidance in this field for all students. I would also like to see some part-time jobs being offered for students.

Anindya Sadhu
Kolkata

I have been a reader of *Digit* ever since I came to India seven years ago. Now I am a subscriber and I wear the tag proudly. In fact, I have even bought a CD album to preserve the CD/DVDs I get every month.

A couple of things I wanted to say: why are people cribbing about a mere Rs 25 hike in the price? For crying out loud, it's just Rs 25. Even a litre of fuel costs more.

Thought number 2: you guys have the best sense of time and punctuality I have known ever since I came to India. Even when 'Mumbhai' went underworld (pun intended), you said, you would deliver your copies within the 15th and you did.

Matt
Bangalore

Dear Shalabh, Anindya and Matt,
What can I say? Two of you support the price hike, while Anindya is opposed to it. One glaring difference here is that Shalabh and Matt are subscribers and hence, were not hit by the price hike. Anindya, I thank you for your unflinching support but the price hike was inevitable. Prices of raw materials and all other aspects involved have gone up and for the magazine to survive, we had to take this rather difficult decision.

All I can say is I hope we continue to have you with us. May I suggest going in for a subscription? It would bring down your per copy cost. On the whole, though, thank you all for your support and your suggestions have been noted and we will act on them ASAP.

—Editor

Is Backup Legal?

Recently, a senior citizen had written to *Digit* sharing his experience, which prompted me to write as well. I am sure that like me, many of your regular readers are senior citizens. I was working in the R&D department in a multinational prior to retirement.

I have been a regular reader of *Digit* since inception and a subscriber since March 2004. I am a very choosy person in every aspect of life and, therefore, my loyalty as a *Digit* reader over the years could not have been sustained without some powerful reasons—reasons that I regularly see in the words of other readers, month after month, in the "Inbox" column-words that I mostly agree with and am, therefore, not going to repeat.

As for the context of this letter, suffice to say that articles covering various IT-related technical as well as legal issues published in *Digit* have inspired me to raise a related issue that has not been addressed clearly so far. I am talking about the question of possible copyright violation by innocent PC enthusiasts trying to backup their collection of old audio/video material currently on media that are becoming obsolete and/or are fast deteriorating with age.

As for analogue to analogue backup of audio/video content, my understanding is that if one makes a single instance (backup) copy of a copyrighted material (that was legally procured), solely for one's own use and does not share the copy with anyone else (not to speak of selling!), or use it for any profit making purpose (public shows, for instance), there is no violation of any law. That is only the basic principle, however.

Possibly, that is exactly where the trouble lies! The law was simpler and straightforward in the analogue era. Things began to change with the advent of the digital era. For a common IT enthusiast, the situation is becoming progressively restrictive vis-à-vis the entertainment industry, particularly with the availability of mass-marketed DVD recorders and PVR solutions.

Although creating a backup of one's legally procured commercial software is still allowed, the right of the consumer to make a "backup copy" of his/her (commercial) DVD movie has been successfully contested in the US apex court by the Hollywood studios recently, or so I heard. I have no problem with that, but what about an old-to-new trans-format backup? I have no clue!

Nobody talks clearly about the legality of backing up one's collection of analogue audio/video content to digital media, although suggestions (and even step-by-step instructions) for such activities abound in highly respected publications: "Rip Your Records: If you miss those tunes, here's the good news: You can easily make clean digital copies of them", "So now you can easily backup to CDs all your treasured music on those old vinyls that you have held on to for so many years", or something to that effect!

LETTER OF THE MONTH

However, is such an activity strictly legal? The situation is even hazier for video. For example: "So where does that leave that pile of old VHS videocassettes you have up in the attic? Fortunately, converting your old tapes to digital form allows you to... output them to DVD, preserving them for the future", so goes an article (Not in *Digit*).

That brings me to the issue of trans-format backup. I have a large collection of my favourite Indian music on LPs, EPs and analogue cassette tapes, and an even larger collection of video recordings on old VHS cassettes (movies as well as other programs of my interest), either on original, legally purchased cassettes, or recorded off the cable. Many of these audio/video contents are not available on digital media and many are not available in any format today.

My quandary is very obvious: Would it be a violation of existing copyright laws if I backup (to CDs and DVDs) any of the following from my collection:
(1) Recorded from live broadcasts
(2) (Legal editions) purchased from the open market?
If the answer to any of the above is "Yes that would be illegal", does the answer change if such audio/video content is not available in the digital format, or is no longer available in the market in any format at all? Answering this may just help dispel the confusion among many other *Digit* readers too.

Subhendu Joardar
Via e-mail

Tabloid TECH

People And Events That Grabbed Headlines—For Better Or For Worse

Time To Roll Over

Bikini wearers now need not fear getting sunburnt—thanks to the timer

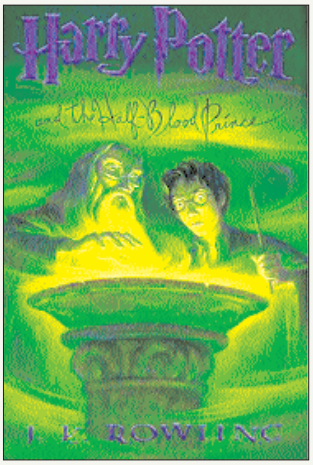
A swimwear manufacturer in Britain has come up with an innovative idea to give you an even tan—a bikini that reminds sunbathers to turn over so they don't get sunburnt.

The Tan-Timer Bikini has an electronic timer that beeps every 15 minutes to remind its wearer to roll over or seek shade, depending on the settings. With research revealing that 59 per cent of the beachgoers in the United Kingdom have a tendency to fall asleep in the sun, the company hopes to find a large enough market for the £20 (Rs 1,500 approx) bikini.

The bikini will be available at the New Look stores, Britain's third-largest women's clothes retailer. A New Look spokeswoman said a male version is likely to be designed and launched in the near future. Imagine wearing a timer in your boxers or briefs!

The next time you walk past a sunbathing beach beauty in Goa or Kerala and hear a beep, it would probably be the timer going off...

Rowling's Howler



JK Rowling, author of the billionaire Harry Potter series, has been called a "Luddite fool" for inadvertently encouraging fans to pirate the latest Harry Potter book only hours after its official release.

The sixth instalment of the popular series was released on July 16 and is expected to further enhance what has become a multibillion-dollar publishing phenomenon. But within hours, *Harry Potter and the Half-Blood Prince* had been scanned and put online by an underground collection of fans capitalising on Rowling's decision not to release an official e-book version.

By midnight of July 16th, hundreds of users were already reading the book thanks to Potter fans who organised over Internet Relay Chat (IRC) to scan and distribute the book.

Potter fans co-ordinated a worldwide effort to turn the book's 672 pages into a home-brew digital copy—now available on most file-sharing networks.

Just 11 hours, and all the secrecy maintained for months went down the drains of the Internet! Wonder if Harry has any tricks to stop these muggles!

Death Becomes Him!

In weird goings-on at eBay this month, we have two cases of corpses being put up for sale. Not just any old corpse, but the bidders' own corpses.

A UK man called Daniel O'Dee put up a listing where he offered his own corpse for sale. Such auctions are usually pulled down quickly by eBay, but often this happens a little too late. In this case, a response got to O'Dee from a German who called himself 'Donnie, the Hannover cannibal'.

Donnie said he'd pay £2,000 (Rs 1,60,000) if O'Dee could get him a "fresh corpse." O'Dee later got a death threat after he failed to reply to this message. Talk about bringing trouble upon oneself...

But that's not all in the eBay department this month. 24-year-old Andrew Beutin, a "dangerous-sports fanatic with a morbid sense of humour", put up his corpse for sale as well. Beutin claimed to be in good health, and said he "didn't have any reason to expect his demise any time in the near future." But he cited some of his "dangerous" habits in his item description:

"You are bidding for the sole right to advertise on my corpse... as soon as my corpse is discovered and otherwise legally available to you. As the winning bidder, you will have the right to advertise on my corpse, definitely during the funeral. You are welcome to photograph the ad after it is finished as well as attend the funeral."

That got all of us wondering who would bid on this 'item'. GoldenPalace.com is a likely candidate. This, as you may remember, is the company that had the winning bid to advertise using a tattoo on a girl's forehead.

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3 Your points get added every month and can be redeemed for exciting gifts!

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