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Jasubhai
DIGITAL MEDIA

Editorial

Blame It On Tech

TS ELIOT had foresight. “April is the cruellest month,” he wrote in his classic poem *The Wasteland*. In the world of technology, nothing could have been crueler than last month when a bunch of Pune-based BPO employees defrauded Citibank’s clients of more than Rs 1.5 crore, and a boy from Nashik (Maharashtra) repeatedly molested a girl from Mumbai when she visited him after he confessed his love for her online.

No wonder, then, that the daggers are drawn, and technology is back to being the villain.

This column has always argued that it is not technology that is the villain, but lack of effective regulation. Branding technology as the perpetrator of the crime (or even an accomplice) is not only being short-sighted but also displays a complete lack of knowledge of technology as well as history. It is a classic case of missing the woods for the trees.

Bigger frauds have taken place even when technology was not predominant (remember Harshad Mehta and Ketan Parekh?); women have been sexually attacked since time immemorial by men with twisted brains (even our epics carry stories of exploitation); and teenagers and adults have always exchanged pornographic material among each other.

The question then begs itself: Why does technology get the blame?

The answer is that is most people, especially those that make the laws (or are supposed to), do not understand technology. Worse, they are scared of it. It is similar to when people get scared of learning mathematics, they pin the blame on it for earning fewer marks. So then, is mathematics to blame, or is the person unwilling to understand the nuances of the subject the culprit?

To take the argument further, should we blame credit cards for financial fraud, or cars for road accidents, or nuclear weapons for the WWII twin Japanese disasters?

Admittedly, technology provides avenues for a lot of things. It also provides avenues for crime. Which is why, the anti-India anti-outsourcing propaganda in the US is on thin ground. Mature commentators in the US, in fact, are praising the Indian police’s quick action to nab the Pune culprits. On the popular Web site motleyfool.com, columnist Rich Smith says that data may



Sachin Kalbag Executive Editor

“Most people, especially those that make the laws, do not understand technology”

be more secure in India primarily because we have checks and balances in place, like the cybercrime units of the police force. They may not be the world’s greatest online detectives, but their fast action in the Pune case may deter future online criminals.

While the Pune action is heartening, it also exemplifies how, until the regulations are enforced, crime will happen. Until then, the authorities will keep blaming technology. Maybe we will have to just live with it!

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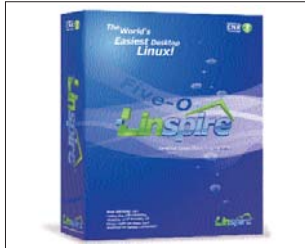
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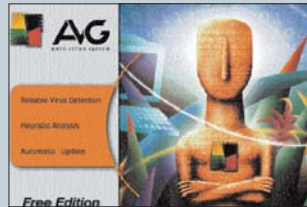
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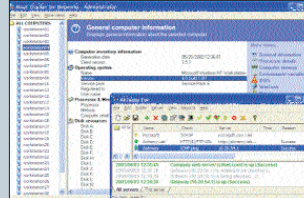
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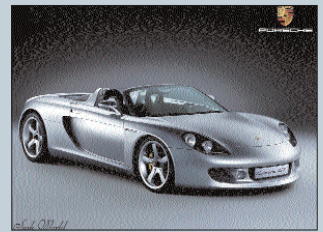
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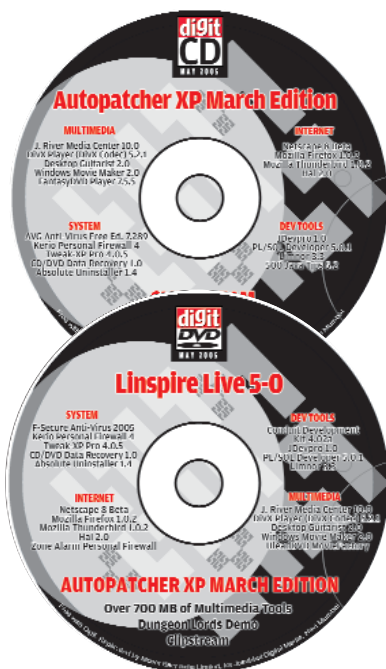
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By Demand

You get to choose what goes in *Digit* Interactive. This month, you chose:
Linspire Live 5-0 (Linux OS)
Autopatcher XP March Edition



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This Month's Question

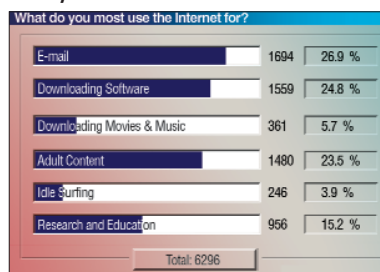
How much spam mail do you receive in a month?

- ☐ None
- ☐ Less than 10
- ☐ Between 11-50
- ☐ Between 51-100
- ☐ Between 101-200
- ☐ Above 200

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Last Month's Question:

What is the maximum you are willing to spend per month on a broadband or always-on Internet connection?



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	QnA This is the place to share what you know, and learn what you don't. Moderators: Moderators , JuniorMods , Administrators	3252	22938	Thu Mar 17, 2005 2:04 pm drnudge
	Bazaar An online marketplace for Digit users to buy or sell their second-hand IT goods. It's all here, from older Digit issues and CDs to computer parts and peripherals. Moderators: Moderators , JuniorMods , Administrators	337	1944	Thu Mar 17, 2005 1:21 pm rachitboom2
	In General... Anything that doesn't fit into the other sections—from upcoming technology to personal anecdotes—should be posted here Moderators: Moderators , JuniorMods , Administrators	1484	20247	Thu Mar 17, 2005 2:20 pm h4xb0x

Sober, But A Worm

A new version of the Sober worm is spreading rapidly. Called Sober-M or Sober-N, it uses an e-mail to convince recipients that their e-mail is being diverted to the alleged sender. The subject is "I've got your e-mail on my_account!" The infected .zip file is commonly named "your_text.zip".



Linux: Automated Again

Linus Torvalds has launched a new tool—Git, to manage his software project. Torvalds stopped using a management system called BitKeeper, reverting to an older, slower technique of simply e-mailing updates among the hundreds of programmers who contribute to the project.



Enter

Kailash Kher
Singer

An ardent follower of Ustad Nusrat Fateh Ali Khan, Kailash Kher created a stir with his debut number 'Allah Ke Bande'. His rugged voice and passionate lyrics let him connect equally well with the masses and the classes. We asked him about his thoughts on technology and on how it touches his life. Excerpts.

What does technology mean to you?

Technology is a very important part of life. In this tech-savvy world, being oblivious to technology is like committing suicide.

What role does technology play in your daily life?

I have to use technology in some form or the other daily. My recording studio is rigged up with the latest systems that help me deliver a better song each time I record. Even rehearsals are impossible without gadgets! So they're important—but I may not be able to tell you how it works because I have people who help me understand it.

How often do you use the Internet?

I do not surf regularly; my team members check and respond to my mails. Every once in a while when I find time, I log on.

What kind of gadgets do you own?

I own a cell phone. I try and make my music as digital as possible. The sounds of *dhols* and *chambals* are all digitally modified to suit my songs.

Does technology have any influence on your music?

It does... I listen to a lot of variations before finalising what will fit into my style.

"BUSINESS AS USUAL"

Adobe Dreamweaver?

It's the merger of the millennium—Adobe has entered an agreement to acquire chief rival Macromedia for about \$3.4 billion in stock. The companies intend to combine their software into 'integrated solutions' and might tap unexplored markets such as the mobile and enterprise segments.

while Macromedia CEO Steven Elop becomes Adobe's president of worldwide field operations.

Analysts around the world and those who have been following the fortunes of Adobe over the years feel this decision has been driven by the fear of a competitor that doesn't exist. This, in fact, has also

beginning to dominate mobile multimedia as well; Flash is expected to ship with 75 per cent of mobile phones within five years.

The growing reach of PDF and Flash has sparked concern at Microsoft, which in turn began to develop its own offerings. Office 2003 shipped with InfoPath for creating forms and sharing information, and Longhorn is expected to ship with further document-sharing alternatives to PDF.

Across cyberspace, though, the reaction has been mixed and while some laud the move, others are not sure what this will mean. Forums across the Internet have been rife with speculation whether Adobe will discontinue any Macromedia products and which one it will merge with its existing products. Flash and Dreamweaver, it is believed, will be the two major ones to survive on their own, while Fireworks may well be merged with Photoshop. What actually transpires remains to be seen.



Macromedia will enhance Adobe's publishing, design and developer portfolio with products such as Flash, Director, ColdFusion, Authorware, and RoboHelp, among others. Post the merger, Macromedia stockholders will receive 0.69 shares of Adobe common stock for every share of Macromedia common stock.

Sandeep Mehrotra, Sales Manager, Adobe India, confirmed that it will be "business as usual" for the two companies, until close of transaction. Any new products in the offing? "The combined company will not be able to create a joint product roadmap until after the transaction is closed," says Mehrotra.

According to the terms, Adobe CEO Bruce Chizen will retain his position

been cited as one of the reasons why Adobe brings out so many upgrades and changes to all its software with such alarming frequency.

The deal underscores Adobe's growing concern that Microsoft is set to encroach on the wide marketshare enjoyed by both Adobe and Macromedia. Adobe's PDF document format is an industry standard for businesses, and its Acrobat Reader software ships with most computers.

Although Adobe brings in most of its revenues from its Photoshop and Illustrator design tools, the company has begun to centre its business around document creation and collaboration using PDF. Macromedia's Flash, meanwhile, is the standard for Web animation and is

VALIDATION FIRST

Microsoft Introduces 'Piracy Lock'

Microsoft users who wish to download local language add-ons to



Security Watch

Outlook and OWA 'From' Header Spoofing

The Problem

April 10, the FrSIRT (French Security Incident Response Team) reported that remote exploitation of an address spoofing vulnerability in some Microsoft e-mail clients,



including Outlook, could allow attackers to social-engineer sensitive information from end users. The flaw exists in the message header parsing engine, and allows an attacker to spoof the 'From' field that is displayed on the user's screen. This is made worse by the fact that when the 'From' field contains multiple comma-separated addresses, Outlook only displays the first address.

The Damages

Say a corporate SMTP server is configured to drop all mail received from the external network claiming to be from an internal address. By exploiting this, an attacker can bypass restrictions and transmit a message that appears to come from an internal user. A user is therefore more likely to give out sensitive information.

Precautions

Microsoft has reviewed the issue and has said that while a bug fix may be implemented in a future service pack, a patch will not be released for this issue.

Examine the full mail headers of any suspicious e-mail messages prior to taking described actions or following live links.

Windows have to first validate their copy of the operating system as legitimate. The first add-on to be affected will be the Vietnamese language interface pack.

Over five million users have taken part in testing the piracy lock, dubbed 'Windows Genuine Advantage', on its Download Center Web site since September, according to Microsoft. Currently, Download Center visitors using Norwegian, Czech, and Simplified Chinese versions of Windows have to validate their copy of Windows.

SATA II INTERFACE, TOO

First 500 GB Hard Drive Released

Hitachi's new Deskstar H7K500 is the first desktop hard drive to reach 500 GB, and one of the first to use the new super-fast SATA II interface.

Hitachi's 500 GB drive will be available in two versions: a \$500 drive featuring the parallel ATA interface and an 8 MB data buffer, and a \$520 model with a 16MB buffer that uses the 3 Gbps Serial ATA II interface, backward-compatible with the 1.5 Gbps SATA interface. According to Hitachi estimates, the five-platter drives will be able to store up to 56 hours of HDTV, depending on compression rates.

JAVASCRIPT VULNERABILITY

Et tu, Firefox?

Security firm Secunia discovered a flaw in Firefox, the popular open-source browser.

Firefox versions 1.0.1 and 1.0.2 contain the vulnerability, which stems from an error in the JavaScript engine that can expose arbitrary amounts of heap memory after the end of a JavaScript string. An exploit may disclose sensitive information in the memory, according to Secunia.

The flaw can also expose sensitive information from Web sites users have visited, and the information they enter there. The Mozilla Foundation issued a patch that resolves the issue, and advised people to update their software.

There is another angle to the story. The exposed flaw could be good publicity for open source, and could be seen as an opportunity to show that the system works, according to open source advocates.

The publicity surrounding the JavaScript flaw shows "the open

HOT



Gmail

Google has already doubled the storage limit on Gmail to a whopping 2 GB. Moreover, Google will offer free storage increases as user needs expand, thus creating virtually unlimited storage!

NOT

Hotmail

Hotmail is still stuck at a paltry 250 MB, even as Yahoo! has begun taking it to 1 GB. In fact, you get a miserable 25 MB at sign-up, which, Hotmail states on its sign-up page, will be upgraded within 30 days.



source system is working," said Greg Minchak, director of external affairs and an analyst with the Open Source Industry Alliance.

"Unlike some software companies that sit on vulnerabilities until they



One Silly Question How long can you survive without the Internet?



"Just the six hours I sleep!"

Reeba Joseph, Navi Mumbai



"A couple of hours maybe... the longest I can stay without food."

Archana Subramanian, Chennai



"As long as my cable TV works fine."

Dhivy Ramanujam, Thane



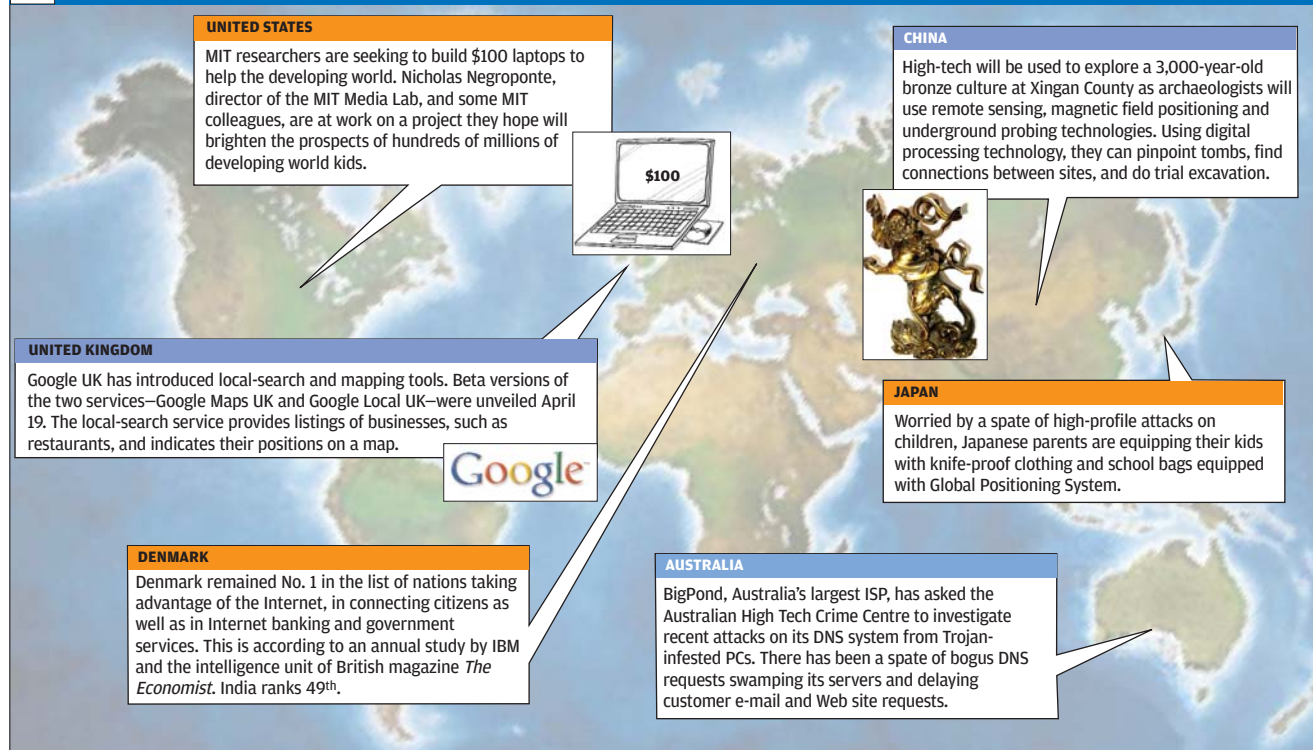
"Not even a minute... the Internet's like the air I breathe."

Rohit Madhavan, Kerala



"As long as I can stay without having a bath."

Jigar Patel, Mumbai



get around to them, the open source community swarms to a problem the moment it's made known."

A9, A POPULAR CHOICE

Bringing It To The Customer Like Never Before

A9, the search tool developed by Amazon.com, is proving to be a popular choice among early users, says Werner Vogels, chief technology officer of the online retail giant. Vogels was recently in India and travelled to Hyderabad, Mumbai, Pune and the Amazon Development Centre in Bangalore. In conversation with *Digit*, Vogels outlined some of the plans and priorities for him as CTO

of Amazon.com.

"The Web and search engines are run by talent, and collaboration will be the key in the success of A9. We have a large group of developers working on A9 and this is happening from our Bangalore office," informed Vogels.

The future form of the Internet has been widely speculated. Vogels said that one of the biggest challenges would be the possibility of building applications that have not been attempted before. "The key to the future would be to develop interfaces that are new, allow developers to innovate... as of right now, there's not much to do, but it would be wrong to say that there is stagnation," said Vogels.

Speaking about the Internet as an operating system, Vogels said this was more "philosophical" than practical at this moment. "It's more suited to service than to become a platform in itself."



Werner Vogels, CTO, Amazon.com

Three Incredibly Useful Sites

Tech, Freebies, Movies

designtechnica.com



DesignTechnica

This Web site is one of the best places to read up on cutting edge technology and lifestyle products, with sneak peeks and extremely in-depth reviews on stuff ranging from the latest gizmos to office furniture! There's news, reviews, and a forum as well. This site will satisfy all your technology reading needs, whichever way you may be associated with technology.

thefreesite.com



TheFreeSite.com

TheFreeSite.com is the "Home of the Web's Best Freebies." It offers miscellaneous freebies, graphics, Web page counters, trackers, freeware, e-mail, free e-mail, Web pages, Webmaster tools, samples, fonts, and much, much more. You just won't believe how much free stuff there is on the Web! Happy Surfing!

ifilm.com



iFilm

This Web site gives you an instant fix of the latest movie trailers and more. Some sections on the site are 'Viral Video', 'Movies', 'Action Sports', 'Uncensored', 'Music Videos', and 'Video Games'. An excellent site to visit during office breaks... or in between breaks, for that matter!

Beat That!

Digit Caption
DDR Rs 500 a kilo, SDRAM Rs 400...

Last Month's Winner!

M Sudhendra, 3-10-38/A,
GokhaleNager, Ramanthapur,
Hyderabad 500013

**"Ek haath doodh ka packet,
doosra haath data packet!"**



Send your captions to
beatthat@thinkdigit.com

and win the
Family UtilityCD

from Numeric
Power Systems Ltd



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!

Traditional software houses have created complex software. If software is a service, you can upgrade and deliver immediate results," he said.

After the success of Amazon.com, Vogels thinks A9 will be the next area of focus for the company. "Our aim is to make A9 the best available. The A9 Yellow Pages is the next big thing... it can narrow it down to the nearest listing available and really make this medium localised," he added. A9, feels Vogels, is how you can bring something to your customer like never before.

EIGHTEEN PLAYERS INVOLVED

United Front Against Hacker Attacks

Eighteen global network providers and ISPs have teamed up in order to confront and curb large-scale hacker intrusions.

The organisations, which include British Telecom, Deutsche Telekom AG, MCI Inc., NTT Communications Corp., Cisco Systems Inc., and EarthLink, have agreed to share information about network-based attacks through the Fingerprint Sharing Alliance.

Participants will share data using technology from security company Arbor Networks Inc., that sells technology for detecting and fending off network-based attacks.

PRINT OUT ANYTHING!

A 'Print From TV' Platform

Printing from your TV could just become reality if Seiko Epson's plans take shape as they expect. Announced as one of the major new steps the company would be taking, the 'Print from TV' platform has already been announced in Japan. The platform would allow the

user to hook up an Epson printer to a special TV to make prints of the information (or photos) being displayed on screen. "We have already entered into an agreement with Panasonic for

Epson is also working on developing various types of displays including OLEDs, and what are largely being called as flexible displays that have widespread applications in cell phones and other devices. "At



The new OLED TV from Epson

manufacturing the specific types of TV sets required for this, and a standard for the Japanese market could be reached this year. For the rest of the world, discussions are still on," according to Norio Niwa, vice-president, Seiko Epson Corporation.

Epson, we allot six to seven per cent of the annual turnover for R&D, and this has facilitated the variety of research we are now doing," said Dr Tatsuya Shimoda, director, Technology Platform Research Centre and deputy general manager, Corporate R&D.

GENDER



BENDERS

Ganesh Subramanian vs. Aakanksha Kekan

Tag An Mp3



40 sec

A second year BSc (IT) student, Ganesh is raring to go. A music file titled Beatles appears in the Winamp playlist. He right-clicks the filename and the dialog box 'MPEG file info box + ID3 tag editor' appears. Straightaway, Ganesh clicks the ID3v1 tag icon and merrily enters the information we provided in the 'Title', 'Artist', 'Album', 'Year', 'Genre' and 'Comment' sections. He grins widely at us—having tagged the mp3 effortlessly, well almost, and in good time.



2 min 10 sec

Aakanksha is pursuing her BE (IT). Though tech-savvy, she needs some mollycoddling to get rid of her apprehensions. Aakanksha narrows her eyes at Winamp and selects the Beatles song. She fumbles about with the various options, clicking this and that, and sighs. Finally, she clicks the 'Misc' button that appears in the last row of the Winamp playlist, opens 'File Info', and the right dialog box appears. Aakanksha quickly enters the data and appears visibly relieved.

Epson is the leader in the Japanese market but not so in the rest of the markets. Commenting on the same, Niwa further explained, "We have laid greater emphasis on photo printing in Japan and therefore enjoy the marketshare we have. We have a different strategy for every market."

Also unveiled on the occasion were a range of new printers that used pigment inks for improved print quality, and a wider

range of applications. Using special inks and media, inkjet printing could even facilitate the printing of electronics and household items in the near future.

While some of the innovative applications do sound far-fetched, they could be practical pretty soon. So don't be surprised if you see someone printing their own ties and even PCBs at home! *(The author was hosted by Seiko Epson in Japan)*

BULLISH ABOUT INDIA

FICCI Frames

The annual FICCI-Frames conference on the 'Business of Entertainment' was held in Mumbai, from April 4 to April 6. A conference where the gurus of the entertainment world met, saw a few policy statements by the Information & Broadcasting Minister, Jaipal Reddy.

With the increasing demand for radio to be freed from the licensing structure the minister made a commitment to set up guidelines to enable almost 300 private radio stations in the country in a years time.

Coupled with this, he also emphasised the need to push for the popularising of the community radio. The government, he said, was keen to see as many as 4,000 community radio stations come up around the country. In addition to these he also spoke of considering the revenue sharing model instead of the present annual licensing one to boost the sector.

The other major areas under the spotlight were piracy and IPR and the emergence of mobile gaming, entertainment and news.

All the industry experts and leaders were bullish about entering the Indian market in the mobile and animation area. Gaming major EA said that they were evaluating the Indian market and would be entering the mobile gaming sector very soon.

EA Asia President Jon Nierman also said that India was a very attractive

proposition for the development of games, as it has a technically strong talent pool.

Among other international companies TOM Online, the parent company of Indiagames.com, said that they were keen to increase their presence in India by providing more interactive and user-specific content for mobile phones. "We are very positive on India, because at 36 per cent, it has the highest 5-year CAGR in terms of cell phone growth," said S Wang, CEO & ED, TOM Online.

The animation and movie special effects area was also a prime focus area, with the number of co-productions increasing and the use of new technologies such as Digital Integration in Bollywood movies.

With the mood positive at the conference, one thought voiced constantly: it's time India replicated the software success story in entertainment.

MONITORING OF RESOURCES

ISRO To Link All Tamil Nadu Villages

India's premier space Agency, ISRO, plans to create resource centres linked by satellites in all villages of Tamil Nadu. The resource centres are based in Rameswaram, Dindigul and Thiruvaiyaru districts. The M S Swaminathan Foundation, based in Chennai, will be the nodal agency.

The centres will monitor

LightScribe

HP recently announced a new disk-labelling technology called LightScribe, which lets you burn high-quality labels onto specially-coated CDs and DVDs. Apart from special media, you require LightScribe-capable CD or DVD Writers and compatible software in order to use the new labelling system. To label a compatible disk using

LightScribe, you just burn it the way you normally do, and then flip it over in the drive tray to burn text and/or graphics. LightScribe technology currently supports only greyscale printing at 1x speeds. However, the future promises higher speeds and colour support. You can visit www.LightScribe.com for further details.

Buzzword
of the MONTH

WHAT WHEN WHY WHERE WHO HOW

W₅H

WHAT WHEN WHY WHERE WHO HOW

What is SLI?

Scalable Link Interface is a method of parallel processing for computer graphics, in which two or more video cards can be linked to produce a single, more enhanced output.

Where was SLI technology first deployed on a commercial scale?

An initial version (dubbed 'Scan Line Interleave') was used by the US-based 3dfx in 1998, in the Voodoo 2 line of graphics accelerators.

When was the modern SLI introduced?

nVidia and ATI developed their own versions, that were rechristened 'Scalable Link Interface' in 2004.

How do the SLI versions differ?

In 3dfx's SLI, the two connected cards compose a frame by rendering alternating horizontal lines of pixels. While the nVidia SLI splits the screen into two parts, one GPU rendering each, ATI's solution breaks the screen into little squares.

Why does SLI have an edge over ordinary graphics cards?

By harnessing the processing power of two graphics cards, SLI-enabled systems can roughly—although not completely—double the performance of a single Graphics Processing Unit (GPU) configuration.

Who is the target audience?

With better image compositing and rendering, SLI-enabled systems are a must for the die-hard gamer. There's a caveat: deep pockets required, as SLI systems need to be complemented with a high-end motherboard and processor, as well as a top-notch display unit.

usage of resources like soil and water. ISRO has also placed remote sensing satellites in orbit to transmit information to the centres.

LONG-AWAITED

OS X Tiger Launched

Tiger, the fifth major version of Mac OS X, has more than 200 new features and innovations, including Spotlight, a desktop search engine, which will completely integrate into the operating system.

Other features include a 'Dashboard' to access 'Widgets' that let users get information quickly and return to work ASAP. 'iChat' enables audio and video conferences with up to 10 people. 'Automator' helps automate complex or repetitive tasks without programming, and Safari RSS enables RSS feeds to cull information from news organisations, community Web sites and blogs.

LOTS OF APPLICATIONS

Abundant Adobe

Adobe launched its Creative Suite 2 (CS2) worldwide on April 4, 2005. The CS2 is being pegged as a tool to help print and Web workflows for creative professionals. It includes Adobe Photoshop CS2, Adobe InDesign, Adobe Illustrator, Adobe GoLive and Version Cue. Also included is Adobe Acrobat 7.0.

The CS2 has a new component—Adobe Bridge that acts as a hub for productivity, imagery, and creativity. It provides multi-view file browsing and smooth cross-product integration across the CS2 software.

The designers can preview multi-page PDF files, drag and drop from floating Compact Mode

windows, process images with built-in Camera Raw 3.0, edit and search for Adobe XMP metadata.

To simplify the purchase and management of stock imagery, Adobe CS2 introduces Adobe Stock Photos. It brings together more than 230,000 images from some of the world's leading stock photography providers including Photodisc by Getty Images, Comstock Images by Jupitermedia, Digital Vision, Imageshop royalty free by Zefaimages. Version Cue in CS2 is a file-version manager and collaboration tool that helps users visually preview, track and access historical and alternate versions of files in CS2 projects.

Adobe GoLive is a powerful authoring tool for Web and mobile content. GoLive CS2 introduces new CSS layout tools which can be used by Web designers and developers to create, publish, manage and update content that adapts easily to the latest generation of handhelds. Adobe GoLive CS2 delivers mobile authoring tools based on open standards to support mobile layout (CSS, XHTML), multimedia and interactivity (SVG, SVG-t) and video (3GPP, MPEG-4) for mobile devices. The estimated street price for Adobe CS2 Premium Edition in India is Rs 65,300 and Rs 48,900 for the CS2 Standard Edition.

LAX LOCAL TV NETWORKS

BitTorrent To The Rescue!

Australians are catching new episodes of their favourite American television shows from

P2P applications such as BitTorrent.

According to an independent study conducted by a former general counsel for the Australian Recording Industry Association, the popularity of BitTorrent in Australia



is driven in part by local TV networks which are slow to air recent episodes of popular TV shows.

SEEKING TO MATURE

Disney Invades Gamezone

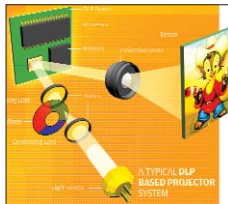
Disney's Buena Vista Games has purchased Salt Lake City-based Avalanche Software for an undisclosed amount. Buena Vista Games is also setting up a development studio in Vancouver that will create action-adventure games.

By buying Avalanche, Disney is seeking to mature into an established game development house. Avalanche developed *Tak and the Power of Juju*, published by THQ, and *Dragon Ball Z: Sagas* for Atari. According to Disney, they will focus on creating 'family-friendly' games. A team of developers formerly at EA will be heading Disney's Vancouver-based studio. ■

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



27 A Plan + A Printer
= A Product!



32 Digital Light
Processing



37 PlayStation
Portable

Digital Passion

Fuelling the pursuit of technology knowledge

Lead Feature

CLICK HERE TO Protest

The spirit is willing but the flesh is weak... that's the case with most of us when it comes to causes we care about. Can the Internet make a difference?

Mithun Kidambi

How many times have you taken to the streets to protest a cause? Never? You also probably don't cringe every time you hear about the plight of the Bengal tiger, or when yet another rain forest in South America falls to the axe of the lumber mafia there.

Despite the lack of popularity of armchair activists, many of us would be more than glad to register our protests from the comfort of our homes or offices. And you can. For all those wannabe armchair activists out there—all those of you who care, yet cannot or will not take part in a *marcha*—the Internet comes as a medium to air your views, and sometimes, even take action.

Why Online?

Online, or cyber-activism, comes across as 'the easy way out'.

But for those who cannot spare time specially for making their point, it does present the option of lessening the guilt! A few clicks of the mouse and you've done your bit, for the month at least. Doesn't sound much like activism... that's exactly why it works.

The easy and quick nature of this type of protest ensures that a large number of people move a cause. In most cases, online petitions are signed by almost twice the number of people who could be in direct contact with the issue.



Imaging: Bhash Sreedharan



Know The Real Petition

A Valid Petition

- ▶ Almost always supported by an established organisation such as the Worldwide Fund for Nature or Greenpeace
- ▶ These do not carry a must-forward clause. The receiver is free to forward it if he so wishes
- ▶ These are usually based on an issue you have heard of or read before

Spam

- ▶ Supported by organisations that you've never heard of before; chances are no one has. Example: Mothers Against Drunken Driving
- ▶ Always has a must-forward clause
- ▶ The issues being dealt with are not concrete. Mostly talk of direct help. For example, "Forward this mail to XXX people, and for every forward, Microsoft (or some other major company) will contribute \$1 to the cause."

Cyber-activism transcends geographical limitations and ensures the issue is kept alive 24/7.

To illustrate this point, an online petition to push for a permanent seat for India in the United Nations Security Council (UNSC), put up on www.sulekha.com, a networking hub for Indians from around the world, garnered more than 55,000 signatures from across 120 countries. What's more interesting is that many of these signatories were willing to take time out and volunteer for the cause.

Many hardline activists, though, are not sold to the idea of the strategic effect of an online petition. What is increasingly being realised, though, is that the Internet could not only play a significant role in tackling these pressing problems, but also has the potential of letting the oppressed speak out and be heard.

Petitions, Causes, Blogs

The Internet helps activists save costs in collecting and distributing information, finding like-minded people to support a cause and training them, and raising funds for the purpose. People in remote areas can participate just as effectively in e-mail discussions, like those in larger cities. Increasingly, as the medium itself becomes cheaper to access and more multimedia-like in nature, it opens up to a larger segments of society. Those affected might finally have a way to tell the world of their plight, without needing intermediaries.

Activism on the Net can be broadly classified into two categories. One involves signing a pre-drafted petition, many of which are put up on sites such as www.petitiononline.com, www.petitionspot.com, www.ipetitions.com, and www.thepetitionsite.com.

These sites have petitions indexed by topic and area. Registering a petition is really simple; however, www.petitiononline.com, for example, does not have a moderator to sift through the non-serious petitions. This results in a large number of inane petitions like "Get my girlfriend back!" by Douglas Cornell of 'Doug loves Shannon Inc.'.

In the other type, one uses a blog or Web site dedicated to a single cause. Examples are www.cleanwateraction.org, www.greenpeace.org,

College students form the majority of cyber-activists today

Shailendra Yashwant,
Campaign Director,
Greenpeace India

www.makingindiagreen.org and www.oneworld.net, which have people registered with them as cyber-activists.

A different kind of example is networking sites such as www.actionnetwork.org, which functions as a gateway to as many as 170 leading environment, health and population advocacy organisations. These cyber-activists are kept updated about various protests and activities through a regular newsletter. Activists can also download action kits, send Flash-animated post-cards to friends, and play informative games.

The Scene In India

Cyber-activism has been around in India ever since the Education and Research Network—the ERNET—set up by the Government of India and the United Nations Development Program (UNDP), gained some popularity.

The first known case of a movement on the Net was back in 1995, at a time when BBSes (Bulletin Board Services) comprised much of ERNET. Enthusiasts ran the BBSes in their spare time, using their own funds. The government suddenly deemed these as profit-making corporations fit for taxation. And the Department of Telecommunications (DoT) decided that Rs 15 lakh annually from each BBS operator as a 'license fee' was appropriate.

Obviously, no operator could afford this. There was an uproar, and a group called FREE was formed. They fought the case and by active lobbying, won. The license fee was withdrawn. This was India's first brush with online activism.

The scenario today is very different, with an unregulated Internet, and a large connected population aware of the issues plaguing it. The popularity of the Internet as a medium for communication has altered the demographic break up of today's cyber-activists. "College students form the majority of cyber-activists today, but there are also housewives and teachers with access to computers at home who participate in our cyber-actions," says Shailendra Yashwant, campaign director, Greenpeace India.

India has the largest number—and the widest range—of NGOs and it is therefore natural for cyber-activism to be active here.

One of the longest sustained campaigns has been the one against genetically modified (or GM) foodgrains and crops. Many environmental groups including Greenpeace claim India is being converted into a dumping ground or testing area by major multinationals.

More Than The Birds And The Bees

Environmentalists have been at the forefront of using the Internet as a formidable tool of protest. Almost all major groups working towards the protection of the environment have a strong presence in cyberspace.

The Worldwide Fund for Nature (www.panda.org), too, has a cyber-activism cell, akin to the one run by Greenpeace. However, its activities are not as aggressive. Other organisations such as PETA (People for Ethical Treatment of Animals) India do not have a specific online activism cell,



but do have downloadable literature. Additionally, they allow downloads of their ads for use on your Web site.

So is online activism is restricted to social or environmental issues? Thanks to the media, no.

One of the strongest movements witnessed recently on the Net was against the forced closure of the blog 'Mediaah!' The blog, run by a journalist, carried daily updates about Indian media houses. Written in a chatty, gossip style, it gave out bits of 'insider' news on the activities of various big media houses. Its activities, though, were cut short since some of those mentioned on the site did not seem to agree with the views expressed.

According to the Indian IT Act, the respondent to the notice should have been the service provider—in this case, Google—and not the author. But, rather than challenge the notice, he decided to shut shop.

"This is a classic case of a large media house throttling our fundamental right of free speech," says Rohit Gupta, a journalist and a prolific blogger. Gupta and fellow bloggers from around the world are campaigning against blogs being attacked by entities with vested interests. "It's time these people realised that just because they have the muscle power they cannot trample upon our rights," says Gupta.

Thanks to the unregulated nature of the Internet, an anonymous blogger can potentially set up a blog called www.mediaha.blogspot.com with all the allegedly offensive articles, and also scanned copies of the legal notice served to Mediaah!

Not Just Petitions And Protests

So is it just about signing petitions and posting protests, or is there something concrete about the process? There definitely is a move beyond your desktop.

This is best illustrated by the amount of relief that flowed in during the tsunami of some months ago. Several blogs and Web sites were set up to coordinate relief work and dispense accurate information.

There is, however, only this much that any petition can do—whether posted online or distributed among people. To mobilise people, one needs to move from just spreading the word and gathering information.

All the relief work during the tsunami was possible because there were people on the ground who knew how to handle the situation. The Internet just acted as a facilitator; a one-point control centre. Can an issue be tackled only by protests lodged on the Net? "It depends entirely on the issue at hand," says Yashwant.

A customer-savvy corporation will pay attention to what its customers are saying. Companies like Microsoft have a cell to address consumer complaints and tackle issues that are posted on the Net. Likewise, e-friendly states with a high level of e-governance could look at incoming mails and stop an ill-advised project.

Morphed forms of activism on the Net are also gaining ground. One of the more popular



It's time these people realised that just because they have the muscle power they cannot trample upon our rights

Rohit Gupta,
Journalist and Blogger

ones is 'hacktivism'. This new phenomenon of protest in the cyber-world is a synthesis of social activism and hacking.

'Hacktivists' are a bunch of people who want to transport the movement of civil disobedience onto the Internet. In December 1999, a group called the Electrohippies organised a "WTO virtual sit-in" that overloaded the machines hosting

the World Trade Organisation's Web pages. Estimates say over 450,000 people swamped the site.

This disrupted traffic to the site for close to five hours daily. Some question whether it's an acceptable form of protest, but hacktivists hope to defuse criticism by popularising not just their tools, but also their code of ethics—by publicising their intentions before any attack or action.

It's All A Number Game

Over the last couple of years, online protests have garnered support from around the world. When the movements gained public acceptance.

In Bhopal, for example, on August 15, 1999, Greenpeace India launched its first cyber-protest. A cyber-café was set up in the middle of J P Nagar, literally in the shadow of the Union Carbide factory. Thousands of residents sent out e-mails from this facility.

After nearly 3,000 mails, Union Carbide was forced to shut down its corporate mail centre to screen out e-mails arriving from Bhopal. The case recently got a boost when, after a sustained e-mail campaign, the Government of India gave the US courts a green signal to accept cases filed by Indians against Union Carbide.

With advancements in technology, it is only natural that each of man's ways of expressing and emphasising his individuality will adapt with time. Protests are a way of pushing for and stressing one's rights. There has been a fundamental shift in the way protests are carried out.

But with effectiveness failing to back up the numbers, purists are still wont to describe online activism as all bark and no 'byte'. ■

mithun_kidambi@thinkdigit.com

? The Quirkies

With the Internet, it's not difficult to run into stuff that will have you laughing silly. It's no different with online petitions. Here's one:

☐ "Put The Star Wars Kid In Star Wars III"

This is addressed to George Lucas, the creator of the 'Star Wars' series.

☐ Who is the 'Star Wars Kid'?

He is a 15-year-old from Quebec. Back in November 2002, while playing around at a school video studio, the boy recorded himself fighting a mock battle using a broomstick as a lightsaber. The two-minute video has the teenager twirling his mock lightsaber while making his own accompanying sound effects.

His friends found the tape and uploaded it to KaZaA as a joke. Within two weeks, someone had added the gamut of Star Wars special effects and sounds to the tape, and the video was linked on gaming, technology, and Star Wars-related sites across the Internet.

☐ Now What?

This petition, up on www.petitiononline.com, has garnered close to 150,000 signatures. Will we see more of him?



Illustration Shyam Shriram

A Plan + A Printer = A Product!

The exquisite technology behind the inkjet is so versatile, the uses are virtually limitless. “Take a plan and print it out” could soon work for almost anything—from MP3 players to houses!

Ram Mohan Rao

At the Shared Tissue Engineering Laboratory at the Medical University of South Carolina, scientists use machines to ‘print out’ skin. The printed skin could eventually replace skin grafting, which is used for burn victims as well as for cosmetic purposes. The machines are shooting out the proteins that will constitute the skin, and the tissue is being captured on specialised gel.

There’s probably nothing overly interesting about that, but what’s amazing here is that the machines are old HP and Canon inkjet printers!

Whoever said the unassuming inkjet could only be used for printing out documents, reports and such? Certainly not the inventors of the technology! They were experimenting with a variety of uses for it, and it just so happened that printing on paper got most quickly commercialised. Now, researchers are going back to their drawing boards and finding seemingly exotic, yet eminently practical, uses for the technology behind the print nozzle.

You see, the print nozzle is an exquisite piece of technology: it has many, many holes, and squeezes out extremely tiny droplets of whatever is in the cartridge. That’s where its potential lies. Instead of just ink, you could think of anything

to put in the cartridge, and instead of paper, you could think of just about anything for the 'ink' to be deposited on.

Although printing out skin is an interesting and useful idea in itself, one can easily extend the concept. How about printing out display screens? Printed circuit boards? MP3 players? Entire houses?

But we're getting ahead of ourselves. In what follows, we'll talk about 3D printing—instead of just one print head moving to and fro in one dimension, imagine several print heads capable of moving in all three dimensions, depositing anything you could imagine on any suitable surface. Or, a regular inkjet printer could print layer upon layer, thus making up a 3D object—for example, a bone or an internal organ.

What you have then, are machines capable of printing, well, just about anything. For example, instead of constructing an MP3 player part by part, incorporating the PCB, the plastic moulding, the hard disk and so on, you could just create a blueprint of the entire device and print it all out at once. That's the idea behind most of what follows—a plan being printed out.

Here's a glimpse at what is being printed now, and what will be printed in the near future; and all of it goes far beyond plain old paper and ink.

Instead of constructing an MP3 player part by part, you could just create a blueprint of the entire device and print it all out at once

Skin, Bone And Cartilage

So how does all this work? Like we mentioned, the inkjet printer is a marvel of technology because of the print nozzle, which spits out thousands of microdroplets. As an example, think about grafting skin onto a wound. A 2D inkjet printer will suffice for skin because the proteins shot out can be captured on a flat gel substrate layer. Experts enter the wound's dimensions into the printer to ensure a perfect fit. They then take skin cells from the patient's body and multiply them using biological techniques, and then print out a strip of skin that is tailor-made for the wound—and ready to sew on.

Such a printer has been developed at Manchester University in England; it only takes up the area of three filing cabinets. At the university's School of Materials, scientists have already successfully created skin, and think they will soon be able to create bone and cartilage as well.

Team leader Professor Brian Derby says, "It's not like printing a sheet of paper. We can print a few millimetres in depth and build it up layer-upon-layer until, in principle, we could produce bone fragments the size of a golf ball." Project leaders say the method could eventually be used to build an organ in a day!

The amazing thing here is that it's basically inkjet technology at work.



Inkjets For Just About Anything

Faxing Up Spare Parts

Think about the plight of an astronaut in space when something breaks. Where would he get a spare part from? Roger Spielman, a scientist for Boeing Canoga Park, has the answer: fax and print. One could 'fax' the 3D computer-aided design file to the International Space Station, where the data would be fed into a machine that assembles the required spare part from a bucket of powder. This, if you think about it, is not very far from faxing a physical object!

Printing Out A Heart

Tissue engineering combines the disciplines of cell biology, materials engineering, and biochemistry to create biological substitutes for human and animal tissue. At Clemson University in South Carolina, chemical engineer Thomas Boland had a novel idea in 2001 that brought the inkjet into tissue engineering. His method was deceptively simple: you could build up a 3D tissue by modifying the printers' output tray to drop down a little bit with each pass of the print head. Boland used his printers to create half a cat's heart—the heart actually beat in a petri dish!

Fuel Injection And Medicine Atomising

Since an inkjet sprays tiny droplets, one of the first uses that springs to mind is fuel injection. A regular injector does the same thing, atomising petrol (or diesel) into tiny droplets, but the smaller the droplets, the more completely they will vaporise and mix with air, making for more efficient fuel burning. An inkjet can therefore be part of extremely precisely controlled fuel injectors.

Think about medical inhalers, such as asthma medication inhalers. As with fuel injection, the task of creating the spray that these inhalers spit out is ideally suited to the inkjet. The problem is that conventional inhalers spray out a mist of drops that are too large, and also uneven. The inkjet can remedy this: digital aerosols, which are thermal print heads incorporated into inhalers that spit out perfectly uniform drops, could come to market as

early as the end of 2005. This method of injection is ideally suited to drugs that need to get to the bloodstream—the smaller the size of the droplets, the easier the absorption of the medicine into the bloodstream.

Digital aerosols are being developed by Australian company InJet Digital Aerosols. The inhalers will deliver drugs faster than do tablets or patches.

Flexible Plastic Screens

Several companies worldwide are in the race to commercialise flexible plastic-screen technology. Philips is currently using a four-headed inkjet with hundreds of piezoelectric nozzles to print OLEDs (Organic Light-Emitting Diodes) onto computer and television screens. You have probably heard of OLED screens—OLEDs glow when a current is applied. (Piezoelectric nozzles are one of the two commonly-used types of nozzle—the other is a thermal nozzle. A piezoelectric nozzle works when a current bends a piezoelectric crystal, forcing the fluid down and out of the nozzle. One of the properties of piezoelectric crystals is that they move or bend when a current is applied, and they release a current when bent.)

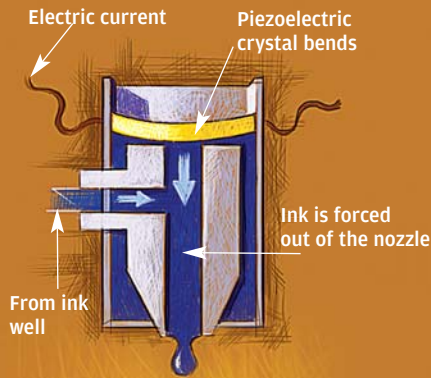
In Bristol, England, HP engineers are using inkjets to etch tiny liquid-crystal dots onto a plastic substrate—the dots themselves will be the pixels. Electrodes in the plastic, which is bendable, turn the crystals on and off, making for a full-colour display that would, at some point, compare with printed material in terms of resolution.

Circuit Boards

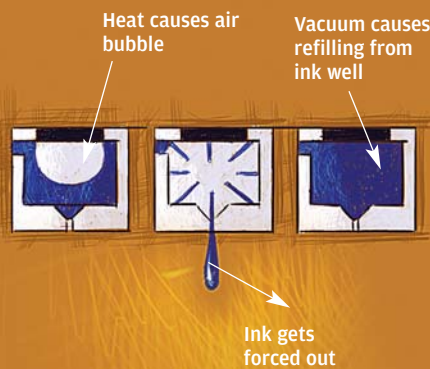
As was proved by Japanese engineers at Seiko-Epson, printing the innards of a gadget is possible using inkjets. In November 2003, they printed a circuit board consisting of 20 layers, and only 200 microns thick. How? They simply swapped copper for conductive inks and silicon for insulating inks. A piezoelectric print head with microscopic nozzles was used for the process. Seiko-Epson is confident that these thin boards will be used in gadgets as early as 2007!

How Inkjet Nozzles Work

A Piezoelectric Nozzle



A Thermal Nozzle



There are two types of inkjet nozzles—piezoelectric, on the left, and thermal, on the right. In the former, a current bends the crystal, which forces the ink out. In a thermal nozzle, it's based on the formation of an air bubble.

digm shift: you would pay for plans rather than for products. Download a plan, print out the product. You are probably already imagining P2P networks that you could download plans off!

What kinds of product would you really be able to print out? What is feasible in reality? As an indicator, instead of looking at fiction of the future, let's look at what is being done right now.

3D Printing

Going beyond 2D inkjets, think about 3D printers. A 3D printer is essentially a modelling tool, which can create plastic moulds and such. As an example, Z Corp, based in Burlington, Massachusetts, USA, markets an "affordable 3D printing system", which uses a spray nozzle adapted from an HP inkjet printer, to spray a liquid that binds powdered solid substances into a certain shape.

Z Corp began shipment of its Spectrum Z510 3D printing system in March of this year—the first high-definition colour 3D printer ever to hit the market. The Z510 introduced HD3DP (high-definition 3D printing) for rapid prototyping to designers, engineers, and product developers. (Rapid prototyping refers to a class of technologies that can construct physical models from Computer-Aided Design, or CAD, data.)

Using the system interface, product developers could now efficiently print 3D physical models with smaller features and more complex geometries, in colour, and with high-definition detail. The system software also allows for labelling, enhanced texture mapping, and vibrant product colouring. The Z510 initially retailed at \$49,900 (Rs 21 lakh) in the United States.

But such printers can, obviously, be used for more than just modelling and visualisation. It's all about design: you feed in the requisite data to the printer, and it constructs the required object according to the blueprint.

And that is something to think about. You could feed in a blueprint for just about anything! Could such inkjet (and other) printing technologies democratise manufacturing the way the invention of the printing press democratised knowledge hundreds of years ago? Instead of inkjet printers that print just words and graphics on paper, we could all have 3D printers sitting on our desks, printing out whatever we told them to.

And what would that mean in terms of who would make the money? There would be a para-

Flexonics

John Canny, professor of engineering at the University of California, Berkeley, and his co-investigator Vivek Subramanian, are using electroactive polymers, gold nanocrystals and inkjet printers to print devices that can move as well as process information. (Electroactive polymers are substances that respond to external electrical stimulation by displaying a significant displacement in shape or size, and nanocrystals are a non-traditional type of semiconductor.) They call this process 'flexonics'.

This revolutionary approach to desktop manufacturing has been enabled by recent advances in 3-D printers and organic electronics.

Printing Out Houses

Better inhalers for better delivery of drugs. Plastic screens. Tissue Engineering. Fuel injection. Rocket spare parts. Bones. Organs. Skin. What is not possible with inkjet technologies? Houses? As it turns out, houses can be printed out, too. One researcher has plans to, as he puts it, "be able to completely construct a one-storey, 2000-square foot home on-site, in one day and without using human hands", by 'printing' the house.

Engineer Behrokh Khoshnevis, at the University of Southern California, has been perfecting his 'Contour Crafter' for more than a year now. It 'prints' houses, and is to be tested by the construction industry. It takes instructions directly from an architect's computerised drawings and then squirts layers of concrete one on top of the other to build vertical walls. The precision automaton could revolutionise building sites, for the simple reason that it can work round the clock, in darkness and without breaks.

The key to the technology is a computer-guided nozzle that deposits a line of wet concrete, something like toothpaste being squeezed out. Two trowels, attached to the nozzle, move to shape the formed deposit. The robot repeats the same step many times to give height; hollow walls are built and the machine returns to fill them.

Degussa AG, of Düsseldorf, Germany, will collaborate on Khoshnevis' project to help him find the best kind of building material. Khoshnevis has tested his prototype with cement, but believes that adobe—a mix of mud and straw dried by the sun—might be suitable.

Khoshnevis' prototype robot hangs from a movable overhead gantry (a large supporting structure). The first house will be built later this year. If the technology proves successful, the robot could enable new designs that cannot be implemented using conventional methods, for example, structures involving complex curving walls.

Their research will allow fully-assembled electric and electronic gadgets to be printed in one go, instead of going the traditional way—creating a casing and then filling it with electronic circuit boards and components. Printing a complete and fully-assembled device by printing layer upon layer of conducting and semiconducting polymers, the device circuitry is built up as part of the bodywork.

When the technique is perfected, devices such as light bulbs, cell phones, radios, remote controls and toys will be spat out from printers as individual, fully-functional systems without expensive and labour-intensive production on an assembly line.

Three-dimensional printers are valuable tools for making prototypes of new designs. They deposit layers made from droplets of smart polymers, which gradually build up into 3D shapes. (Smart polymers are fascinating materials that show distinct responses to differences and variations in the environment, such as thermal gradient. They are called 'smart' because one can actually harvest their odd properties to benefit a wide range of applications.)

Such printing techniques have now become so sophisticated that it is possible to print working prototypes with mechanical parts that move just as they would in the final product.

The University of Berkeley's important addition to this art is to allow the electronics to be included in the printed device, rather than being added at a cost later.

Already, the Berkeley team has worked out how to print out electronic components such as transistors, capacitors, inductive coils and other semiconductor components. "These may be connected to form complete circuits for actuation and control," says Canny. He also believes that once they develop inkjet cartridges that can handle all the polymers needed for casing and circuit printing, they would be able to make, say, a remote control.

It would be printed as a single component, rather than being built up of smaller components. The infrared emitter and all the other electronics would be polymer-based.

Is There Anything We Can't Print?

Brains, probably!

There are so many uses for the inkjet, 3D or otherwise, that it's overwhelming. You sort of get the idea that there is nothing that cannot be printed out.

The point here is twofold: first, desktop manufacturing will revolutionise the way we think of products. With flexonics maturing, and with high-quality 3D printers getting cheaper, we will soon enter an age where, like we mentioned, you will pay for plans rather than for parts.

Second, one needs to remember that not all materials and substrates have been researched. For example, to print out, say, a handbag, you would need a process that could extrude leather out of a nozzle, which is not very realistic, at least for now.

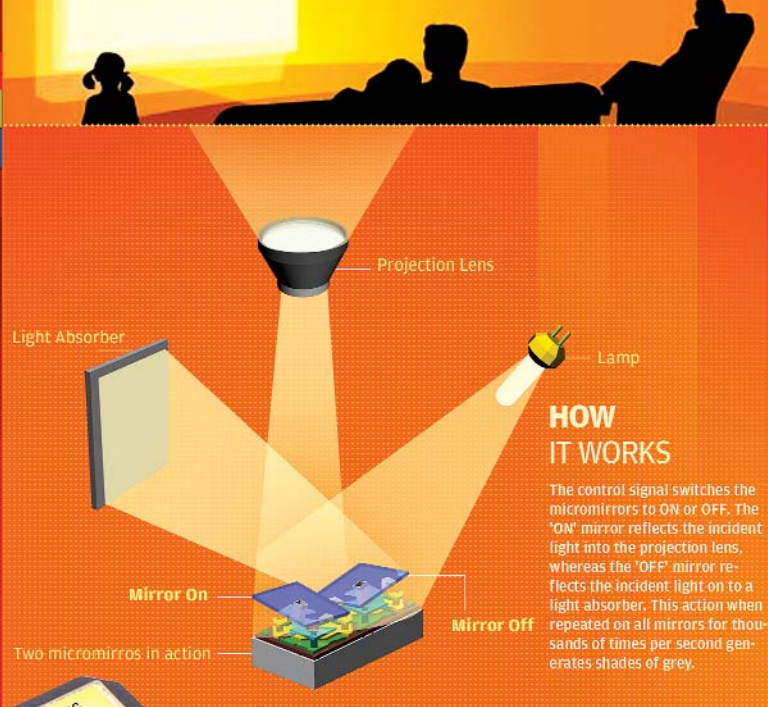
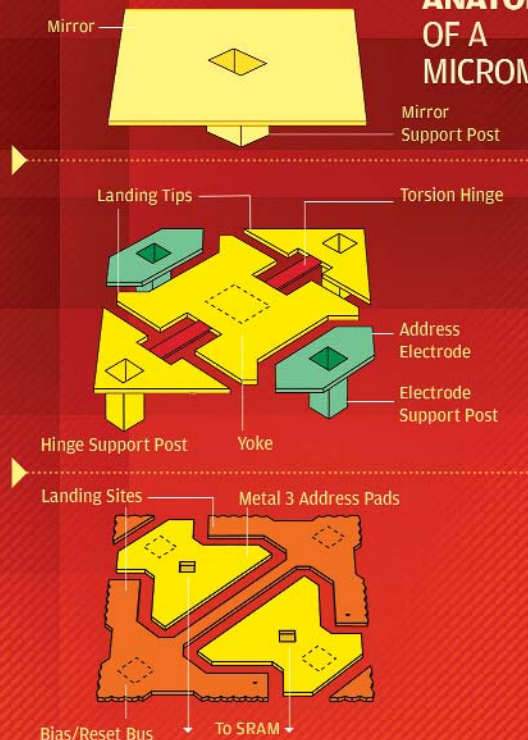
Another limiting factor is how easily plans can be laid out for the object: if it's something like a screwdriver, it's relatively easy because the dimensions and other properties are well-known and easily documented. And as we mentioned, it would be difficult to print out a handbag because it's not quite so easily defined.

Desktop manufacturing could easily become a buzzword in the near future. Remember, you read about it first in *Digit!* Research in the areas we've mentioned is ongoing and exciting. Roger Spielman of Boeing probably sums it up best: "It's actually happening. You're going to hear a lot about this in the near future. There are hundreds of uses. You can build a part in a part. You can build a ship in a bottle. We can make real things out of dust." ☒

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1/2 pg AD

ANATOMY OF A MICROMIRROR



Digital Light Processing

Digital Light Processing, a technology that led to miniaturisation of projectors, has the potential to replace the ageing film-based projection of movies in theatres, and more...

Sanket Naik

Digital Light Processing (DLP) is a technique used to project images and is based around a specialised optical semiconductor chip—a Digital Micromirror Device (DMD), developed by Texas Instruments (TI). Today, DLP powers general purpose conference room projectors, and over the years, has spawned a new category of small, ultra-portable mobile projectors.

Although initially developed for projection processes, DLP is now used in telecommunications, scientific instrumentation, volumetric displays, holographic data storages, lithography and medical imaging.



Let's take a closer look at what makes a DLP system tick.

The Chip That Rocks The Cradle

The soul of any DLP system is the Digital Micromirror Device (DMD) chip, which was developed by Dr Larry Hornbeck at Texas Instruments (TI) in 1987. Over the years of development, starting from 1977, to the release of the first commercial product in 1996, DLP technology has been perfected to deliver the goods it promises.

A DMD chip consists of an array of two million microscopic hinged mirrors that can be individually tilted using digital signals. The tilting motion allows them to be used as a switch to modulate light in a particular direction, and are often referred to as light switches or Spatial Light Modulators (SLMs).

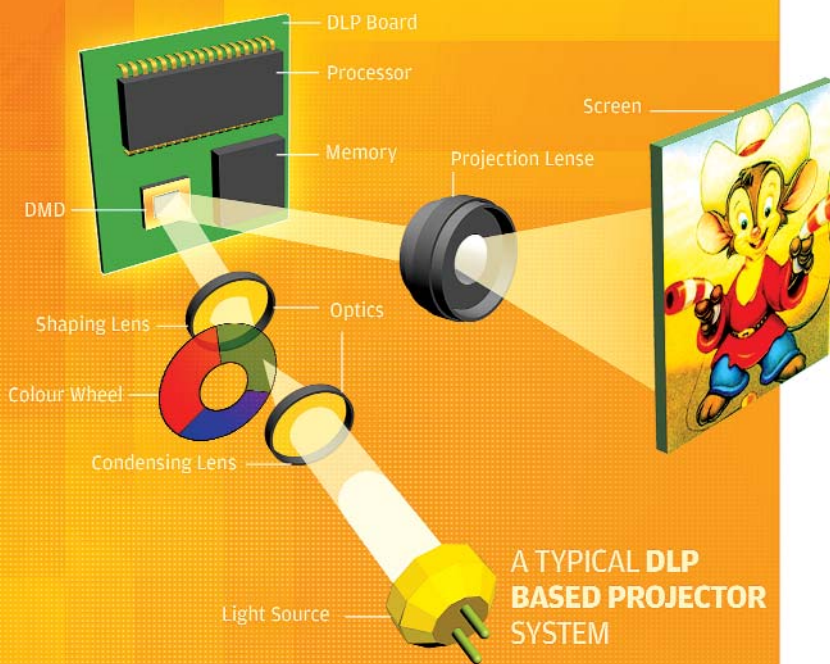
Each aluminium micromirror is a 16 micrometer square, polished to reflect light in the desired direction. The combination of a micromirror, the hinge assembly and an address pad forms one pixel of the DMD.

The Stuff It's Made Of

The mirror has a central post on which it is pivoted (as shown above: *Anatomy Of A Micromirror*); the other end of the post is connected to the yoke of the hinge assembly. The hinge assembly consists of a central yoke that is suspended between two support posts via a torsional hinge.

Two address electrodes are placed coinciding with the diagonal ends of the mirror, with a gap of air left between the mirror surface and the address electrode, so as to enable the tilting motion of the mirror.

The hinge assembly, as a whole, is responsible for the tilting motion of the mirror. The



Imaging Atul Deshmukh, Jayan Narayanan

address pad has two pads—one feeds the address electrodes with the required signal while the other sends the 'Reset' signal to the yoke in the hinge assembly via the supporting post. The address pad acts as an interface between the mechanical mirrors and the CMOS addressing logic that forms the substrate of a DMD chip.

Since a DMD is an amalgamation of an optical device with a semiconductor controlling base, it is called an Optical Semiconductor. Such devices fall under a category known as Micro-Electronic Mechanical Systems (MEMS). A DMD is a 'MEMS' primarily because it has millions of mechanically moving micromirror's controlled via CMOS electronics.

How Stuff Works

To modulate light in a particular direction, the mirror can be rotated to a maximum of ± 12 degrees, depending on the state of the CMOS circuitry lying underneath each mirror. The CMOS applies a voltage to the address electrode of the hinge assembly to create an electrostatic attraction between the electrode and the mirror, which, in turn, results in the tilting of the mirror in the desired direction.

When the CMOS is in the 'ON' state the mirror rotates to $+12$ degrees, whereas when the CMOS is in 'OFF' state the mirror rotates to -12 degrees. Once the rotation completes, the mirror is electro-mechanically latched in the desired direction, and the state of the CMOS can change without affecting the position of the mirror.

Typically, for projection purposes, a metal-halide lamp is used as a light source. The white light from such a source is projected on the DMD using focusing optics.

The arrangement of the light source, with respect to the DMD chip, is such that all micro mirrors that are in the 'ON' state reflect the inci-

Using a single DMD, smaller projectors can be made, which offer results on par with projectors based on slower light modulators

dent light to the pupil of the projecting lens, whereas the micromirrors in 'OFF' state reflect the incident light on to a light absorber.

The controller driving the CMOS states (ON or OFF), can change a thousand times per second. In other words, each mirror on the DMD either switches 'ON' or remains 'OFF' a thousand times per second.

When a particular micromirror remains 'ON' more frequently than 'OFF', it will project a grey pixel on the screen whereas the micromirror that remains 'OFF' than 'ON' reflects a darker shade of grey. In this way by precisely controlling the rotation of the mirrors, the DMD is able to produce a grey scale that can go up to 1024 shades of grey.

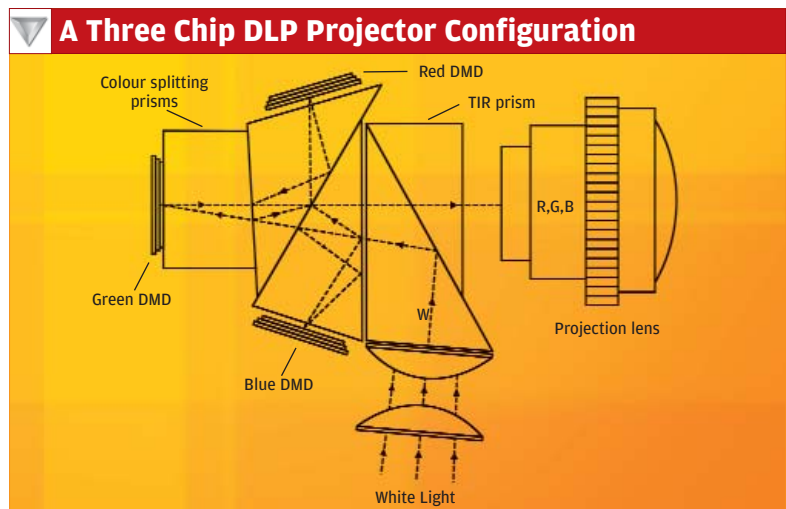
Once you have a grey scale solution in place, producing colour is just a matter of introducing a colour wheel, consisting of red, green and blue filters between the light source and the DMD.

The rotation of the wheel is synchronised with the controller that drives the CMOS of each mirror. Now, for example, to project the colour purple on the screen, a pixel will only project red and blue light.

The colour green is bypassed by ensuring that the micromirror is in the 'OFF' position when the green filter is in position, and turned 'ON' when the Red and Blue filters come into position. Though this actually means that different colours are flashed on the screen a thousand times a second, the naked eye cannot keep up with this and sees a mixture of red and blue—purple.

Now, since each mirror is controlled by a digital signal—issued to the CMOS circuitry by a digital controller—the incident light is said to be digitally modulated, and hence this technique is called Digital Light Processing (DLP). It should be noted that during the whole controlling or modulating process, the incident light never undergoes an optical-to-electrical conversion, as is prevalent in digital cameras and camcorders.

The current generation of DMDs have a mechanical switching time of $15\mu\text{s}$ (microseconds) and an optical switching of $2\mu\text{s}$. Such fast



Three DMD Chips are used in high-end DLP Projectors often used in places such as auditoriums and theatres

Infographic: Shweta S

switching times offer the advantage of using a single light modulator i.e., one DMD, to produce 256 shades per primary colour, as compared to other slower modulators which require three separate modulators for each primary colour.

Thus, using a single DMD, smaller and more compact projectors can be made, which offer results on par or even better than projectors based on slower light modulators, as in LCD technologies, for instance.

DLP In Projectors

Depending on the number of DMDs used (one, two, or three), three configurations of DLP projectors are currently available in the market. Remember, the choice of configuration depends upon the intended application, cost, brightness levels, lamp technology, weight and power dissipation.

One-chip configurations are normally used in consumer grade products such as conference room projectors and televisions. The single chip projector is cheaper, offers decent brightness levels and results in smaller, more portable designs.

Generally, the two chip projectors are used in situations where a longer lamp life is desired since they offer better light efficiency.

Three chip projectors offer the highest optical efficiency, and hence are used in



DMD Chips in increasing order of supported resolution

Digital DMD Controller Chip

venues where large-screen projection is required, such as public information displays, auditoriums and movie theatres. Shown on the previous page is a functional schematic of a three chip DLP projector.

Apart from the above-mentioned parameters, 'Resolution' of the projected image is also important. Products using DLP technology capable of SVGA (800 x 600), XGA (1024 x 768) and SXGA (1280 x 1024) are available in the market. Recently, improvements have added high definition capabilities to DMDs, and such products will be available soon.

DLP Cinema

The goal of most multimedia projector manufacturers is to offer a product that can rival the quality of 35 mm film projection. The motion picture industry has long since shifted to digital technology, in terms of the production of movies; however, movie theatres still use last century's technology to show them to us.

In recent years, the motion picture industry has opted for multi-track sound formats such as Dolby or DTS, resulting in a dramatically improved aural experience. The visual experience though, remains outdated.

Moreover, film-based projection has severe limitations—duplication and distribution is expensive, deteriorating film quality with repeated screening, focus flutters, travel ghosting and inconvenient updating of post production content such as advertisements.

An exciting development in DLP technology is all set to change this with the introduction of DLP Cinema. The goal of DLP Cinema is to make the entire motion picture industry a digital industry, right from the production and distribution, to the final presentation of the film.

In 1997, a prototype using a 1280 x 1024 (SXGA) DMD called the DMD1210 was made, for evaluating the rapid upgrading of existing projectors to produce high quality, high brightness images. It involved the technical and creative community of the motion picture industry. The DLP Cinema technology demonstration projector exceeded the expectations of most people.

Although, the DLP Cinema has apparent advantages over film based projection, as was proved by the demonstration, there are some hurdles that the technology has to see through. A considerable amount of work is needed in terms of data compression, storage, and media delivery, before the 'Cinema of Tomorrow' can materialise. ☒

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DLP Versus LCD

LCD competes directly with DLP in the projector segment, and hence the question arises, "Which is better?" The fact of the matter is that neither of them has a clear advantage over the other. Let's have a quick look at the advantages and disadvantages of both.

Historically, LCD projectors have displayed better colour saturation than DLP projectors. This is because DLP projectors have a clear white panel in the colour wheel to boost brightness, due to which, the picture appears to be brighter than normal, and causes colours to look dull. However, the latest DLP projectors have a six-segment colour wheel, eliminating the white component. Despite this, LCD projectors still seem to offer better colour saturation.

On the other hand, DLP projectors offer better contrast video, with deeper black shades than what LCDs are capable of. Leading LCD projectors are rated to have 1000:1 contrast ratio, whereas a DLP projector is rated at 3000:1.

LCD projectors offer sharper pictures at any resolution, when compared to DLP projectors. The difference in sharpness is seen better when viewing high-detail images of financial sheets, rather than during the playback of video. Of course, this does not mean that DLP projected images are blotchy; the differences can only be made out when a DLP projection is compared side-by-side with an LCD projection.

Unlike LCD projectors, DLP projectors are not plagued by pixelation problems. Nevertheless, advances in LCD technology are overcoming this limitation, and given time, even cheaper LCD projectors will incorporate these developments.

The most obvious advantage of DLP is the compact size of units that use a single chip solution. Though LCD technology also aims at making smaller, more compact projectors, they have a long way to go to catch up with DLP solutions.

Market Overview

DLP projectors are manufactured by most consumer product manufacturers including Sony, Panasonic, Toshiba, NEC, Mitsubishi and InFocus. IT companies like BenQ, Acer and Dell have also entered this field and have at least one DLP model. The cheapest DLP projector is available for Rs 60,000, but the price can go as high as Rs 3 lakh for top-end models, which offer higher resolutions and better features.

Disable the context menu—the menu that appears when you right-click—from appearing when you right-click anywhere on the Desktop. As always, you are not permitted to use third-party utilities. Write in to takeacrack@thinkdigit.com with your solution

THIS MONTH'S CHALLENGE

Disable right-clicking anywhere on the Desktop



LAST MONTH'S CHALLENGE

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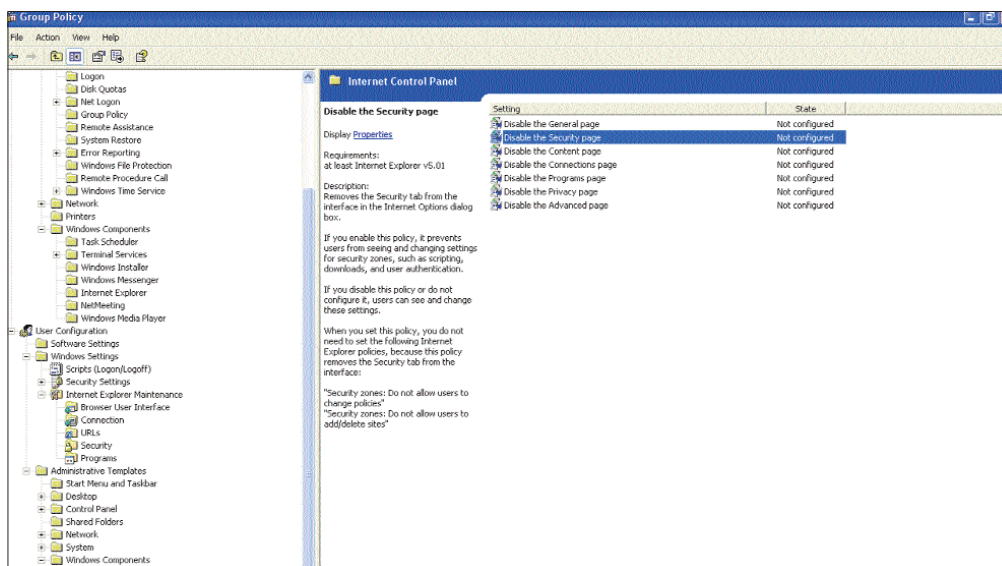
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Remove the Internet Options tabs for Security, Connections and Advanced



To remove the tabs, you need to navigate to Administrative Templates > Windows Components > Internet Explorer > Internet Control Panel. This is what the screen looks like at this point. Here, just disable the required entries

Go to Start > Run, and type in "gpedit.msc". This opens the 'Group Policy Editor'. Once here, go to 'Computer Configuration', and expand Administrative Templates > Windows Components > Internet Explorer > Internet Control Panel. On the right, double-click 'Disable the Security page', and then click the 'Enabled' radio button. Click 'OK'. Then double-click 'Disable the Connections page', and then click the 'Enabled' radio button. Click 'OK'.

Do the same for 'Advanced'. Close the Group Policy Editor. Now, go to

Internet Options—by right-clicking the Internet Explorer shortcut—to see the results.

If you like living dangerously, you can also use the registry editor. Go to Start > Run, and type in "regedit"—this opens the registry editor. Navigate to HKEY_USERS\DEFAULT\Software\Policies\Microsoft. If there is a key 'Internet Explorer' under 'Microsoft', click on it, else create it: right-click on 'Microsoft', click on New > Key, and name the new key 'Internet Explorer'.

Similarly, under 'Internet Explorer', create a

key named 'Control Panel' if it does not already exist.

Now right-click the 'Control Panel' key and click on New > DWORD Value. Name this 'ConnectionsTab'. Double-click it and set its value as '1'. This will disable the 'Connections' tab in 'Internet Options'.

Similarly, create the DWORD values 'SecurityTab' and 'ContentTab', and set their values to '1', to disable the 'Security' and 'Content' tabs respectively. Close the registry editor and check 'Internet Options' to view the changes.

Get ready for the Portable entertainment revolution—play games, music, and videos on Sony's new handheld gaming console

This incredibly powerful and much-awaited handheld device from Sony has sold half a million units in just the first two days of its launch, and not without reason!

The PlayStation Portable features a large 4.3-inch 16:9 aspect LCD screen with a really sharp and crisp 480 x 272 resolution. It supports USB 2.0, Wi-Fi, Memory Stick Duo and uses Sony's proprietary Universal Media Disc (UMD, which is more or less like a mini disc) and has a massive 1.8 gig of space!

Apart from the huge list of game titles that are being released *en masse*, this device will also play music, video and image files, provided you plug in a sufficiently large Memory Stick!

If you put it in the USB mode with the Memory Stick inside, it can also act as a removable USB drive. For a mere \$300

(approximately Rs 15,000), the PSP is absolute value for money, to say the least. We wish it could also make phone calls. Now that would redefine the term portable!



PlayStation Portable



Wacom Intuos3 Graphic Tablet

April
2005

Shyam Shriram

It's like a dream in CMYK at 300 dpi: the Wacom Intuos3 tablet, a must-have for all professional digital artists. The No. 1 tablet in the world, I'm told. I'm also told it feels like pencil on paper—the ideal gadget for someone like me who wants to make the shift to fully digital. Goodbye, pencil! Goodbye, paper!

Day 1

I woke up early—this was a special day for me. I was going to buy the tablet; My Dream Tool. An Intuos3 9 x 12 inch tablet. Yes, 9 x 12; a vast virtual playground for a digital artist like me. It's actually 13 x 17, but the active area is 9 x 12.

Once in my hands, I opened the box delicately – and wow, it was a work of art. A pleasant tungsten grey, it sure had sex appeal!

There's a cute little blue light on the top. Don't know what it does, but it looks cool... Installed the drivers, which was a breeze. The foreplay over, it was time for some real pleasure. I held the grip pen and revved up Photoshop. Doodled for a long, long time in Photoshop and Corel Painter IX.

Day 2

Drawing with a tablet was not a new thing for me—I have another small tablet of a different make, which cannot compare with the Intuos3. It's sooo sensitive. Drawing is much, much more fun now. I'm on top of the world!

Day 4

Came to office with my new dream tool. It's got great flaunt value, too! And trust me, doing my daily work was now heaven!

Day 5

I got two software free with the tablet—nik Color Efex Pro 2.0 and Corel Painter Essentials 2 to experiment with. The Intuos3 is, of course, cordless and battery-free. It has another unique feature—tilt sensitivity, which makes it feel even more like pencil on paper! I can feel the difference in the strokes when I tilt the pen. It feels so realistic, it's easy to forget you aren't drawing on paper.

Day 10

The Intuos3 has 1,024 – yes, 1,024 – levels of tip and eraser (yeah, there's actually an eraser at the other end of the stick) pressure sensitivity, so I can draw

more easily. It's made just for artists like me. There are express keys and a very sensitive touch strip – much like a laptop touchpad – for zooming, panning and more. My tablet has a 200 pps (points per pixel) reporting rate, and an incredible resolution of 5,080 lines per inch.

Day 13

Drawing is now sheer joy. Thank God I am an illustrator! I can drag, zoom, pan; I can choose colours without touching the keyboard. It also has [Alt], [Ctrl], and [Shift] keys as well as a spacebar, and the best part is, it's compatible with all software. Whether it's Photoshop, Painter or Illustrator, it's a made-for-each-other kind of feeling.

Day 18

Just discovered that the Intuos3 has three types of nibs for different drawing experiences. It has a 'Standard' nib; a 'Stroke' nib that includes a dual-spring action for extended tip travel—a real brush-like experience; and a 'Felt' nib designed for a pencil-on-paper feel. Imagine being able to customise the nib according to what you're drawing!

Day 30

By now, I've minimised the use of paper and pencil, because I have The Power Of The Intuos3. Got to leave now—my beauty beckons!

shyam_shriram@thinkdigit.com



54 Mobile Wallet



56 Work Easier



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Digital Tools

Technology For Personal And SoHo Productivity

Jumpstart

GenNext Entrepreneurs

Is having a nationwide retail reach a tall order for businesses? Not anymore, say entrepreneurs who use eBay.in as their online retail outlet

Meera Vankipuram

Where there's a will, there's a Web portal. An adage 'tweaked' for 21st century reality, best describes the endeavours of five entrepreneurs in India who have utilised the marketing portal 'eBay.in' to augment their hitherto offline businesses.

Sangeeta Gupta, vice president, Events, National Association of Software and Service Companies (NASSCOM), says, "The growth of the Internet and the e-commerce market in India has provided an

opportunity for SMBs and entrepreneurs to sell their products to a global marketplace, and also find partners or customers in markets they couldn't reach earlier.

Although, this trend is not as widespread today, it is likely to

proliferate with the growth of websites that provide entrepreneurs this opportunity."

Click To Sell

Chennai-based Shobha Suresh and Sudha Ravishankar own Trendyjute, a business dealing in jute and jute products. Childhood friends and former colleagues at a credit card company, the duo flipped for all things jute, a few years ago.

This mutual 'passion for jute' materialised into a business of customised jute products, built largely through word-of-mouth referrals. Trendyjute, earlier a local offline distributorship, soon started getting queries and orders from all corners of the nation, and



Sudha Ravishankar of Chennai and Devesh Tanna of Mumbai show off the goods they sell on eBay.in

The eBay Way

1 STEP Find Select the product of your choice from hundreds of product categories (and sub-categories), as well as global sites.

2 STEP Buy/Sell Make a list of items you would like to buy. You can avail of the following services on registration—item details, feedback from the sellers, and their contact information.

Similarly, to sell an item, host a picture of your product on the site along with a brief description of the product and your contact details. Also, eBay.in offers 'Advanced Selling Tips' for sellers, visit <http://snipurl.com/dw54>.

3 STEP Pay To make international payments, the two parties can use mutually convenient electronic payment methods or international demand drafts. For

transactions within India, buyers can use the PaisaPay service that facilitates credit card payments and online bank transfers.

In PaisaPay, buyers pay using a credit card or online bank transfer. The seller is credited for the payment once the bank has confirmed the transaction. A cheque/DD is sent by eBay.in to each seller. Sellers are charged a percentage of their transaction for payments made via Credit Card or online bank transfer.

even from people travelling abroad, and NRIs—all through a listing on eBay.in.

Trendyjute's products, including seminar bags, folders, and the like are custom-made in production units at Chennai.

Explains Sudha, "We wanted to utilise our experience of corporate marketing to further our business. We discuss the specifics with clients, and negotiate fabric rates before placing an order with the production units. We involve the customer at every stage."

Expanding Frontiers

While the duo regularly conduct exhibitions to display their products, an online presence has given an incredible boost to their dealings. Says Sudha, "Apart from the exposure it gives our products, I like the payment model on eBay." (See box: The eBay Way)

As an online marketplace, eBay.in helps SMBs to have a self-sustaining business, and avoid overheads such as advertisement, showrooms and marketing. Also, eBay.in gives entrepreneurs an

opportunity to diversify without additional hassles.

Diversification It Is

Diversification is the name of the game, more so, for enterprising businessmen. Meet Devesh Tanna of Mumbai. A commerce graduate, Tanna started out with a wholesale business of selling gifts and toys to retailers, sourced from factories in Noida. Referring to eBay.in, Tanna says, "The portal gave me one more avenue to display my products. I liked the idea—a service that has no initial entry cost or listing price."

Soon computer peripherals caught his 'biz eye', and Tanna realised that there was a good market for these in India. He adds, "I source peripherals from distributors including Rashi, Neoteric, Mediatech and Savex."

"I cannot afford to invest in a website of my own—a business-to-consumer (B2C) portal would require a lot of marketing. Instead, I invested time and effort in surfing eBay.in and identifying

items that were hugely in demand," says Tanna. He claims the business has been profitable till date.

Level Playing Field

Gautam Thakar, marketing director, eBay India, feels that the key advantage of eBay.in lies in the wide 'reach' it gives to sellers. Sellers can access

almost 135 million users from sites in 32 countries.

Thakar says, "Globally, nearly 5 lakh people make all or part of their living on eBay. In India, only a few thousand sellers make most of their income on eBay.in."

He adds, "On eBay.in, one can sell anything—from coins to camcorders. Sellers need minimal or zero investment to start. eBay.in offers tools like 'Turbo Lister' (helps list items offline using eBay's templates) and 'Selling Manager' (a sales management tool that tracks account activity) to assist sellers manage their business and transactions effectively, online."

Indeed, eBay.in levels the playing field. The seller—whether a big brand, SME, trader or an individual—is given the same set of tools, and charged the same amount to trade products and services online.

Retail Right

Praveen Dwarkanath and Amit Rakhecha own Nucleus Computers, a small firm in Bangalore. They employ aggressive sales tactics, such as, hiring three member teams to monitor site activity, answer customers queries and co-ordinate sales. "We began by selling a mere headphone. Today, we sell all computer peripherals online," says Dwarkanath.

"We manage to relieve dealers of stock lots in record time. In fact, we were the largest single sellers of Mercury digicams in South India, some months ago. Once, we sourced a requirement of 72 pieces of a Palm DV camcorder in a few days. We have seen a 30 per cent increase in revenue, due to our online presence on eBay.in since 2001," adds Dwarkanath.

Boosting E-commerce

Using the web for retail is a trend that may signal the revival of e-commerce in India. The prime movers of the next generation of e-commerce models will be entrepreneurs, who are unafraid to depart from the conventional strategies of sales and marketing.


Of course, long-term sustainability will depend on the ability of such entrepreneurs to adapt to rapid market changes and technological advancements. For, to the smart e-enabled marketer, belong the spoils. ■

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www.ebay.in: An online haven for Indian retailers


Place Tables Side By Side

 To position two tables adjacent to each other instead of one above the other, first insert two tables, one above the other. Adjust the column widths to ensure that the width of each table is less than half the width of the page. Select both tables. On the toolbar, go to **Format > Columns**, and select 'Two' under 'Presets'. The two tables should now appear side by side.


Precise Table Measurements

 You can adjust table column and row widths by dragging the cell boundaries. But these boundaries snap to a grid, and it can be difficult to line up your columns or rows precisely. First, make the ruler visible (if it isn't already) by clicking 'Ruler' in the 'View' menu. Now, to turn off the default 'Snap to Grid', and to display detailed column and row measurements in the ruler, click a cell and then hold down [Alt] as you drag the column boundaries.

Adjust Table Placement

 To reposition a table in Word, in the 'Print Layout' view, rest the pointer on the upper-left corner of the table until the table move handle (a four-headed arrow inside a box) appears. Click the handle, and use it to drag the table to the desired location.

Specify Spacing Between Sentences

 Word can help you ensure that your spacing between sentences is consistent—one space or two. You can do this by setting rules for grammar and style. To do this, on the 'Tools' menu, click 'Options', and then click the 'Spelling & Grammar' tab. Click 'Settings'. In the 'Grammar and style options' box, under 'Require', select the options you want for the number of spaces required between

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sentences. To restore the original rules of the selected grammar and writing style, click 'Reset All'.


Position Clip Art Using Text Boxes

 A text box is a moveable, resizable container for text or graphics. In Word, you can use a text box when you want more precise control over the position of clip art. On the 'Drawing' toolbar, click 'Text Box'. Click the border of the box that contains the words 'Create your drawing here', then click the text box that appears, and drag it where you would like to position the graphic. To add clip art to the text box, place your cursor within it, click 'Insert', point to 'Picture', and click 'Clip Art'. In the 'Insert Clip Art' task

pane, use the search interface to select your clip art.

Note that you can use the options on the 'Drawing' toolbar to enhance a text box—for example, to change the fill colour, just as with any other drawing object. Also, when using a text box to display a graphic, be sure to change the line colour on the text box to 'No line'. You can do this by right-clicking the border of the text box and choosing 'Format Text Box'.


Easy Access To Often-used Documents

 The 'Work' menu is a great feature that you probably do not know about. You can use the 'Work' menu to keep an easily accessible list of your frequently-accessed Word files. To add the Work menu to the menu

bar or a toolbar, on the 'Tools' menu, click 'Customize', and then click the 'Commands' tab. In the 'Categories' box, click 'Built-in Menus'. Click 'Work' in the 'Commands' box, and drag it to the menu bar or displayed toolbar. Now, with the Work menu in place, you can add any open Word document to your list. The options you have are:

- ☐ To add the current document to the Work menu, click 'Add to Work Menu' on the Work menu.
- ☐ To open a document on the Work menu, click the document you want to open on the Work menu.
- ☐ To remove a document from the Work menu, press [Ctrl] + [Alt] + [-]. The cursor will look like a large, bold underscore. Now on the Work menu, click the document you want to remove.


Add Watermarks To Your Documents

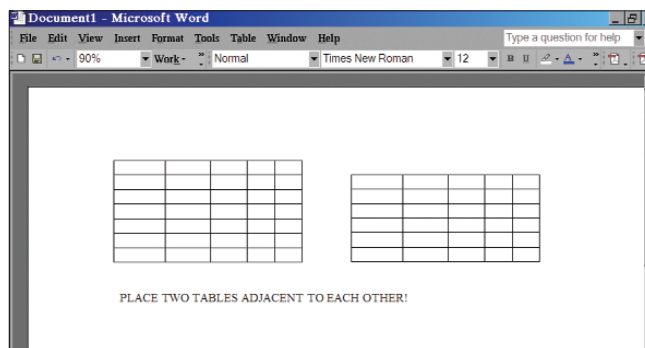
 Watermarks are text or pictures that appear behind the text. They can identify the document's status, marking a document as a draft, for example. You can use graphics or text as watermarks. To add a watermark to a printed document, go to **Format > Background**, and click 'Printed Watermark'. Then do either of the following:

- ☐ To insert a picture as a watermark, click 'Picture watermark', and then click 'Select Picture'. Select the picture you want, and then click 'Insert'.
- ☐ To insert a text watermark, click 'Text watermark', and then select or enter the text you want.

Now select any additional options you want, and then click 'Apply'. To view the watermark as it will appear on the printed page, click go to **View > Print Layout**.

Modify The Custom Dictionary

 To add, delete, or edit words in a custom dictionary, go to **Tools > Options**, and click the 'Spelling & Grammar' tab. Click Custom Dictionaries. Choose the checkbox next to




You can place tables side by side in Word!

the dictionary you want to edit. Click 'Modify'. Then, do one of the following:

- ☑ To add a word, type it in the 'Word' box and click 'Add'.
- ☑ To delete a word, select it in the 'Dictionary' box and click 'Delete'.
- ☑ To edit a word, select it in the 'Dictionary' box, modify it, and then click 'Add'. Delete the previous version.

Mail Merge

 In Word, Mail Merge is used to create form letters, mailing labels, or envelopes. One document is the 'Data Document', which contains all the names, addresses, and other variable information. This data is merged with the 'Main Document', resulting in a third document, which has as many sections as there are records in the 'Data Document'.

Word XP uses a new feature called the 'Mail Merge Wizard' to guide you through the merge process. If you want to try the 'Mail Merge Wizard' in Word XP, choose it from the 'Letters and Mailings' menu. The directions appear in the task pane on the right side of the screen.

If you don't like the Word XP Mail Merge Wizard, you can install the Word 2000 'Mail Merge Helper'. You'll have to make two modifications to your installation of Word XP: adding the 'Mail Merge Helper' to the Word XP tools menu, and adding the 'Insert Merge Field' button to the Word XP Mail Merge toolbar.

Add The Mail Merge Helper To The Word XP Tools Menu


 To do this, go to Tools > Customize. In the Customize window, select the Commands tab. Select 'All Commands' from the 'Categories' list on the left. Then select 'Mail Merge Helper' on the right. Drag 'Mail Merge Helper' to the 'Tools' menu (the Tools menu will open). Continue holding the mouse button and drag 'Mail Merge Helper' to the

'Letters and Mailings' menu item (the Letters and Mailings menu will open). Continue holding the mouse and drag 'Mail Merge Helper' to the first position in the list of items. Release the mouse button; 'Mail Merge' will appear on the menu. Finally, click 'Close'.

To add the 'Insert Merge Field Button' to the Word XP Mail Merge toolbar, go to View > Toolbars, then select 'Mail Merge' to display the 'Mail Merge' toolbar. Then go to Tools > Customize. In the 'Customize' window, select the 'Commands' tab. Select 'Mail Merge' from the 'Categories' list on the left. Select 'Insert Mail Merge Field' on the right. Then drag 'Insert Mail Merge Field' to the 'Mail Merge' toolbar, and position it to the left of the 'Insert Word Field' button. Release the mouse button—the 'Insert Merge Field' button will appear on the toolbar.


At this point, if you don't need the 'Mail Merge' toolbar now, go to View > Toolbars, then select 'Mail Merge' to hide the 'Mail Merge' toolbar.

Create A Set Of Merge Documents

 To create a set of merge documents, choose go to Tools > Mail Merge. (Word XP users should choose 'Letters and Mailings' from the Tools menu first). This will start the 'Mail Merge Helper', which will guide you through the three-step process:

- ☑ Create the Main Document (Form Letter, Mailing Label, or Envelope).
- ☑ Specify a Data Source (create from scratch or use an existing document, which is usually a Word table or an Excel spreadsheet).
- ☑ Merge the 'Data Source' with the 'Main Document'.


Save Word Documents As Web Pages

 Word has a 'Save as Web Page' command on the File menu. In addition, there is an 'Insert Hyperlink' button on the toolbar, as well as two additional toolbars for the web: 'Web' and 'Web Tools'. To

activate these toolbars, go to View > Toolbars. If you save a Word document as a Web page, Word includes XML (Extensible Markup Language) tags, which enhances the format of the web page, but may cause problems with some Web browsers. Pages created with Word work best when viewed with the current version of Microsoft Internet Explorer.

You can download an HTML filter for Word 2000 that will allow you to Export as Compact HTML—compact HTML removes most of the XML tags. When you save a Word document as a Web page, the formatting is converted into the appropriate HTML code, although some formatting will not be displayed on the Web page exactly as it appeared in Word. To download the HTML filter for Office 2000—"Office 2000 HTML Filter 2.0"—go to <http://snipurl.com/6mx2>.


Sharing A Word Document In Other Versions

 If you want to share a Word document with someone who doesn't have your version of Word, go to File > Save As, and in the 'Save as type' box, select the file type you want to use.

If you're not sure what file type will work—such as when you are sending a document to someone else—choose 'Rich Text Format' (*.rtf) or WordPerfect 5.1 for DOS (*.doc). All recent word processing programs for Windows or Macintosh can read either of these formats.

However, the conversion is sometimes not perfect and any formatting Word cannot convert will be discarded.

Put An Excel Chart In A Word Document

 The easiest way to insert an Excel chart into a Word document is to open the chart in Excel, copy it, then paste it into your Word document. You may have to resize the chart after you get it into Word.

To resize the chart, go to Format > Object. The 'Format Object' dialog box has a 'Size' tab, and the 'Layout' tab has



Bet You Didn't Know

Count The Number Of Words In A Cell

To count the number of words in a cell in Excel, enter some text into a cell, say A1. Then use the following formula in cell A2: `=IF(LEN(A1)=0,0,LEN(TRIM(A1))-EN(SUBSTITUTE(TRIM(A1)," ")))`

This should give you the correct result in cell A2.

options for setting the flow of text around the chart.

You can also insert the chart as a linked or embedded object. A linked chart stores the data in the original Excel worksheet. If you edit the spreadsheet, the changes are reflected in the linked chart in Word.


An embedded chart is stored in the Word document. To create a linked or embedded chart, go to Insert > Object. Click the 'Create from File' tab. Enter the filename, or use the 'Browse' button to locate the file. An embedded object is created if you don't check the 'Link to file' checkbox.

When you create an embedded object from an existing Excel workbook, the entire workbook is inserted into your document. The document displays only one worksheet at a time.

To display a different worksheet, double-click the Excel object, and then click a different worksheet.

MS EXCEL

Sheet And Workbook Names And Paths

 The 'Cell' function returns information about the formatting, location, or contents of the upper-left cell in a reference. So, to get the name of the current sheet, you can use this formula: `=MID(CELL("filename"),FIND("[",CELL("filename"))+1,255)`

To get the workbook name: `=MID(CELL("filename"),FIND("[",CELL("filename"))+1,(FIND("]",CELL("filename"))-1)-FIND("[",CELL("filename"))-2)`



Watch TV Using Winamp

Use Winamp TV, a free plug-in, to catch your television and FM shows on Winamp

Jayesh Limaye

After going through the ATV tuner card roundup in this issue of *Digit*, chances are, you want to get yourself a TV tuner right away! Remember, though, that the TV viewing applications that TV tuners come bundled with provide only a few, basic features.

Winamp in contrast, is a free multimedia viewing application for which a host of free plug-ins are available. One such is Winamp TV, developed by Branimir Lambov. You can access the Winamp TV at <http://snipurl.com/dzi7>, moreover, it's only a 250 KB download.

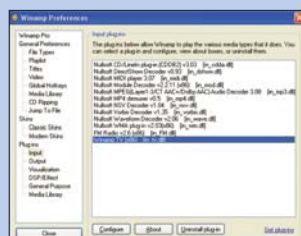
The plug-in enables Winamp to be used in conjunction with your TV tuner card, as a TV viewing application, and an FM radio if your card has a tuning unit.

Winamp TV uses Microsoft's WDM streaming technology to play video and sound, and so requires WDM drivers—these come bundled with most newer TV tuner cards. Also, the next version of this plug-in will have the capture facility, which will allow you to capture audio and video to your hard disk.

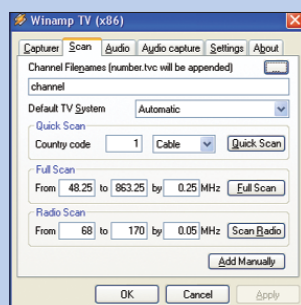
1 Installation And Configuration

You must download the installer and run it—it will install the plug-in to Winamp's plug-in directory.

Start Winamp and go to the preferences menu ([Control] + [P]). Click on 'Input' under 'Plug-ins'. Next, select the Winamp TV plug-in, and then click 'Configure'.



Select the Winamp TV plug-in in Winamp preferences



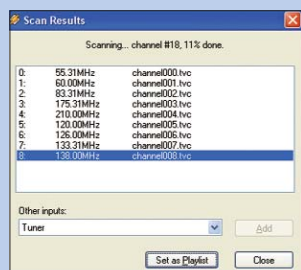
The Winamp TV configuration channel scanning window

You can specify the stream size in the 'Video Size' box, and if your display card supports it, you can opt to use Video Mixing Renderer 9 (VMR9) for better image quality.

If you select 'Winamp Video' under 'Output Window', Winamp's default video output window will be used to play the TV video.

2 Scanning For Radio And TV Channels

Click the 'Scan' tab and you can scan for TV channels as well as for FM



The scan results show up in this window. Save them as a playlist

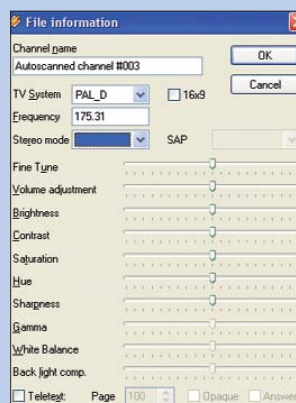
radio channels. First-timers will find it easier to leave the settings alone and just click the 'Quick Scan' button.

Winamp TV will begin scanning for all available TV channels, and when the scan is complete, save the channels to a playlist by clicking 'Set as Playlist'.

If you find that you're missing some channels, you can try the 'Full Scan' option, however, this takes a lot more time than Quick Scan.

You can also scan for FM radio channels by clicking 'Scan Radio'. Again, save the scanned channels by clicking 'Set as Playlist'.

3 Final Settings Click the 'Audio' tab, and select the appropriate mixer line, which lets you control the channel volume from



Use this page for fine-tuning and also for other adjustments



Double-click a channel in your playlist to watch it—just as though it were a track!

within Winamp. This is usually Line-in, but you may experiment with different settings if it doesn't work.

Check the 'Capture Audio' checkbox in the 'Audio Capture' tab to enable the Winamp DSP plug-ins to process the TV audio. However, this feature is in the beta stage, and may cause Winamp's volume control to stop working.

Click 'OK' to close the plug-in configuration window, and then close the Winamp preferences window. You can now double-click a channel in the playlist to view it.

Click the volume icon in the system tray to adjust the volume. You can fine-tune channels by clicking the channel name in the playlist and pressing [Alt] + [3].


jayesh_limaye@thinkdigit.com

To get the path address and workbook name:

=CELL("filename")

To get the path address:
=MID(CELL("filename"),1,FIND
("[",CELL("filename"))-1)

Use A Combo Box In Excel

 Say you want to select a month from a drop-down list, and have the month number (as in "3" for "March") appear in a cell. Here's how to go about it.

First, add a list of months. Select the list. Press [Ctrl]+[F3] and define the Name, say, 'MonthsList'. Select cell B2-this is the cell where the month number will be displayed. Press [Ctrl]+[F3], and define the Name as 'MonthNumber'.


Now, place the mouse arrow over any toolbar, right click, and select 'Forms' from the shortcut menu. Click the 'Combo Box' icon. The cursor changes into a cross. Select a cell in the sheet, and draw the shape that you want for the combo box. A combo box will appear.

Select the combo box you just created, and make sure you are in edit mode. Right-click, and select 'Format Control' from the shortcut menu. Select the 'Control' tab.


In the 'Input Range' box, type in 'MonthsList'. In the 'Cell Link' box, type 'Month Number'. Select the 3D shading checkbox, and click OK.

You should now be able to select a month from the combo box and see the month number appear in cell B2.

Create A Hyperlink

 You can create a hyperlink in a cell to any document you want. First, select a cell. Press [Ctrl]+[K], or select the 'Insert Hyperlink' icon from the toolbar. In the 'Insert Hyperlink' dialog box, just fill in the necessary fields, such as the text to display and the address.


Apply Formatting Only To Certain Cells

 In Excel, you can apply formatting to cells that contain only certain types of data, even if you select an entire range. For example, to apply a certain style only to cells that contain text, first select a range of cells.

From the 'Format' menu, select 'Conditional Formatting'. In 'Condition 1', select 'Formula Is' from the dropdown list. Now, in the Formula Box, enter the formula '=ISTEXT(A1)'.

Click 'Format'. Select the desired format from the 'Format Cells' dialog box, and click 'OK'. Again, click 'OK' to close the 'Conditional Formatting' dialog box.

Use AutoCorrect To Enter Special Symbols


 You can use AutoCorrect to enter special symbols, for example, foreign

characters. Here, we'll use the example of the euro sign (€).

In a cell, enter the formula '=CHAR(128)', press [F2], and then [F9]. This will paste the euro sign as a value. Copy the euro sign from the formula bar using [Ctrl] + [C]. Now from the 'Tools' menu, select 'AutoCorrect'. In the 'Replace' box, type in "euro", and in the 'With' box, press [Ctrl] + [V]. Click Add, and click OK.


Now, you can type in the word "euro" in any cell. It will change to "€".

Add Hidden Text To Formulas

 Say you have a formula like '=12018+1056-4*1120'. When you wrote it, you knew what each number represented, but when you look at the sheet again, you find you can't remember what the numbers are for. In such cases, you can add a hidden note to your formula by using the 'N()' formula. Change the above to read:
=12018+1056-4*1120+N("My wage + bonus - four weekly loan repayments").


The 'N()' function converts text to zero.

Formula Syntax

 When writing formulas in Excel, you sometimes need a quick reminder of the formula syntax. Type an equals sign followed by the function name, and push [Ctrl] + [Shift] + [A]. For example, typing '=Vlookup' and then pressing [Ctrl] + [Shift] + [A] will give you:
=vlookup(lookup_value,table_array,col_index_num,range_lookup).

Non-bold font arguments are optional.

Inverting A List


 There is a simple and elegant way to invert a list in Excel. First copy the list to another location using Copy > Edit > Paste Special > Value. Now select all data in the list, and go to Tools > Options > Custom Lists.

Ensure the list address is in 'Import list from cells:', and then click 'Import'. Now go back to the column next


to your list, and in the top cell, place the last entry from your list.

In the cell below, place the second-last entry. Select both cells and double-click on the 'Fill Handle' (the small black square at the bottom right).


Hiding And Unhiding Columns

 To hide a column, select a cell or cells and press [Ctrl] + [0]. To unhide a column, select the cells to the left and right of the hidden column, and press [Ctrl] + [Shift] + [0].

Changing Cell Indentation


 Say your data is in cells A2 through A6. Select the range A2:A6 and press [Ctrl] + [1]. Select the 'Alignment' tab, and in the 'Indent' box, change the number of characters to indent. Click OK.

Copying Cell Content Across Sheets

 To fill across sheets or to copy information from the selected cells to all sheets in the workbook simultaneously, first copy the range of cells. Right-click the sheet tab, and from the shortcut menu, select 'Select All Sheets'. From the 'Edit' menu, select 'Fill' and then 'Across Worksheets'. In the 'Fill Across Worksheets' dialog box, check one of the three option buttons and click 'OK'.

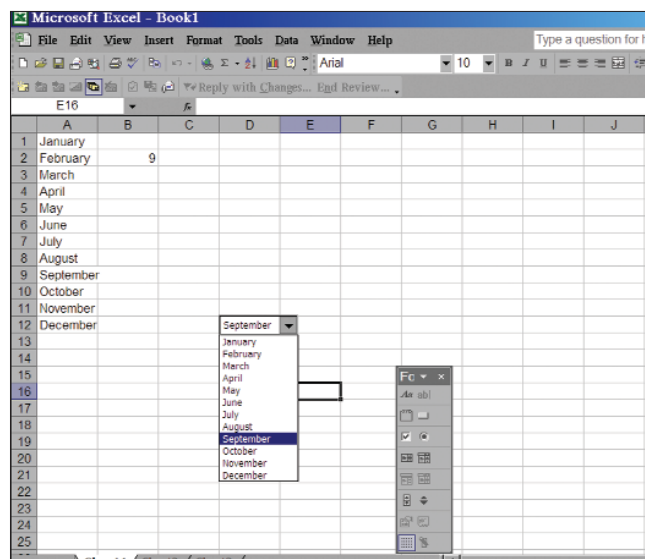
MS POWERPOINT

Multiple Slide Masters

 A new feature in PowerPoint 2002 is that you can use multiple slide masters in a single presentation.

The slide master is an element of the design template that stores information including styles, placeholders, and colour schemes. Using the slide master, you can make global changes—such as replacing a font style—across all the slides in your presentation.

When using multiple slide masters, remember that



You can actually create a combo box in Excel!

if you want to make a global change to your presentation, you need to change each slide master. To insert a slide master, go to **View > Master**, and click 'Slide Master'. Then do one of the following:

- ☑ To insert a slide master that uses the default styles in PowerPoint, on the 'Slide Master View' toolbar, click 'Insert New Slide Master'.
- ☑ To insert a slide master by adding a new design template, on the 'Formatting' toolbar, click 'Design', point to the design you want, click the arrow, and select one of the options on the shortcut menu.

To replace or add slide masters, go to **View > Master**, and click 'Slide Master'. On the toolbar, click 'Design'. If you want to replace selected, rather than all, masters in the presentation, select the masters in the thumbnails on the left. Then in the 'Slide Design' task pane, point to the design template you want, click the arrow, and perform one of the following tips:

- ☑ To replace selected masters with masters for the new design template, click 'Replace Selected Designs'.
- ☑ To replace all the current masters with masters for the new design template, click 'Replace All Designs'.
- ☑ To add a new design template and its masters to the presentation, click 'Add Design'.

Toggling Case

☛ If you have text that is in the wrong case, select the text, and then press [Shift] + [F3] until it changes to the case style that you like.

[Shift] + [F3] toggles the text case between the all caps, lowercase, and initial capital styles.

Using Guides

☛ Make the guides visible by clicking **View > Guides**. Then, hold down [Shift] while you click-and-hold a guide; the tool-tip for the guide will display 0:00. As you move the guide, the distance the guide covers from the beginning of the drag will be displayed in the units of your ruler. This way, you can measure distances

between objects, place guides at specific places, and so on.

Preview Fonts

☛ If you would like to see previews of fonts in the font selection of the formatting toolbar, go to **Tools > Customize**, click on the 'Options' tab, and click 'List font names in their font'. Click 'Close'.

Resizing Proportionately

☛ You can resize images while retaining proportions. Select the objects one at a time, keeping the [Shift] key pressed. Drag one object to the desired size, and PowerPoint will automatically scale them all.

Import Outlines From Word

☛ Instead of creating presentation outlines in PowerPoint, they can be imported from Word.

First, open the file in Word, and click on **File > Send To**. Select 'Microsoft PowerPoint' to export the outline to PowerPoint. It will help to have the outline properly formatted with Word's heading styles.

Create Semi-transparent Objects

☛ To create a semi-transparent object, select the object you want and then 'ungroup' it by clicking **Draw > Ungroup** from the 'Draw' toolbar. Once the object is ungrouped, regroup it by selecting the 'Group' option, again from the 'Draw' menu. This will convert the picture to a Microsoft Office Drawing Object. Click **Format > Object**. Under the 'Colours and Lines' tab, check the 'Semitransparent' box. Click 'OK'.

Use Curved Text

☛ WordArt allows text to be styled and twisted in various ways. For using curved text in PowerPoint, click **Insert > Picture > WordArt**, choose the style you want to apply to the text, and click OK. A dialog box will prompt you for the text to be placed in the given format. After the WordArt

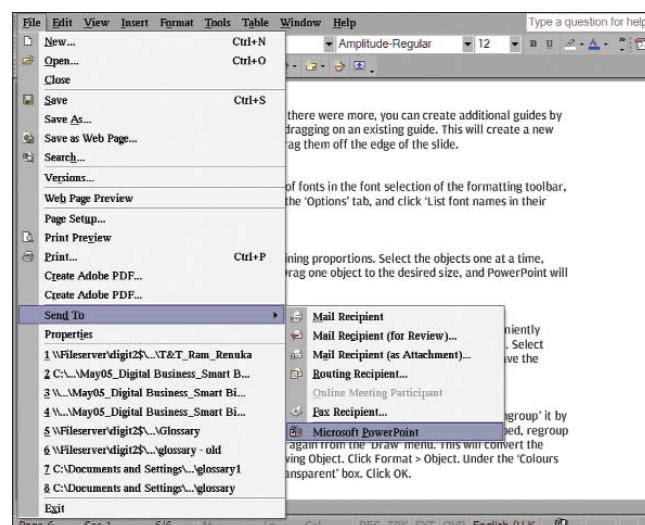
object has been generated, select it and click on the 'Shape' button on the 'WordArt' toolbar. Here, you can choose the style in which you want the text to be bent.

Change Fonts On All Slides

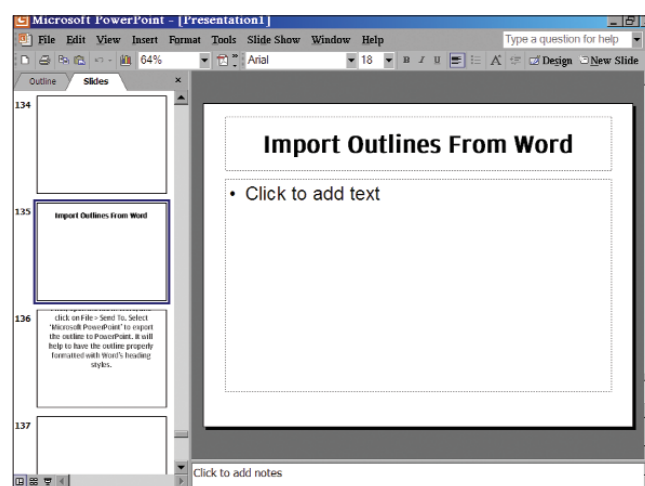
☛ If you need to change the font on all your slides, open your presentation and go to **View > Outline**.

PowerPoint now shows you a slide-by-slide view of all the text in your presentation. So if you want to change all the text in your presentation to a different font, in Outline view, select 'Select All' from the 'Edit' menu. Now click **Format > Font**. Choose the font you want and click 'OK'.

All the text in your PowerPoint presentation will now be displayed in the new font.



Use the Send To option in Microsoft Word to...



...conveniently import presentation outlines

Bet You Didn't Know

Using More Than One Guide

If you like using guides, and wish there were more, you can create additional guides by simply holding down [Ctrl] while dragging on an existing guide. This will create a new guide. To get rid of guides, just drag them off the edge of the slide.

Mobile Buying Tips

Try Before You Buy

☛ It's always a good idea to try your hands on the model before you finalise a purchase. Find out if any of your friends has the same piece, so you can try out the interface and the feel of the phone to make sure you are



Make DVDs Of Your AVIs

If you have a DVD drive and a DVD player, it's easy to convert your AVI files to DVD—and then watch them on your TV set

Varun Dubey

If you have AVI movies that you are tired of watching on your PC's small screen, and, in addition, you don't want to write them to a CD because of the loss in quality, here's how to convert your AVI files to DVD.

The most incredible thing about this is that the required software is absolutely free, and performs better than most of the paid versions we've seen!

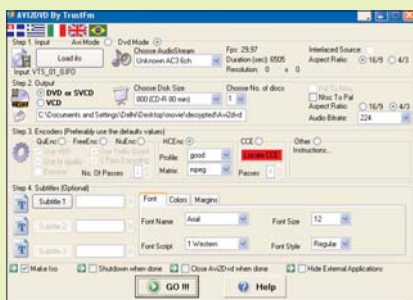
You Will Need

- ❑ A DVD-Writer for burning the DVD. As of now, DVD-Writers retail for roughly Rs 4,500.
- ❑ The software, Avi2DVD, which can be found at <http://snipurl.com/e0ze>

1 STEP The Input

Post installation, firing up the software brings up a single window interface, which is akin to Nero's info tool. This is the command centre for all the encoding. There is an option to select from two input modes—AVI or DVD.

Since you would like to convert existing AVI files to DVD, you will need to choose the AVI mode. Interestingly, in the AVI mode, the software takes not only .AVI files, but also .OGM (Ogg Media files) and .MKV (Matroska Video files).



The options available at startup

2 STEP The Output

Here, you can select the output format for your movie file. You can choose between DVD, SVCD and VCD.

Then, using the drop-down menu, you can select the disk size that you are using. This ranges from 740 MB for a CD-ROM to 8.5 GB for a dual-layered (DL) DVD.

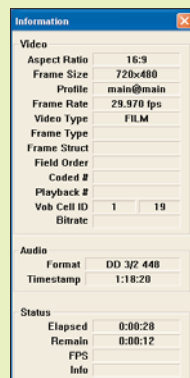
Remember, to burn a DL DVD, you need to have a DVD-Writer that supports DL writing, as well as compatible media.

You can also specify the screen aspect ratio—16:9 for wide-screen TVs, or 4:3 for regular TVs. The software even allows you to specify the video format—NTSC or PAL (PAL is the standard used in India).

A thoughtful addition is the ability to specify the number of disks you want to spread your movie across—the software splits the output file accordingly!

3 STEP Encoding

Once you have selected the output mode, you can select the codec you would like to encode your movie with.



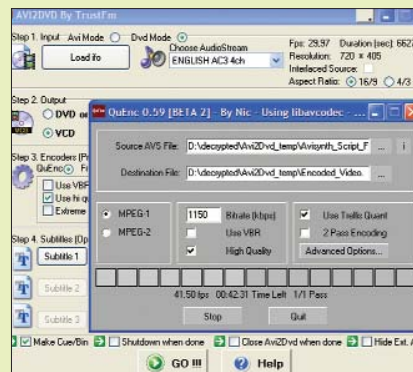
Here, choose the options you want for the actual encoding of the AVI file

Incidentally, the software offers four encoders by default. These are QuEnc, NuEnc, FreeEnc and HCEnc. All these are freely available, so you need not worry about payment or copyrights. They get installed with the software.

In our tests, we found that the encoders provided do a pretty good job.

There are also various options such as VBR (Variable Bit Rate, which reduces file size without noticeable loss in quality), an option to set the output to High Quality with one click, and an option to set the number of passes for your movie encoding. The more the number of passes, the better the output will be.

If you are making a DVD, the software even allows you to add



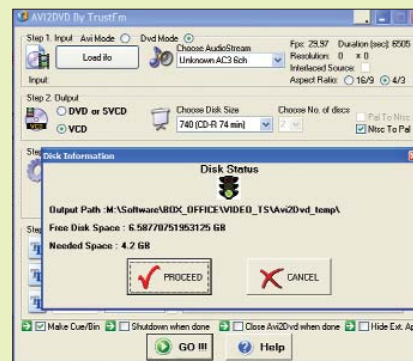
You get advanced options just prior to burning your DVD

subtitles to the movie. Moreover, you can select font type, size, colour margins, and even the language!

Using the software does not lead to any audio quality loss, and retains the number of channels your original file had.

4 STEP Burn It!

Once you have encoded your file, navigate to the directory where you saved the original file. You will find a folder called Avi2DVD_temp (or whatever folder name you specified).



When you're sure you've made all the correct choices, just burn your ready-to-view DVD!

Inside this, you will find the .CUE files. Burn these using your favourite writing software, and your DVD is ready!

varun_dubey@thinkdigit.com

comfortable with it. Apart from the interface, check out the size and weight to make sure it fits in with your requirements. If someone you know already owns the phone, he or she will also be able to tell you about the battery life and its other pros and cons. Some dealers also let you try out a demo piece.

Stick To Your Budget

The market is flooded with all sorts of phones. You may be lured to buy a more expensive phone than you can afford, but resist the temptation! Remember that you will be paying for all the features that the device offers, but it may be a waste if you will not use some of them.

Check The Talk-time

You should always check the talk-time of the phone before buying. Most mobile manufacturers specify this on the packaging box. However, it will be better if you can confirm this from a trusted source, such as a *Digit* review, or from someone you know who owns the same model.

Power Woes

There are usually two types of batteries available in the Indian market: Lithium Polymer and Lithium-ion. While buying a new phone, it's advisable to buy one with a Lithium Polymer battery, as these are slimmer and have a larger power capacity. A third type of battery, Nickel Metal Hydride, was used in older models, but has been mostly discontinued as these are heavier and have less power capacity.

Size, Shape And Weight

It's advisable to opt for a medium-sized phone that easily fits in your pocket. It's easier to hold and use such phones than newer, tiny models, even if the latter look more appealing—especially if you have large hands.

Also check out the weight, as the weight mentioned by the manufacturer could be

without the battery. Some users may prefer to opt for flip models over the standard candy-bar phones.

Scheduling your work

Most phones give you the functionality of a calendar and task options, which allow you to create daily schedules. However, the calendar could prove inconvenient if you are not provided with a monthly view.

Internal Memory

Some basic phones do not give you any internal phonebook memory. High-end phones provide fixed allocated memory ranging from 300 to 500 contacts, and also give you the flexibility of adding

data. If you're buying a high-end phone, it's advisable to buy one that supports external memory so that you can add more when you need. Again, this is important for phones with features that require extra storage.

Colour Display

If your budget permits, buy a phone that provides a colour display—the prices of these phones have come down drastically. The choices range from phones that can display 4K colours, 65K colours, and now even 260K colours. Generally speaking, phones with screens that can display more colours will be more expensive.

Tri-band Or Dual-band

Check if the phone supports dual-band, and

distances. If your phone supports Bluetooth, you can also use a Bluetooth headset in most cases.

The advantage of Bluetooth over infrared is that apart from being faster and having more range, Bluetooth does not require line-of-sight, as is the case with IR.

Multimedia Messaging Service (MMS)

Most high-end phones have this feature, which allows you to send and receive rich media messages (comprising text, sounds, images and video).

However, most phones have a size restriction per message, and they may not allow you to forward audio. Before buying an MMS-enabled phone, make sure you take into consideration the file size restrictions and its capability to send audio.

Concatenated Messages And Character Support

The GSM standard restricts you to messages containing 160 characters, so a phone that supports concatenated messages enables you to send longer messages. Phones that have support for Unicode will allow you to display blinking messages.

Bundled Accessories

Most expensive phones bundle quite a few accessories in the form of a communications cable, a desktop charger, a leather case, etc. Check for these.

Voice Dial

This is a system that allows you to dial a telephone number by just saying the person's name. Voice dial is convenient, and useful in places where you cannot see the keypad or when your hands aren't free.

OS And Application Support

Most high-end phones allow you to install additional games and applications depending upon the OS and available memory. Options available include Symbian and Series 60.



A Bluetooth handsfree headset has more range than an infrared one

Fuel cell-powered mobile cartridges are good when you're travelling

multiple entries for each contact—such as different phone numbers for home, work, mobile etc.

Hence, before buying a phone, take a look at the amount of internal phone memory that it ships with.

Internal memory is all the more important for phones that have features such as an integrated camera, MP3 playback, voice recording etc, as you will require more memory for storage.

External Memory Support

Many mid-range and high-end phones give you the flexibility of adding external memory modules, which allow you to add more

preferably tri-band, which ensures that you can use the phone globally.

Infrared Port


Most new phones give you lots of connectivity options. Phones with infrared allow for a wireless connection between a computer and the phone. You can use infrared to send and receive phone book entries (business cards), reminder notes, images and much more.

Bluetooth

Bluetooth provides a very user-friendly way of transmitting data at high speeds over short


A variety of third-party games and applications are available for purchase or even free download. If you are a power user who would like to use specific games or applications on your mobile, you will need to check whether they are supported on your new phone.

Data Input Mode


 If you are buying a high-end smartphone, you also need to consider the mode of data input. Some phones use a touch-screen and stylus to enter data, while some may offer a full-fledged keyboard. Some phones come with both options. If you are going to enter a lot of data, make sure you are comfortable with the options available.

A screen protector is a transparent film that sticks on to the top of the screen.

Change That Look


 Most Nokia phones, and even some other brands, allow you to customise the look of your phone by changing the external body casing, keypads, etc. You can choose from lots of stickers and cool flickering LEDs, which you can stick on your phone's back panel or the antenna. Watch them blink and jazz up your phone!

Carry It Safe

 Various types of carry pouches, belt clips and cases are available for different phones. Ranging from leather to cloth, you should be able to find one

memory format and the highest capacity supported by your phone.

Free Your Hands


 Handsfree adapters will free you from having to hold your phone all the while you speak. Depending on your budget and what your phone supports, you could go in for plain ones that start from Rs 100 for locally made ones and Rs 400 for the genuine thing.

If your phone has Bluetooth, go in for high-end Bluetooth wire-free headsets starting from Rs 2,800 (grey market). Original top-of-the-line handsfree sets from Nokia will set you back by Rs 6,000.

Looks apart, the reason you should look at Bluetooth handsfree is that it's wireless, and has a range of approximately 30 feet, so you can move around without being attached to your phone.

Another kind of handsfree that is gaining in popularity is radio handsfree. If your phone doesn't have a built in radio, then you can buy such a handsfree with integrated radio.

Phone Care Tips

 ☐ Never keep your phone near heat and magnetic sources (gas stoves, direct sunlight, audio speakers, etc).

☐ Switch off the device if it's not going to be used for some period of time. If you don't tend to use your phone for a long while, remove the battery and store it in a cool, dry place.

☐ Keep the device away from moisture and liquids. Avoid taking the phone into areas like kitchens or washrooms.

☐ Avoid storing or using it in dusty areas: the moving parts could get damaged.

☐ While charging the device, do not pull the adapter cord out of the device until the electricity supply is switched off.

☐ Switch off the phone before removing the battery or changing your SIM card.

☐ Use only approved accessories and batteries. Do not connect incompatible

products. Always use rated and factory-specified accessories for your phone. If, for example, you use a higher power rating charger, it will charge faster, but battery life could be lowered, and the phone could even get damaged.

☐ Never forget your cell phone in your vehicle—the heat could shorten the life of electronic devices, damage batteries and melt some plastic components.

Similarly, do not store your phone in cold areas because when the phone warms up to its normal temperature, moisture can form inside it, which could damage the electronic circuit boards.


☐ Never attempt to open the phone yourself, as non-expert handling of the device may damage it.

☐ If you wish to clean your phone, do not use harsh chemicals, cleaning solvents, or strong detergents. Use just a soft moist cloth.

☐ A new battery usually lasts for two years, provided you use it the right way. Never recharge a battery unnecessarily—this reduces the charge cycle. Always make sure you use the specified charger, else battery performance could be affected.

☐ Where temperature and humidity levels are high, your phone may stop functioning in extreme cases. If this happens, do not open the phone—take it to an authorised service centre.

Safety Tips

 ☐ Never use your phone while driving. It may not be a punishable offence in many places, but you could cause an accident. As an alternative, you could use one of the many handsfree accessories available today, but be warned that using these while driving could also be dangerous.

☐ Avoid taking a call while crossing the road, as your attention could be diverted—stand on the side if you must take a call.


☐ Always buy a cell phone that's SAR-approved. This ensures that the radiation emitted is minimal. ☒



Handsfree adapters make it safer to use your phone when you're driving


Look for zinc-air batteries, which can power your phone for really long

Support And Service

 What happens when your phone breaks down—does the warranty cover all the critical parts such as the circuit board, screen, software installation and firmware? Check before you buy.

that suits your requirements and style.


Memory

 If your phone supports memory expansion, you can go in for a compatible memory card to expand the available memory. This is useful for phones that do not have a lot of internal memory but offer features like an integrated camera, video recording, MP3 playback, etc. There are a variety of memory cards supported by different brands and product models.

Ranging from Memory Stick Duo to MultiMediaCard (MMC), and available in varying capacities, you need to check, before you buy, the

Mobile Accessories

Protect The Screen

 Even if you do not get a cover, you may be able to find a screen protector for your phone display. Since the display is one of the most expensive and fragile parts of your phone, it is important to protect it from scratches and other types of damage.

GSMarena.com

Your one-stop guide to all the dope on cell phones

Aditya Kuber

Cell phones are an integral part of our lives today, and new ones hit the market almost everyday. Given the wide range of these new models available, you could go crazy looking at every manufacturer's individual Web site for new models.

Where do you go for the low down on the latest? GSMarena.com is perhaps one of the most comprehensive sites, though it caters more to the GSM-based models than CDMA. For an Indian enthusiast, that shouldn't be a problem!

What's New?

One of the most-asked questions regarding cell phones is, "Which is the latest model?" More often than not, GSMarena will be the site to break the news on the newest or upcoming model from a manufacturer. Navigation in this regard has been eased with a list of manufacturers on the left instead of the usual menu you would find on such a site. The focus is clear.

News is in abundance and makes you wonder who's really buying all these phones that are launched daily. The GSMarena team also visits various trade shows, and highlights new developments in the cell phone arena in detail—often missed by the more general sites. News is often given in detail, and also with links, in case they have not covered the event themselves. It is, nonetheless, reliable.

GSMarena also lists phones by manufacturers, which we in India haven't even heard of. In fact, it



GSMarena.com—your comprehensive guide to cell phones

opens up a world of new phones, and tells us that there are choices beyond the obvious ones we make.

Features

News, Ringtones, Forums, Reviews, Logos... the works! GSMarena also has an active forum.

There are discussions on which phone is the best, to discussions on individual brands and their loyalists do all they can to defend! "Flame or get flamed" is the objective, if you may, for the general discussion. You be the judge on what the more specific discussions might be like!

While the site is based in the UK, there are users from all over the world accessing it, and you can even find a fair number of Indian users registered with the site. The only problem is that you may not be able to buy all the products being sold by advertisers or visitors to the site. One point to note, though, is that the site is selling nothing. But some of the links you would find here are truly awesome.

Another interesting tool that has recently been added is the Phone Finder that lets you search a specific model without having to sift through endless pages of cell phone models.

Search criteria include model name, brand, network, availability (if it's upcoming or discontinued), operating system (Symbian or older), weight, form factor (such as flip top, candy bar), antenna, display, camera,

WAP, and so on. The advantages of the exhaustive form you have to fill up are that if you have an old phone, you could find it and check for details you didn't know.

The reviews are exhaustive and rate almost all features in addition to offering a comparison to other similar models. Not all reviews, though, are created inhouse. Some of them are sourced from associates located in various parts of Europe.

How Is It Different?

Yes, there are tons of other sites that do the same thing but not with so much pizzazz or style. GSMarena has by far the best design (we don't quite like the colour, though) and is the easiest of the lot to navigate. Just go to phonearena.com and you'll know the difference. Most importantly, though, they have big photos of all the phones they list—



Get detailed and reliable news on the latest cell phones launched worldwide

even the upcoming models—and this makes it a treat to check out phones here. At least, it gives you an idea what the new model would look like and whether you are interested or not!

If you use a GSM phone and change your handset at the drop of a hat, this is a site you must bookmark. Before you head over to buy the latest, it would be worth noting that they list only sellers in the UK. So what... tell your 'favourite' uncle or aunt to get it for you! ■

aditya_kuber@thinkdigit.com



Check features, prices and users' opinions on cell phones

Contour Design's Roller Mouse

Contour Design's RollerMouse works in conjunction with a keyboard and comes with a 'roller bar' that lets you to move the cursor around and click on icons. It acts as a base for your keyboard, and the roller bar and buttons fall within easy reach of your thumbs.

It has three buttons and one scroll wheel; the roller bar doubles up as a left click. You can set the sensitivity of the click by increasing the tension via a knob at the base.

To attach the RollerMouse, you need one USB port. Drivers are not needed for PCs with Windows ME and later versions. It costs \$189 (approx Rs 8,127) and can be bought online.

Company **Contourdesign**
Price **Rs \$189 (Approx Rs 8,127)**
Phone **033-22207961**
E-mail **info@contourdesign.com**
Web site **www.contourdesign.com**

Rating 



SecuriKey Professional Edition

Lock Up That Computer!

SecuriKey is a hardware/software PC security solution. If the data on your system is too important to be protected by a mere password, you may get SecuriKey to add another layer of security to your system.

SecuriKey works like a hardware key, which, if not plugged into the system, will restrict anyone from gaining access to your PC (or Mac). The package comes with two USB-based hardware keys, where one is an original while the other is a replacement—just in case! It also provides an option to use the second key to validate another user, in case the system is shared between two users. However, in such a case, the second key will not function as a spare key to the first one.

Installation is a complete breeze, but unlike other USB devices, the installation has to start first, and then, during the course of installation, the key has to be plugged in.

Company **J. S. Equipment**
Price **Rs 9,625**
Phone **022-23810713**
E-mail **jse@vsnl.com**
Web site **www.securikey.com**

Rating 



New & Notable

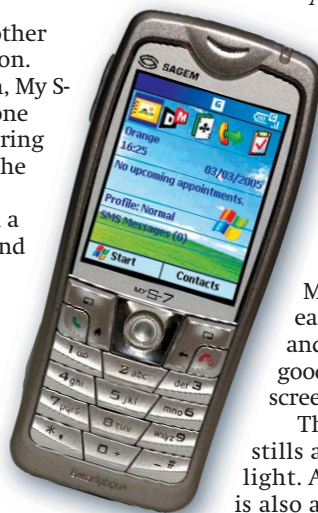
Sagem My S-7

Lacks Nothing... Except Bluetooth

The 'My S-7' from Sagem looks just like any other standard camera phone until you switch it on. Running Windows Mobile 2003 Second Edition, My S-7 is a decent blend of the usability of a cell phone with the functionality of a smartphone. Measuring 49.5 x 20.8 x 109.8 mm and weighing 120 gm, the Tri-band GSM/GPRS device is definitely not the lightest, but is certainly pocketable! Encased in a metallic grey casing, the look is business-like and the build quality, good.

Apart from the standard 12-key numeric pad, two soft keys and the standard 'Call' and 'End' keys, the front fascia sports a home and a back key, with a five-way joystick. The 2.2-inch transreflective LCD displays 65K colours with a resolution of 176 x 220. The other controls include a volume key along with a rubber-covered memory card slot on the left side and the Infrared port on the top next to the headphone connector, again covered by rubber.

Powered by an Intel PXA 262 200 MHz processor, My S-7 has 32 MB of RAM, the same amount of ROM, 15 MB of which is available to the user. You can add more memory through the SD/MMC card slot. It has infrared, but sadly no Bluetooth. It can be synchronised with a PC using the bundled ActiveSync cradle and USB cord. Installed applications include Internet Explorer, MSN Messenger, Photo ID, Pocket MSN, Tasks, Video Player and Windows Media Player.



As far as usability is concerned, the keypad is simple to use, thanks to the fairly large keys coupled with a slanting shape that offers more depth to click.

The joystick is also fairly large and smooth—one of the most comfortable ones we have used. However, we did have issues with the joystick, and ended up clicking in one of the four directions when we actually wanted to click the centre.

The menu response is speedy and the 200 MHz processor handles most applications with ease. We installed a demo of the game *Sky Force*, and it played nicely, with no jerks. Voice clarity is good, even in areas with low network strength. The screen is vibrant but is a problem to read in daylight.

The VGA camera is pretty decent for daylight stills and video, but outputs grainy results in low light. Audio output for ringtones and MP3 playback is also acceptable, though not very loud. The battery lasts about three to four days with standard usage.

At close to 20K, the Sagem My S-7 offers a good combination of features, usability and performance. Now, if only it had Bluetooth...

Company **Cenzer Industries Ltd**
Price **Rs 18,500**
Phone **022-26858594**
E-mail **mktg@sagemindia.com**
Web site **www.sagemindia.com**

Rating 

Photographers Rejoice!

Transcend, famed for its high-performance storage devices, has introduced the Photobank 20 GB Portable Photo Storage drive. This device is a portable, palm-sized hard drive and a multi-card reader for fast and easy photo/file transfer and storage on the go.

It integrates a 20 GB 1.8" hard drive and a memory card reader compatible with different formats including CF Type I and II, MicroDrive, SM, SD, miniSD (with SD adapter), MMC, RS-MMC (with MMC adapter), MS, MS Pro, MS Duo (with MS adapter), MS PRO Duo (with MS adapter).

It features a B&W, blue backlit LCD that indicates the basic functions of copying, deleting, formatting and displaying information. It connects to a PC, laptop or Mac via the USB 2.0 cable provided, allowing speeds as high as 480 Mbps. The rechargeable Li-Ion battery lasts for nearly three hours on a full charge, but takes four hours to fully charge!

The Transcend Photobank is a blessing that allows professional photographers to backup their memory cards. Business people can use it as a portable hard drive to transfer data between their home PC and laptop. When con-



nected to a computer, it shows up as a removable hard drive with various memory card slots. It supports the FAT12/16/32 file systems.

On the visual appeal front, the Photobank doesn't really score. The buttons feel tacky, are sometimes unresponsive, and generally not very comfortable. It posted a drive index of 16 MB/s in the SiSoft Sandra 2005 SR1 benchmark. In the data transfer test, 1 GB of assorted files could be copied from the Photobank in 57 seconds, while copying the same files to the Photobank took 119 seconds. But at 285 gm, it is very light and can be easily carried around in the protective leather pouch provided.

Unlike its more costly sibling with the TFT LCD and MP3 playback, the Photobank 20 GB is a no-frills but useful device. At Rs 18,000, it's somewhat expensive... but if you are a photographer, you will find the price is justified.

Company **Mediaman Infotech Pvt Ltd**
Price **Rs 18,000**
Phone **022-23828100**
E-mail **sales@mediamangroup.com**
Web site **www.transcendusa.com**

Rating 

Antec Super LANBOY

Calling All Gamers

Antec, one of the premier brands in PC cases and power supplies, has launched a new case aimed at gamers christened Super LANBOY, the successor of the older LANBOY case. The Super LANBOY sports an anodised aluminium finish and looks classy—similar to the new Apple G5 machines.

The front bezel has a swivel door that covers the optical drive bays. Right below are two USB ports and jacks for sound. A blue LED-lit 120 mm fan covered with a smoky plastic rail adds a bit of touch to the otherwise bland front. Antec has made good use of the unused space near the floppy drive bays by integrating a small toolbox that holds a foldable screwdriver, among other things.

Inside, there are four hard drives, three optical drives and two floppy drive sized devices. The hard disk bays are aligned facing the side panels, making installation easy. Also, the drives have to be mounted on a drive rail. On the rear, is a noiseless, but efficient 120 mm fan.

The side panels have a cutaway acrylic window. Antec has optional accessories such as a sound sensitive blue LED panel (Rs 1,450).

Further, an ultraviolet light (Rs1,550) can brighten up the surroundings.

The Super LANBOY, though, comes at a super price of Rs 5,500—just the price of the cabinet. The power supply and accessories have to be bought separately.



Company **Cyber Space Abacus Pvt Ltd**
Price **Rs 5,500**
Phone **044-4464468**
E-mail **shunmugavel@theitdepot.com**
Web site **www.antecindia.com**

Rating 

Looking for more information on any of the products featured here?

Please write to products@thinkdigit.com. The *Digit* Test Centre will be delighted to respond to your queries.

Arihant Flexi Keypad

Ergonomics and the tactile feel of a keyboard are the two most important factors that differentiate the good from the bad.

The Arihant Flexi keyboard appears cool—it can twist, turn, fold, and can also be washed! It's flat and can give you a feeling of typing on the table. This will make it difficult to use, initially. The difficulty will increase when two or three keys will be used in combination, say, [Ctrl+G] or [Alt+F]. The absence of a slope puts more pressure on the palm and fingers—especially the index finger.

Although its rubber surface offers a good grip, it's not soothing for your fingertips. Two major improvements are needed—combining the two separate spacebar buttons and enlarging the backspace button.

Indicator lights for 'Num Scroll' and 'Caps Lock' are arranged at the extreme right under a big black box that looks more like a design anomaly. Available in black, with no hot keys, the keyboard is great for touch typists. The absence of audible feedback and slope are the main hindrances for new users, but those disappear once you get used to it.



Company **Arihant Computers Ltd**
Price **Rs 900**
Phone **022-23826357**
E-mail **video-tch@yahoo.com**
Web site **www.ozaki.us**

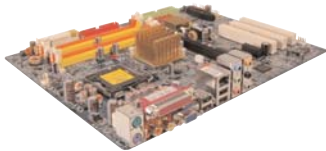
Rating 

Intel Motherboards

Gigabyte GA-8I915G Duo

- ⊕ Excellent Performance at an affordable price

Contact Digi Giga System Ltd.
Phone 022-26526696
E-mail sales@digigiga.co.in
Price Rs 5,500



Gigabyte GA-8I915G-MF

- ⊕ Very affordable
- ⊖ Average performer

Contact Digi Giga System Ltd
Phone 022-26526696
E-mail sales@digigiga.co.in
Price Rs 5,100



Portable Hard Drives

WD-Media Centre 250GB

- ⊕ Very low cost per MB
- ⊕ Memory card reader slots

Contact Western Digital
Phone 022-25851085
E-mail ajay.kapure@wdc.com
Price Rs 15,999

Freecom FDH-2 Pro 80 GB

- ⊕ Extremely compact and bundled carry case

Contact J S Equipments
Phone 022-23810713
E-mail jse@vsnl.com
Price Rs 15,500



Projectors

Acer PD11

- ⊕ High 1600 lumens brightness support
- ⊕ Big 330-Inch diagonal image size capability
- ⊕ Picture in Picture mode

Contact Acer India Pvt Ltd
Phone 080 25219520
E-mail rajesh.aiyar@acer.co.in
Price Rs 62,999



Cell Phones

Sony-Ericsson K700i

- ⊕ Extensive feature set, includes camera, MP3, FM radio etc.
- ⊕ Fast processor

Contact Sony Ericsson
Phone 0124-2560808
E-mail dhiraj.soni@sonyericsson.com
Price Rs 17,500

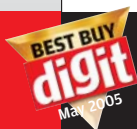
CRT Monitors (17-inch)

Acer AC715

- ⊕ High resolution of 1600x1200@75Hz
 - ⊕ Good finer details reproduction
- Contact Acer India Pvt.Ltd.
Phone 080-5219520
E-mail rajesh.aiyar@acer.co.in
Price Rs 6,995

Viewsonic E71f

- ⊕ Aesthetically good looking
 - ⊕ Good geometry reproduction
- Contact Roop Technology Pvt. Ltd.
Phone 022-26680022
E-mail roop@vsnl.com
Price Rs 7,500



The A-List

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

AMD Motherboards

ASUS K8N-E Deluxe

- ⊕ Excellent performance and great features
- ⊖ Lacks PCI-Express

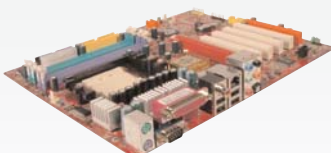
Contact ASUSTeK Computer Inc
Phone 022-56290785
E-mail info_india@asus.com.tw
Price Rs 7,850



MSI K8N Neo Platinum (Gold)

- ⊕ Excellent performance and good features
- ⊖ Lacks PCI-Express

Contact Cyberstar
Phone 0-9323809599
E-mail navin@cyberstarindia.com
Price Rs 7,250



PDA Phones

Nokia 9500 Communicator

- ⊕ Full QWERTY keyboard
- ⊖ Slightly bulky

Contact Company: Nokia India Ltd
Phone 011-22677900
E-mail jay.bakshi@nokia.com
Price 39,359



02 XDA II Mini

- ⊕ Small, thin and pocketable
- ⊖ One-handed operation not possible

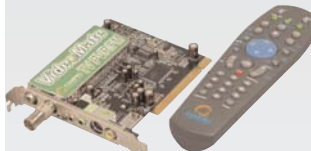
Contact Creative e-biz
Phone 022-23828100
E-mail creative@goldkist.net
Price Rs 32,888

Internal TV Tuner cards

Compro VideoMate PVR/FM

- ⊕ Exceptionally clear TV reception quality, low price, FM radio, good PVR software

Contact Mediatech India
Phone 022-26361111
E-mail sales@mediatechindia.com
Price Rs 1,995



Mercury TV Tuner Card

- ⊕ Good TV reception quality, FM radio, low price
- ⊖ Basic PVR software

Contact Kobian India Ltd
Phone 022-23020767/0774
E-mail mumbai@kobian.com
Price Rs 1,995



CRT Monitors (19-inch)

Samsung SyncMaster 997DF

- ⊕ Good colour reproduction
 - ⊕ Compact in size
- Contact Samsung Electronics India
Phone 011-51511234
E-mail marketing@samsungindia.com
Price Rs 14,900



Samsung SyncMaster 957MB

- ⊕ Brightness modes for different viewing environment
- ⊕ Good colour reproduction

Contact Samsung Electronics India
Phone 011-51511234
E-mail marketing@samsungindia.com
Price Rs 16,500

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 9,999

CMV CT-529A

- ⊕ Good colour reproduction
- ⊕ High contrast ratio

Contact Cee Vision Technologies Pvt.Ltd
Phone 022-26733353
E-mail chemoplastmumbai@vsnl.net
Price Rs 12,000

**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

**HP Deskjet 3745**

- ⊕ Fast print outs, excellent price
- ⊖ Below par photo printing

Contact Hewlett Packard India Ltd.
Phone 0124 2566 111
E-mail www.hp.com
Price Rs 2,999

Photo Inkjet MFDs**HP PSC 2608**

- ⊕ Inexpensive, excellent and fast text and photo printing
- ⊖ None

Contact Hewlett Packard India Ltd.
Phone 0124-2566 111
Website www.hp.com
Price Rs 14,999

Office Inkjet MFDs**Lexmark X7170**

- ⊕ Full featured MFD, fast printing, copying speeds. Decent quality photo prints
- ⊖ No memory card reader, B&W LCD screen

Contact Lexmark India Ltd.
Phone 022-2605 7755
Website www.lexmark.com
Price Rs 14,999

**Laptops****ACI Emerald C2**

- ⊕ Inbuilt Web camera
 - ⊕ Affordable price
- Contact Allied Computer International
Phone 022-56943260
E-mail hirji@aci-asia.com
Price Rs 44,999
Website www.aci-asia.com

**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 63,000

LCD Monitors (17-inch)**Acer AL714sm**

- ⊕ Light weight
 - ⊕ Good gray scale reproduction
- Contact Acer India Pvt. Ltd
Phone : 080- 5219520-23
E-mail Rajesh_Aiyar@acer.co.in
Price Rs 14,999

**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 8,495

**5.1 Speakers****Artis X10 Mini**

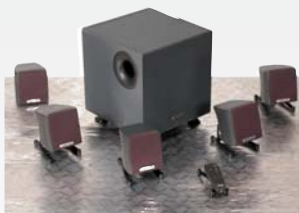
- ⊕ Compact, sturdy, clear sound
- ⊖ Slightly weak bass

Contact Kunhar Peripherals Pvt. Ltd
Phone 022 56345758
E-mail salesbom@kunhar.com
Price Rs 17,000

Creative Megaworks 5.1 550 THX

- ⊕ Excellent bass, easy setup
- ⊖ Satellite speakers marginally low on clarity

Contact Creative Technology
Phone 98203 57718
E-mail india_getcreative@ctl.creative.com
Price : Rs 20,490

**Fujitsu S2020**

- ⊕ Hot swappable combo drive
- ⊕ Good graphic 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

**CMV CT-712A**

- ⊕ High luminancet
 - ⊕ Good coloured text reproduction
- Contact Cee Vision Technologies Pvt.Ltd
Phone : 022-26733353
E-mail chemoplastmumbai@vsnl.net
Price Rs 17,000

Canon Pixma iP 4000

- ⊕ Fast, Excellent photo and text printing
- ⊖ No LCD

Contact Canon India Ltd.
Phone 0124-5160000
Web site www.canon.co.in
Price Rs 10,995

Zenith Presidio Vu

- ⊕ Good battery life
- ⊕ InbBuilt Web cam and SD/MMC card reader support
- ⊖ No recovery CD provided

Contact Zenith Computers Ltd
Phone 022-28377300
E-mail kalpak_bhattacha@zenith-india.com
Price Rs 70,000

The mWallet:

Pay over the air!

Say goodbye to credit cards, ATM cards and passwords.
Your mobile phone can now double up as your wallet!



[2] Data Transfer: Bluetooth, IR, SMS

Users need to point the mWallet-enabled phone or PDA at a Point of Sale (POS) machine, and click on the relevant tab. Alternatively, you can send an SMS to your bank to authenticate your password and user ID.

In the case of Standard Chartered's OneWallet service, the POS machines (which swipe credit cards) are fitted with an infrared (IR) adapter. The adapter converts the IR beam from the mobile, to a series of magnetic pulses that replicate the swipe of the card through the slot. Once your account has been authenticated, the transaction is complete and an invoice will be printed.

Shopaholics need not worry about paying by cash or credit card. You can now use your smartphones, PDAs or Tablet PCs in place of your credit card. Standard Chartered's OneWallet software, for example, can be installed on any J2ME or smartphone. Create a Virtual Wallet to store virtual debit or credit cards, ID Cards, tickets and other info.

[1] Authenticate Your mWallet Account

Once the customer installs the mobile wallet software on his phone or PDA, he receives a code and password from the bank. The mWallet software is authenticated by the bank's server via GPRS, which allots a private digital key to the client's application. The mobile wallet is now ready to use.





Forgot Your ATM card?

Use your mobile wallet at the ATM to validate account access. Step into the ATM centre, and point your mobile phone or PDA at the ATM. A message is then sent to the bank's central server to authenticate your mWallet application. Once your request has been authenticated, the transaction can be completed.

How It Works: Local And Remote Services

Your mobile wallet can be local (using the software installed on your mobile phone) or remote (the service is dependent on the payment provider). Remote wallets require an "always on" connection with the server, and user data needs to be centralised. The server can be operated by the service provider or financial institution.

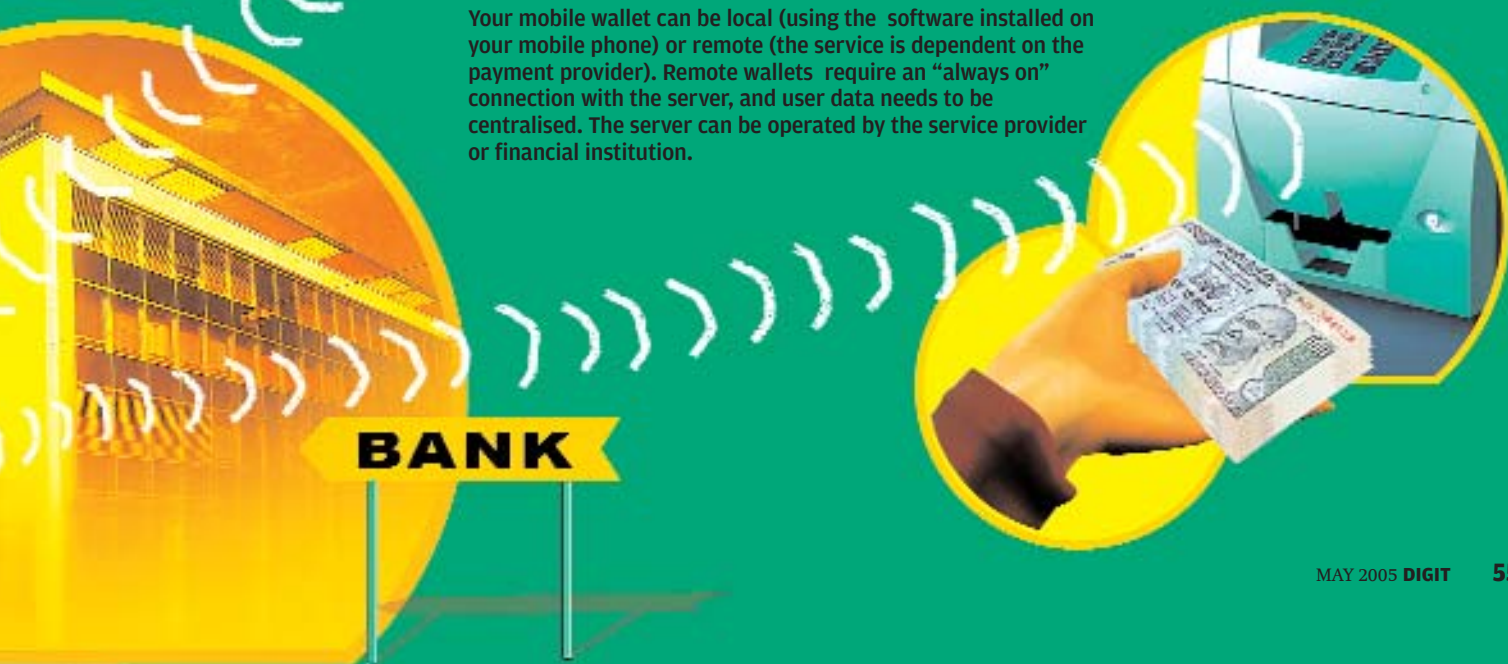




Illustration: Atul Deshmukh

Work Easier

The MS Office suite offers the option of creating templates for your frequently-used document formats to make your work easy

Aditya Kuber

Word, PowerPoint and Excel are some of the most commonly used programs in our day-to-day work. But we often struggle with formatting the files we create. There's an easy way of having a ready format for your documents, which we present here.

All three programs offer the facility to create templates that can be opened and filled up like a form, thereby taking care of your formatting worries. These programs also come

loaded with templates that can be used if they suit your needs. You could, in fact, continue to use them, unless you need a greater degree of customisation in every document you create.

MS Word

We use Word for typing out reports and creating letters, and, if you are using MS Outlook, it could even be your default e-mail editor. Here's how you can create a template for each of these.

If you send out a lot of letters on a daily basis, and if they must be in a particular format, you can create a template that caters to this. To do this, open Word and create a blank document. Type out a sample letter with the various attributes the way you want them, including fonts, font sizes, spacing and paragraph setting, and even things like your company logo (this could be placed in the header space). You can also make good use of the footer space provided and include Date, Time and page number details.

What makes all this better is the fact that all the fields in the header or footer spaces can be filled up using Auto text, or just at the click of a button.

The major advantage is that such a format maintains uniformity and lets the reader get comfortable with your format. What's even better is that you no longer have to spend time re-formatting files created by others to maintain this uniformity. (Refer to Diagram 1 to know what you can template)

MS Excel

Excel is a multi-purpose application. You can use it for many things besides just spreadsheets. The various possibilities, including filtering columns, locking views

and sorting information, make this a powerful tool for a variety of uses, from creating tables to maintaining a monthly balance sheet.

In Excel 2002, also known as Excel XP, the pre-loaded templates include a loan amortisation statement, a balance sheet, and an expense sheet, among others.

But you can create your own template if you want to. Say you want to keep track of employees' attendance and the time they spend in office daily.

It's just a simple sheet you need to create. (Refer to Diagram 2 to know more)

Diagram 1

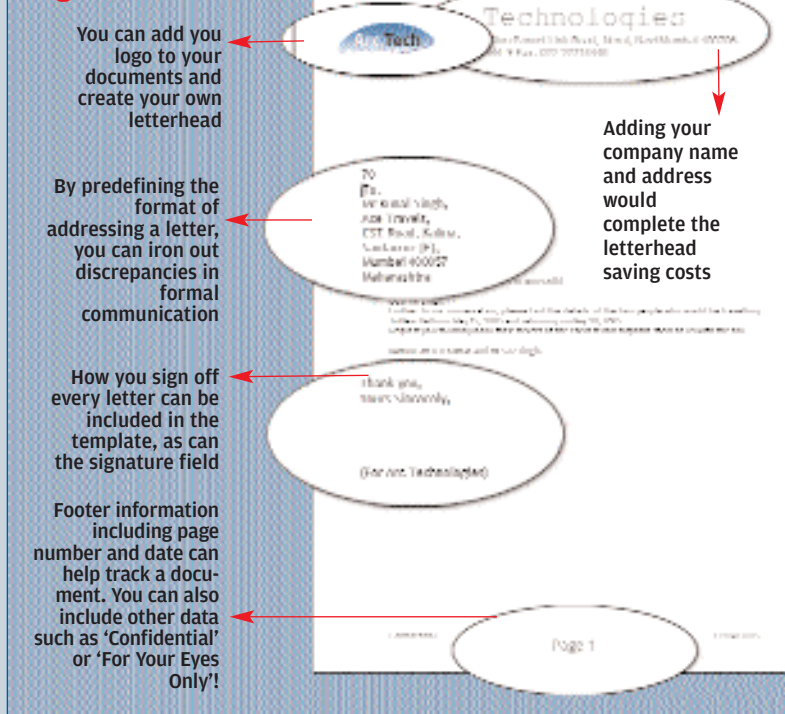


Diagram 2

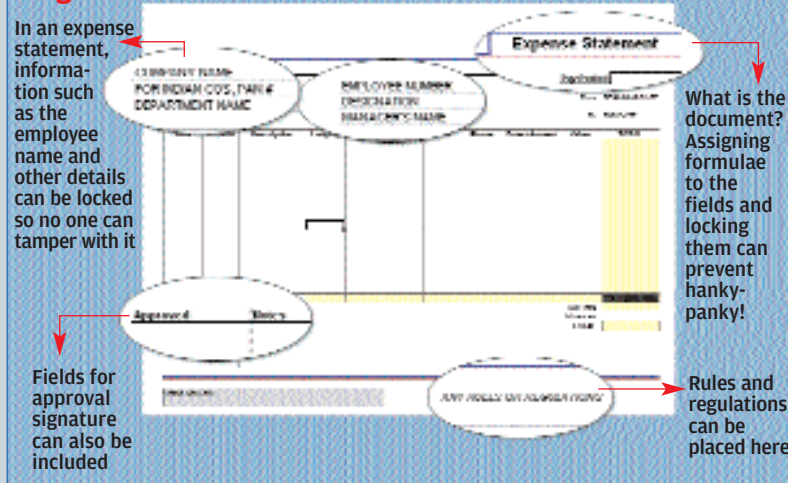
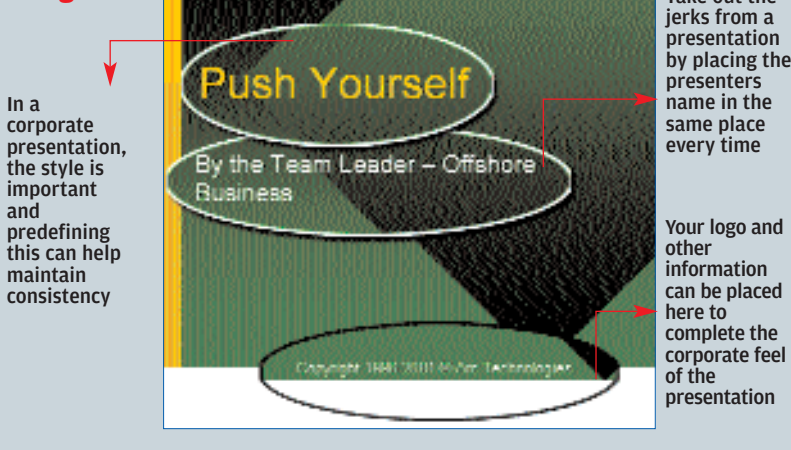


Diagram 3



MS PowerPoint

We all make presentations and have some fixed elements in every presentation, such as your company name or logo, and would like to maintain these elements for every presentation you make.

You could do this using the Auto Content Wizard, and PowerPoint will generate a complete presentation document. There are various types of presentations to choose from as well.

You could then choose the header or footer space to add your logo (and any other information you want), and save this as a master slide. This slide can then be used throughout the presentation. (Refer to Diagram 3 for more info)

Additionally, you could also change the style of the text that appears across a presentation by doing the following:

Make sure no objects are selected. From the 'Format' menu, select 'Font'. Make all the changes that you want and click 'OK'.

From that point on, new text will be created in the style you just defined.

To set the formatting for the title or slide body objects, go to the 'Slide Master' and format these objects on the master.

Why Templatise?

While some of this stuff sounds rather basic, the reason behind emphasising this is the cost saving it could bring you and the identity you could create.

Take for example the template created in MS Word. If you could have a logo and your address placed in every printout you take, you would not need to make letterheads for your company. All employees could print out their letters on ordinary paper.

By creating a universal template in MS PowerPoint, your presentations could have uniformity and consistency of style. Clients can come to expect this from you and it also displays a certain level of discipline.

More importantly, though, you could templatise spreadsheets for purposes such as claiming expenses—a company balance sheet with locked formulas can ensure that there is no misappropriation. All the employee has to do, is fill in the requisite fields and take a print. The advantages are obvious.

Programs such as Word and PowerPoint offer an even greater level of customisation that can help you take out the hassles of worrying about how every document is going out.

One thing you need to remember in all this, though, is to save your file as a template and not as a file. All the others need to do is open this template.

You also don't need to worry about anyone overwriting your template file because the program will automatically open the 'Save As' dialog box whenever someone hits [Ctrl] + [S].

It's a good idea to create a variety of templates for various requirements that could save everyone time and a lot of headache! ■

aditya_kuber@thinkdigit.com

Does this make good sense?

How long does this process take:

"They approve the sites real quick vis-à-vis other advertising programmes, considering the large number of applications they get," says Ganesh Siddamali, who runs www.rupya.com, a site that focuses on the Indian stock market including daily performance updates. Rupya.com was approved within a day. However, in some cases, the approval may take as long as seven days.

Step 2: Once your site is approved, you are mailed a link directing you to your account. You can login and customise your ads (pick the colour, placement, and number of cells per ad). Copy the HTML code that's generated and paste it onto your site or template, and sit back... but remember the caveat 'a little bit of effort'.

Add monetary value to your online thoughts! Get money sense... get Google AdSense

Mithun Kidambi

Let's have a small Q & A session. There are three alternatives to pick from. The question is the obvious; which one of these would you choose?

- a) You get a lot of money, but work very hard for it.
- b) You get a decent amount of money with a little bit of effort.
- c) You pluck money off the trees.

The answer is a practical no-brainer. Option [c] is what we all wish could happen. But it seems implausible, as long as the incumbent divine force decides otherwise. Now, if you are working very hard for the money in option [a], chances are you won't get enough time to spend it. That leaves us with option [b], the one option practically everyone chooses.

A universal fact, this has been exploited by various Internet companies. But the big daddy of all new forms of simple innovation is Google. And they have put the above fact into the heart of their AdSense programme.



What Is AdSense?

Small time Web publishers never had it so good.

With falling bandwidth and Web space prices, and now, a free classifieds tool! If you have a small website or a blog, which a clutch of people visit regularly, then you could make some money out of it.

After we are clear with what this AdSense is all about we shall jump to next obvious question—how much money can I make, followed by how much more?

A few details on how to start the programme can be roughly divided into two-steps:

Step 1: You register with Google for the programme. Give them the URL of the site where you want the ads... and wait.

What happens behind the scenes: Once you do this, Google's bots pay you a visit. Reminds you of the *Matrix*? Anyway, these guys crawl all over your site collecting relevant information. Once the information is evaluated, your site/blog is approved or rejected.

What are the criteria for approval: The approval/rejection is based on the site's content and quality. AdSense does not accept sites, which contain porn or promote the use of tobacco and drugs. If your site steers clear of these then it's likely that your application would be approved.



Money Matters

Now that you have the banner or footer or any of the other ad placements done how do you pull in the money? The process is really simple—click the ads to rake in the moolah and increase the page-views of your site.

How long does it take for the first cheque to come into your account? Google starts paying you once you have crossed the \$100 mark. According to Babychen Mathew, editor of www.dancewithshadows.com, a news and current affairs Web site, "It takes around four months for the first payment to come in. That's if you have a fairly decent number of visitors, say, around 10,000 a month." Others like Siddamali, whose site deals in Indian stock market news and figures at the top of a lot of searches, got their first payment within a month.



Trial And Error

Your site's content decides the type of ads that feature on them. All ads do not pay the same. The amount varies from as low as five cents per click, per ad, to as much as \$5 per click. The well paying ads are mostly tourism, pharmaceuticals and online

gambling. You can also play around with your content to attract specific advertisements.

Mathew agrees that it is possible to tweak your content to attract high revenue ads. "If you keep playing around with your content to get such ads, you can be chucked out of the programme. But once you are out, there's no coming back," cautions Mathew.

On a more rational note, it's unwise to make your content advertisement-centric. "You risk losing your readers," says Kiruba Shankar, blogger, who runs www.kiruba.com—one of the most widely-read blogs in India. "I once had an ad for Sri Lankan tourism on my site—it attracted a lot of clicks, which gave me a decent sum. However, if I keep displaying ads on Lankan Tourism alone, how many readers would I get?" asks Kiruba.



Mastering The Game

The wisest thing to do is to stay focused on the content of your site/blog. Chances are, if people are interested in the data you're offering, they may be inclined to click those relevant links, which is actually what the ads really are. While, you're unable to determine what kind of ads show up on your page, you can filter out the ads that you do not want, say, competitors' ads.

You can include the Google search on your page, which is a good value-add to your site. Now, if you are wondering whether using AdSense increases the number of hits, the answer is "No, it doesn't". The bot that searches your site for content to place the ads is different from the one that visits your site to rate it on the search. Google has made sure that using AdSense is not a criterion for turning up high on the search results.



The Ayes And Nays

A clean, transparent, non-intrusive advertising service that let's you earn some shekels without investing a cent. That's probably why we have the Internet, right? Well, there are no free lunches, but this one comes really close. All the same, don't expect to generate all your revenue by using affiliate advertising services. It's good to have AdSense as it's free, though a high number of page-views is just what the doctor ordered.

If you are a Web site owner or a prolific blogger, it makes sense to have AdSense on your site as a secondary source of revenue

AdSense is a good instrument to supplement the income from your site. But if your Web site is your prime source of revenue, then you must consider other advertising and/or marketing sources. Mathew adds, "AdSense can't be the only source of revenue. We are also part of the Amazon Associates programme, and sell ad space on our site directly to companies."

If you are the owner of a Web site or are a prolific blogger, it's sensible to have AdSense as a supplementary source of revenue. Even popular sites like Indiatimes and Sify use AdSense. Don't expect to start with a five-figure packet using AdSense—a couple of thousands every month is more realistic and achievable.



Competitors Any?

There are other affiliate advertising programmes such as the Amazon Associates and the Yahoo Overture Affiliates. Nevertheless, users claim that Google's AdSense pays far more than any of these—as much as 35 per cent more. It has fewer caveats, and is prompt with payments.

Amazon Associates claim that the Amazon brand ends up getting a lot of visibility but doesn't necessarily translate into revenue for the Associates. AdSense, on the other hand, places ads of third parties so the relevance increases. Yahoo's Overture programme needs your site to have a very high number of page-views to get an approval. This is a major deterrent for smaller sites and bloggers.

On the flipside, in other affiliate programmes, the parent company provides you with the contact info of the person, who was referred by you and made a sale. This helps you in making future sales. However, AdSense does not give you this information. Still, this is of mere academic interest to most AdSense users who are by and large, small Web site owners or bloggers.

As a medium that places relevant text ads on your Web page or blog, AdSense is fast becoming the *de facto* advertising and sales tool for small time Web publishers. With rumours of how people have made \$1000 a day by using AdSense, hundreds more are queuing up. Don't lag behind—get ready to make that extra buck. ■

mithun_kidambi@jasubhai.com

Sensible Dos And Don'ts

Dos

- ▣ Keep the content of your site updated and relevant.
- ▣ If you have a blog, use publicising tools to publicise you are a blog. More readers mean more click-through rates, which translates to more revenue.
- ▣ Play up certain parts of your content if you think it would attract high revenue ads.
- ▣ Add the Google search to your Web page. It adds flexibility to your site, and increases page views.

Don'ts

- ▣ Don't tweak your site just to attract high revenue ads. Too much tweaking will bring you under the Google scanner and could lead to an ouster from the programme. Remember, the story of the goose that laid golden eggs?
- ▣ Don't go overboard and clutter your entire page with ads. You'll lose out on visitors.
- ▣ Don't hire some one to sit and click the ads on your site. This attracts automatic disqualification from the programme.
- ▣ Don't keep clicking the ads on your own page, obviously!

Reports

Account Information

Settings

Performance • Payment History

Reduced channels. Read more [here](#).

Click **Display Report** to view statistics for the selected criteria.

By

1

2004

Jan

2

2004

Aggregate data

Channel data

Active channels:

Homepage

Car channel

Banner ads

Purple skyscrapers

Press the control or option key to select multiple channels.

Channel

Both

Display Report

January 6, 2004

Download CSV file

Impressions	Clicks	Clickthrough rate	Your Earnings
1,840	57	3.0%	\$15.10
1,687	76	4.5%	\$12.25
2,120	52	2.4%	\$14.12
1,761	80	4.5%	\$14.15
7,408	265	2.8%	\$55.62

A typical AdSense payment report. See the \$55 (approx Rs. 2,365) earnings figure!

Q&A

Your Questions, Our Answers

An Error Message Niggle

Q My computer configuration is as follows: an Intel Pentium 4 2.4 GHz processor, 128 MB of DDR RAM, a Samsung SP0401N 40 GB hard disk, and a Gigabyte 8LD533-C-P Titan Series motherboard. Each time I boot into Windows I get this message: "ccRegVfy.exe - unable to locate component: this application has failed to start because ccTrust.dll was not found. Re-installing the application may fix this problem."

I am not facing any problems as a result of this, but I want to get rid of the message. It began showing up after I uninstalled Norton AntiVirus 2003. I installed the software again but the message persists. What's up?

Kangkan Goswami

A This is happening because Norton AntiVirus has not been properly uninstalled. Uninstall it—delete all the folders that it created in the 'C:\Program Files' folder. Now, 'ccRegVfy.exe' is being called upon at startup, so go to Start > Run and type in 'msconfig'. Under the Startup tab, uncheck the entry for ccRegVfy.exe, and restart your machine. You should not see the error message again.

*.GBA?!

Q I have a file called '29 NES Games (PD).GBA'. What is this file, and what software is needed to open it?

Chetan Gupta

A A .GBA file is a Game Boy Advance ROM file, which is a dump of the original GameBoy console game cartridge. This file can be played using a tool known as a GameBoy emulator, which emulates the GameBoy console on a PC. Bear in mind that it is illegal to play the game on your computer if you do not possess the original cartridge for the game.



Illustration Harsho Mohan Chatteraj

Error Messages Again

Q I use Windows XP. While playing the *Digit* CD or surfing the Internet, I see a message on the screen. I have installed the latest versions of Flash and DirectX from the *Digit* CD, but I have the same problem. The message is as follows: "Your current security setting prohibits running ActiveX controls on this page; as a result, the page may not display correctly."

Jignesh S Paradava

A In the Control Panel, open 'Internet Options' and go to the 'Security' tab. Click 'Custom Level' and select 'Prompt' for everything under 'ActiveX controls and plug-ins'. Though this will solve your problem, there is ActiveX content on some Web sites that has the potential to harm your computer—so you will have to be extra careful while surfing the Internet with these settings.

More RAM, Please

Q One of my clients has a VIA chipset HIS Motherboard. The model is P4M266. The problem is, he wants to add an additional 512 MB of DDR RAM. Will it be OK for me to add an additional 512 MB of 266 MHz DDR RAM, parallel to the existing 256 MB?

Juzar

A You will definitely be able to install an additional 512 MB DDR memory module. Keep in mind, though, that the motherboard supports up to 2 GB of 200 MHz or 266 MHz DDR RAM only. We advise that you install a RAM stick of the same speed as the one already in place, in order to avoid any problems.

I Want Space, And I Want It Now!

Q I had a 40 GB HDD with four partitions of 9.75 GB each. I have two OSes, Windows XP and 98. While trying to install Linux Mandrake 8.2 on one of the free partitions, the installation failed, citing insufficient disk space, although I'd twice allotted 3 GB for this purpose. After that, Windows shows only 3.88 GB of space in that partition, which means I lost almost 6 GB! How do I get this space back?

Arindam Mookherji

A A 3 GB EXT2/3 file system partition was created by the Mandrake 8.2 installer during each of your two failed attempts to install it. The EXT2/3 file system is only accessible under Linux, and so the partitions thus created are not visible from within Windows.

However, using 'Disk Management' in Windows XP, you can format the EXT2/3 partition to a FAT32 or NTFS partition, which will be accessible from Windows. (Note that NTFS partitions will only be recognised by Windows XP, not 98.)

To access this utility, open the Control Panel, click 'Administrative Tools', then click

'Computer Management' and then 'Disk Management'. You'll see your partitions in graphical format. Right-click your partition, select 'Format', and you'll see the file system options available for the partition. Remember, you need to be logged in as an administrator to be able to do this.

An AntiVirus For All Occassions

Q I installed Windows 2000 Server, and then I tried to install Norton AntiVirus 2005, but could not. I then tried McAfee Virus Scan version 9.0 trial with the same results. I changed the OS to Windows 2003 Server Standard version. Even then, neither of the two AntiVirus software are getting installed. Can you suggest an AntiVirus from either Norton or McAfee?

If I purchase Norton System Works 2005, can it be installed on the above operating systems, and also on Windows 98 SE? I would like to to install a single AntiVirus software for all the above operating systems. Which AntiVirus should I purchase?

B R K Swamy

A Since you wish to install the same AntiVirus on different versions of Windows, you will have to use Symantec AntiVirus Corporate Edition. No other AntiVirus software runs on all the operating systems you mentioned.

Who Does This Computer Belong To?

Q On a branded system, when I right-click on 'My Computer', it shows a company name such as Compaq or Acer. I want to change this. How do I do this?

Mubin Nandavar

A If you are using Windows NT/2000/2003/XP, search for the file 'OEMInfo.ini' in the 'System32' folder in your Windows directory—for Windows 9x/ME, search in the 'System' folder in the Windows directory. Open the file using Notepad, and change the entry next to 'Manufacturer=XYZ company' to whatever you wish to see. Save

the file and you will see the change immediately.

Get XP to display your name in System Properties, instead of what your computer came with



Where Do I Find The Drivers?

Q My PC has an AMD K6-II processor on a SiS 530 motherboard and 192 (128 + 64) MB of SDRAM. The FCC ID of my sound card is LWHA411G7. I am not sure about the make of the card, though I was told at the time of purchase that it was a Yamaha sound card (from the FCC ID it seems like a Labway). I find the following etched on different parts on the card: "XG", "XWAVE", "Q5300A", and "9846". My problem is that the sound card is supported by Windows 98 and ME, but after installing Windows XP, the sound card driver—YMH 734—is not supported. I have downloaded several YMH 734 and also YMH 724 drivers said to be supported by Windows XP from sites such as driverguide.com, driverpit.com, and windrivers.com, but to no avail. What do I do?

Arindam Kaushik Sharma

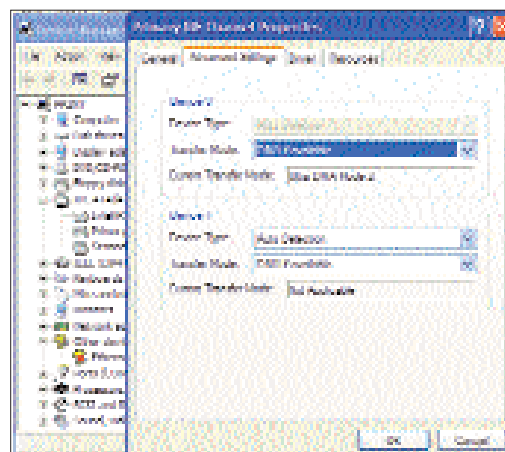
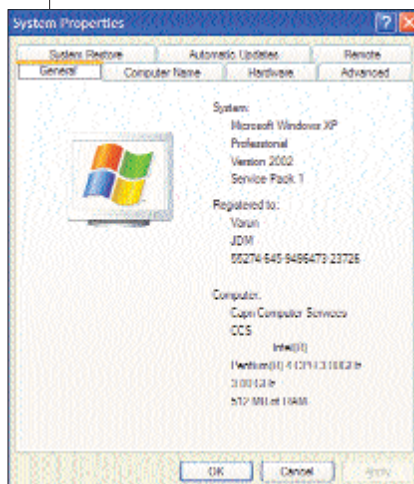
A The sound card you have is the Labway XWave QS3000A. This sound card is not supported under Windows XP. Though XP drivers used to be available from labway.com, Labway has stopped distributing the drivers. You will be able to download the drivers from <http://snipurl.com/dzfs>. You are required to register (for free) in order to download the drivers.

Gimme DMA

Q I have an AMD Athlon XP 2400+, an ASUS A7N8X-X, 256 MB of DDR333 RAM, and Windows XP Pro SP1. I use Alcohol 120% and Nero Express CD. My problem is that I can't write at maximum speed; if I try to, my writer takes about 10 to 15 minutes to write at a speed of 52x, as well to image a CD. I formatted my C: drive and reloaded XP.

At first, my device manager showed me that Direct Memory Access (DMA) was enabled, and my writer worked properly. But right now, the transfer mode is auto-detected as PIO. How can I change the transfer mode to DMA instead of PIO without formatting my C drive?

Debasis Dash



Make XP detect your drives as DMA-capable, if they are

Use Macromedia Captivate

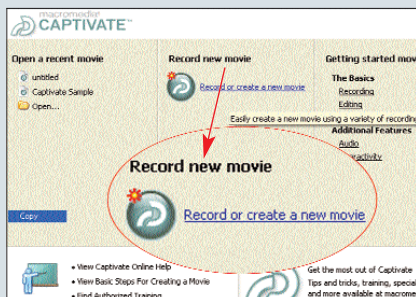
Captivate lets you capture screens and create movies of what's going on on the screen. It's the perfect way to teach someone how to do something on a computer

Macromedia Captivate enables you to create movies, complete with sound, to develop e-learning content. You can also use it to come up with short movies that teach how to do tasks such as backing up mail, configuring a network and so on.

Captivate is easy to use, complete with a detailed help menu. Here's how to go about creating a tutorial movie.

STEP 1

To create a new movie, you have the option of either starting from scratch or using a template. Here, we will not use a template, so start with 'Record or create a new movie'.



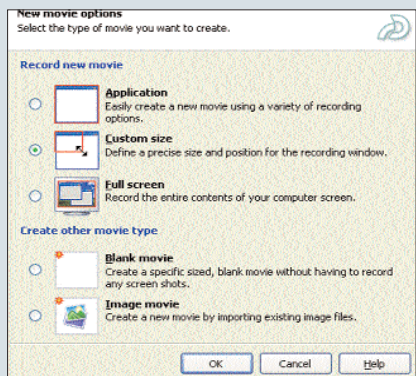
In the screen that comes up when you start Captivate, choose to start off a new movie

STEP 2

When you click 'Record or create new movie', you are presented with two options—'Record new movie' and 'Create other movie type'. Under 'Record new movie', select 'Custom size' and press OK.

STEP 3

In the window that opens, select the screen size for your movie. You have the option of selecting from preset modes, for instance, full screen.



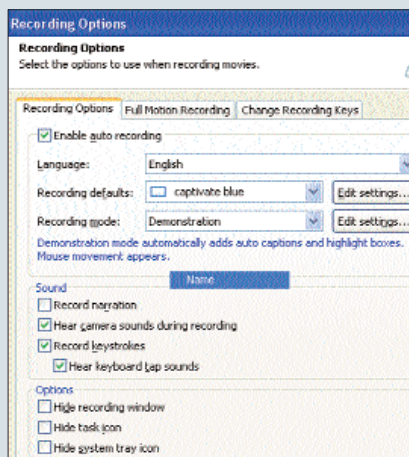
Choose the size of your movie. If you want, you can precisely define a custom size

STEP 4

Start up the application (or any window, for example, the 'Network Connections' window in XP) for which you intend to create the movie. This application or window will show up in a drop-down menu. From this menu, select the appropriate application.

STEP 5

Select 'Snap window to fit inside the red recording area'. This will fit the chosen application window in a red box of the size you chose in Step 2. This should give you an idea of how large your video will be.



Under 'Recording Options', there are three tabs with a comprehensive set of options

STEP 6

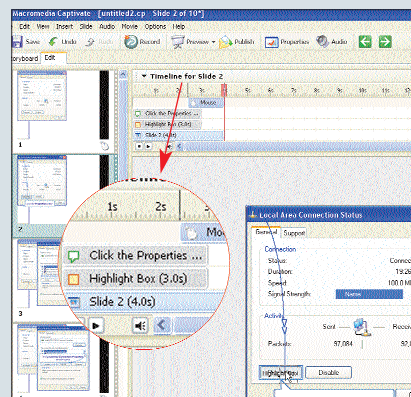
You can start recording right away, or else, click the 'Options' tab to set recording options. In the 'Recording Options' window, you can change such settings as language, custom recording options, enabling or disabling the 'camera' sound, recording of a narration, and so on.

STEP 7

Once you have completed tuning all the settings according to your script, it's time to hit the record button. However, be careful: whatever you click now, wherever you move your mouse, and so on, will be recorded. Go through your script thoroughly before actually starting to record.

STEP 8

Click the 'Record' button and go about performing tasks as mentioned in your script. Every time an action is performed, Captivate generates the sound of a camera shutter.

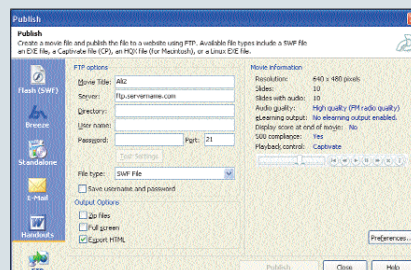


The Timeline gives you an exact idea of what happens at each moment of the video

STEP 9

Once the movie is recorded, it will be saved to a predefined location. The entire recorded 'reel' will be displayed for further editing in the main window. At this stage, you can delete slides that you feel don't fit. Moreover, you can change the timing by moving the 'Timeline' slider.

For this, you will have to go to the 'Edit' section: click on the 'Edit' tab beside the



Under 'Publish', you can choose from several saving options, and also upload to an FTP site

'Storyboard' tab in the main window. Here, you will be presented with the timeline of each recorded slide, which can be adjusted simply by sliding the red line.

STEP 10

Next, preview the edited movie for accuracy. To preview the movie, click the 'Preview' icon in the main toolbar and select 'Movie', or simply press F4. Publish the movie if everything is all right. To do this, click the 'Publish' icon beside the 'Preview' icon. This gives the option of publishing the recorded movie to HTML or SWF, or as an executable file for Windows, Linux or Macintosh, or to upload it to your FTP site.

Just WAV Doesn't Do It

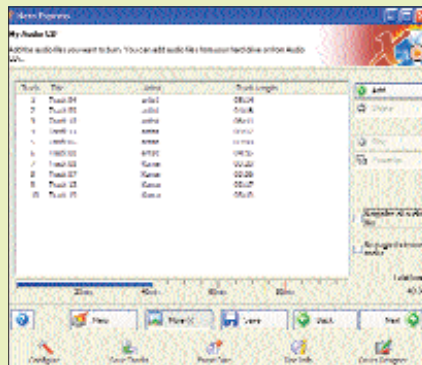
QUESTION
OF THE
MONTH

Q I bought a new Aiwa CD Player, model XP-V416C, EASS 10 sec, 1-bit DAC, CD-R/RW playback. It can play only Audio CDs. When I convert MP3 files to .wav using mp3 decoder software and burn them onto CD, the player doesn't play anything. But when I copy an audio CD, it plays. I have MP3 Work Shop 2.01 by Donal Riordan. Please tell me how to create an audio CD using an MP3 decoder and Nero Burning Rom 6 Express Edition.

Krishna Caitu

A An audio CD contains audio tracks in RAW form (which is a form of the wave file format), but if you notice, the files on an audio CD are .CDA, just a few KB in size. These files point to the location of the RAW audio tracks on the audio CD, while the tracks themselves are not visible.

You can create an audio CD using Nero Express. To do so, move your mouse over 'Music' in Nero, and click on



Compiling an audio CD using Nero Express

a burning speed of 8x for backward compatibility with older CD players, and click 'Burn'. The audio CD thus created will be playable on any audio CD player.

'Audio CD'. Click 'Add' in the next window, browse to the folder where you have stored your songs, select the songs to be added to your audio CD compilation, and then click 'Add'.

After you are done, click on 'Finished'. Now click 'Next', select

A To enable DMA, Go To My Computer > Properties > Device Manager, and click the 'Hardware' tab. There, expand 'IDE ATA/ATAPI Controllers'. You will find your hard disk and CD-ROM controllers listed under 'Primary IDE channel' and 'Secondary IDE Channel'. Double click 'Primary IDE Channel' and click the 'Advanced Settings' tab. Set the transfer modes to 'DMA if available' for both the Master and the Slave devices—these could be listed as 'Device 0' and 'Device 1'. Repeat the above steps for the Secondary IDE Channel. Once you change the settings, reboot and you are good to go!

DirectX Woes Yet Again

Q I recently installed Windows XP with SP2. I had DirectX 9.0b, but after installing XP with SP2, I am unable to install DirectX 9.0c. I even tried the redistributable version, which was given with the March issue of *Digit*.

Using the Everest diagnostic software, the OS shows up as Windows XP Professional (5.1, build 2600) Service Pack 2, v.2096 (2600.xpsp_sp2_rc1.040311-2315), while the DirectX version is DirectX 9.0b (4.09.0000.0903).

Karan Pratap Singh

A It's evident that you have Release Candidate 1 of Windows XP SP2 installed. Install the final version of SP2, which was supplied with the *Digit* September 2004 DVD. Alternatively, you could download it from the Microsoft Web site.

Where's The Colour?

Q I have an Athlon XP 1700 processor on a Gigabyte KT400 board, 512 MB of SDRAM, and an nVidia GeForce FX 5200 AGP card with 128 MB of RAM. The display card has a 4-pin S-Video out socket. I have a Sony combo drive, and also an LG 52X CD-Writer. I tried connecting my TV using an S-Video to RCA cable (S-Video out to the video-in of the TV). I adjusted the necessary configurations in

'Display Properties', and selected my TV as the secondary analogue clone display.

My problem is that the display on the TV monitor is Black and White. I tried to configure the TV display properties to the lowest resolution of 800 x 600, but am still unable to get the TV to display colour.

K Ramanathan

A Your problem is that your display card's TV output is conformant with a TV standard other than the one for which your TV is configured. There are three widely-used TV standards, PAL, NTSC and SECAM—PAL is the one used in India.

There are three solutions to your problem. The first and best is to install the latest version of the nVidia ForceWare drivers from the *Digit* CD/DVD. Your display card should now correctly detect your TV. Otherwise, you can download and install a utility called TV Tool from <http://snipurl.com/dzfa>. Using this, you will be able to change the TV standard of the TV-out signal of your display card. The third solution is that if your TV supports multiple standards, try changing the TV signal standard of your TV from PAL to NTSC.

Umm, I Deleted Some Folders...

Q I deleted the folders of some unwanted programs, and cannot remove them from the 'Add/Remove Programs' list. How do I do this?

Abhishek Kumar

A To remove entries from the 'Add/Remove Programs' list, use the registry editor. Be very careful when using it: one false move can render your PC unbootable. Click Start > Run, type in 'regedit.exe' and click OK. Go to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\CurrentVersion\Uninstall. Here you will find the various registry entries that correspond to the entries in the Add/Remove Programs list. Just delete the entries you don't want. ■



Get Help Now!

E-mail us your computing problems along with your contact details to sos@jasubhai.com, and we may 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!

Sound Solutions

Agent 001 embarks on a quest for fidelity and quality... of speakers!

If any of you ever happen to be at Jasubhai Digital Media, more often than not, you would be greeted with a warm smile unless you bump into some of the drones working at the Test Centre. Strike a conversation with any of them and within no time, jargon would be thrown at you; sure to make you feel 'inferior' and left out. Thanks to my understanding of technicalities and jargon, I am often spared, but not always!

Luckily for me, fate does present me with one of those rare moments, wherein I can land some punches to make my point clear, 'I am the Agent 001'. This month, fate offered me with such an opportunity.

Our guys in the Test Centre were conducting a speaker comparison and wanted to buy the best sound card available. Did someone say the best available? Well that's my hunting ground, isn't it? So it was decided that I would look out for the best available sound cards to drive those 7.1 speakers, which the guys could be testing very soon.

If I remember correctly, in the days of Pentium-II, sound cards were a rage, more so the SoundBlaster range from Creative. Though there were a few others, such as Yamaha and Aureal, it was Creative that sold like hot cakes.

Interestingly, things have since moved fast and there is barely a sound card market to speak of, thanks to the integrated revolution brought about by Intel's AC'97 standard that integrates a rudimentary sound solution in all motherboards.

Integrated solutions themselves have evolved from the stereo on-board solutions offered in the early stages to high-definition audio on the new 915 and 925 chipset based motherboards—good for casual everyday use. As for audiophiles, these integrated solutions hardly deliver. So let's tumble down the rabbit hole and see where it all leads to.

My first destination was a small shop on good old Lamington Road.

Imagine my shock when my very first inquiry turned out to be a dud. I was told that they don't stock sound cards any more but the 'next big shop' might just have one.

The Audigy 2 ZS conforms to nearly every standard and will make a difference when watching movies, playing games or just listening to music

So I moved on and found out that only Creative cards are available and are certainly worth the money. Here's a word of advice: Creative has stopped making the 'Vibra' range and if you do come across one, don't buy it; it is bound to be old stock.

I asked for a 'Live' series card and was presented with a 7.1 card. As far as I could remember, the 'Live' series was a 5.1 card. Soon enough, I received some more *gyan* and realised that the new 'Live' cards are 7.1 capable while 5.1 cards have been discontinued.

The new Live 7.1 card costs Rs 2k; not bad for a 7.1 card. Point to be noted: the newer card does not have a separate 'Digital Out' connection. The Mic/Line-In connector serves as Digital Out and you need a Digital I/O module to use it. This 7.1 card supports EAX and EAX Advance standard, so it's good for gaming too! Thanks to the lack of support for standards such as THX and Dolby, the Live 7.1 card was not suitable for the Digit Test Centre.

My sources inform me that there is a duplicate 'Live' card on sale too. Despite my best efforts, I couldn't get the shopkeepers to tell me how one can distinguish between the two. For now, as a thumb rule, if you happen to come across a 'Live' card for around Rs 1.4k, be warned that it's not the real one.

The next on my list was an Audigy series card and I was promptly offered an Audigy 2 Value card. This card does support Dolby Digital EX, EAX and 24-bit DVD audio. The Audigy Value card is available for approximately Rs 5.5k.

I had to ask for a better card and I was presented with the Audigy 2 ZS Platinum Pro—just the one I was looking for. This card supports THX, Dolby Digital, DTS ES 6.1, 24-bit DVD audio and EAX Advanced HD effects.

Moreover, the Audigy 2 ZS also conforms to nearly every standard and will make a difference when watching a movie, playing games or just listening to music. This card also supports ASIO 2.0, a standard for interfacing software on a PC to any audio hardware. The external I/O module comes in handy when connecting various instruments to your PC. Considering the needs of our Test Centre, I bought the Audigy 2 ZS Platinum Pro at a whopping Rs 14k.

Want more of Agent 001? Turn over to read his answers to your buying questions



Illustration Shyam Shriram

Apple, Compaq or IBM?

Q I need a laptop for high-end multimedia applications such as Autocad, CorelDraw, and a few other processor-intensive programs. I like the Apple PowerBook (15"), but my friends say that the Compaq B8000 series and IBM R series are equally good. I don't want the laptop to be too heavy, and my budget is Rs 1.1 lakh. Which one would you suggest?

Vinay Anand

001 I suggest you to go for a Windows-based system for the wide array of software available. As far as processing power goes, Apple's PowerBook and Windows-based laptops are pretty much neck-to-neck. However, when it comes to application support, Mac OS isn't quite popular with software developers and hence, very few professional applications are available for Mac OSes. The R-series from IBM is good.

Also, opt for a Centrino-platform laptop over a Pentium 4-based laptop, simply for the performance and better battery life offered by the Centrino platform.

Mobile Mania

Q I want to buy a mobile phone; it should have Bluetooth, a camera with at least 10 minutes of recording (preferably with Night Shot), FM, MP3, a good screen, and four hours of talk time, and it must look great! I have a budget of around Rs 15k.

Jishad

001 First, I would ask you to look at the K700i from Sony Ericsson. An upgraded version of the K700i, to be called K750i, is on the horizon. It has a 2-megapixel camera and support for a memory stick, which the K700i lacks. You can also look out for the Nokia 6600, but the video recording is limited to just 10 seconds. The Nokia 6230, despite having most of the features you asked for, doesn't have a large screen.

More On Mobiles

Q Is there a mobile phone with Bluetooth, add-on memory capability, and an easy programmable interface (J2ME), but without a camera?

Raja Sekar

001 Almost all smart phones from Sony Ericsson and Nokia are J2ME-capable. However, it is difficult to point out a particular phone that does not have a camera and still has memory upgradeability.

At the same time, older J2ME phones with no camera have very little memory onboard—around 700-odd KB, which is not good for any programming that you may be interested in.

Of Thumb Drives

Q I want to buy a 128 MB thumb drive for under Rs 1,500. I want to transfer data files smaller

As far as processing power goes, Apple's PowerBook and Windows-based laptops are pretty much neck-to-neck

than 100 MB from my college computer to my home PC. A plug-and-play drive would be preferable.

Rajiv Bhalotia

001 You can buy a Transcend Thumb drive for around Rs 1,500. Contact Mediaman Infotech on 022-23828100. Also, almost all pen-drives are plug-and-play devices. If your PC has Windows 98 or ME, you will need to install the drivers, otherwise it will be automatically detected and initialised for use by Windows XP.

DVD/Combo Writer Please!

Q I want to buy a DVD/Combo writer for backing up my data. Could you suggest a good one? I need a drive with 52X writing speed and 16X DVD writing speed.

Dr V K Saxena

001 Typically, a combo drive costs between Rs 2,500 and Rs 2,950 depending on the brand. You can go for Lite-On, Sony, Asus or BenQ. In case of DVD-writers, buy them if your data set is going to be larger—that is, above 1 GB. You can buy a 16X DVD-Writer too, but as of right now, DVD media availability is an issue. For your information, DVD-writers will cost upwards of Rs 4.5k.

001 Month after month, I keep getting letters asking for a high-end, low-end and a mid-range PC configuration. I've decided to answer them all at once (see adjoining box).

I am addressing the low and mid-range configurations. In case of a high-end PC, just change the processor and graphics card in the mid-range PC to the fastest and the best available! You can even increase the memory to 1 GB, if you please.

Choose Your Computer

High-End	Make	Cost (Rs)
CPU	3200+	7,500
Motherboard	MSI RS480M2	6,500
RAM	512 MB DDR 400 Hynix	3,500
HDD	80 GB SATA Samsung/Seagate	2,650
Monitor	17" Acer 715	6,500
Keyboard	Logitech	300
Mouse	Logitech Optical Mouse	300
Cabinet	Any cabinet you like	500
Power supply	Antec / VIP 350 W power supply	2,000
Optical Drive	Lite on / Sony Combo drive	2,750
Speakers	Creative Inspire 2.1	2,400
Total		34,900
Graphics Card (optional)	XFX Geforce 6600 card	12,000
Low-End		
CPU	AMD Sempron 2500+	3500
Motherboard	ASUS A7N8X-VM	4500
RAM	256 MB DDR 400 Hynix	1600
HDD	80 GB SATA Samsung/Seagate	2650
Monitor	15" Acer 715	4500
Keyboard	Logitech	300
Mouse	Logitech Optical Mouse	300
Cabinet	Any cabinet you like	500
Power supply	Antec / VIP 350 W power supply	2000
Optical Drive	Sony CD-Rom	700
Speakers	Creative SB15	450
Total		21,000



Ask Away

Want a tech product, but don't know how to go about buying it? Send an e-mail to agent001@thinkdigit.com to get your queries answered



70 Crystal Clear



82 Your Café
On The Web



84 Is Toll-Free
The Way To Be

Digital Business

How Technology Can Help Your Organisation

Case Study

Secure Thy Network

**Learn how
Chennai-based
DAX Networks
stays on guard
with VPN,
firewalls and
digital signatures**

Meera Vankipuram

Are small firms more susceptible to security attacks? All organisations, irrespective of their size, are exposed to the same set of malware (any form of malicious software such as viruses and Trojans). However, SMBs who do not invest as much in IT, and have mostly one-man security teams, may be easy targets for security attacks as compared to bigger enterprises.

Fetish For Security

Not all agree, though. Chennai-based DAX Networks takes security very, very seriously. A 17-year-old organisation, DAX Networks specialises in delivering networking solutions (with pre- and post-sales support on projects) to SMEs and enterprise-level organisations throughout the country.

With over 150 users accessing their internal network on a daily basis, DAX has installed a Firewall-cum-VPN security solution offered by WatchGuard, a global security vendor. "We create customised networking solutions for several Indian companies, although some of the core technologies are sourced from the US," says R Rajan, Head-IT Processes, DAX Networks.

WatchGuard's Firebox

DAX purchased WatchGuard's Firewall plus VPN security solution, as it "fit the requirements of our network," according to Rajan. WatchGuard's Firebox solution was customised by DAX Networks. He adds, "We first discussed our needs thoroughly, with the WatchGuard reseller in Chennai. This kind of expenditure requires long-term planning."

Imaging Sajeew M V
Photographs Chandroo

R Rajan, Head-IT Processes,
DAX Networks

Ajit Pillai, country manager, WatchGuard, says, "The customised Firebox solution by DAX scans the perimeter of their network." The firewall protects the SMTP, FTP and HTTP servers from unwanted traffic. The Firebox series includes Firebox X, Firebox X Edge, and Firebox SOHO.

WatchGuard also offers unified threat management solutions including signature-based intrusion detection systems (IDS), and a 'State of Network' test, which is bundled free with its Firebox. WatchGuard's dynamic 'Live security service' provides regular updates and virus alerts, identifies vulnerabilities, spyware, and intrusions. Pillai elaborates, "Product updates, anti-spam and anti-virus tools can be enabled by installing software keys, thereby eliminating inventory issues."

Remote Servers And Data Transfer

"Our critical resources are accessed by about 35 users—they access Web sites, use FTP clients (two users), CRM applications (25 users), and access mail and domain servers as well. All functionalities are mapped and external users are authenticated at every stage," says Rajan.

Firebox has helped protect the company's critical resources. "With an edge-based firewall (one that protects the perimeter of the network) most vulnerabilities can be exposed. But we also use digital certificates for our transactions," adds Rajan. Digital certificates are often used for online transactions to validate one's credentials, and are used by companies operating in the e-commerce or monetary transactions space.

End User Involvement

In order to engage end-users in the security framework, WatchGuard's resellers conduct training sessions, and also help update the particular company's security resources.

WatchGuard coordinates various security audits and network maintenance programmes in alliance with vendors and resellers in different cities in the nation. "While some companies may want complete audits while others may require only updates—the requirements vary depending on the size of the network, VPN tunnel speed and throughput among other factors," says Pillai.

Rajan agrees that end user involvement is essential. He explains, "We use a Virtual Private Network (VPN) so that our Customer Relationship Management (CRM) server can be accessed by our sales team across India. Users

Most networks are vulnerable to intrusions and virus attacks. With virus writers getting incredibly creative, and spawning by the dozen, a robust network is one that can react immediately to an attack and bounce back to normalcy, ASAP. A few tips to keep your SMB's internal network secure:

Educating Your Employees

End users are extremely vulnerable nodes in any network. Enforcing protocols, like not opening suspicious attachments, updating virus definitions regularly, using 'safe' sites for e-commerce transactions, not responding to spam, and perhaps subscribing to security updates/newsletters from a trusted vendor would help prevent many attacks. Also, employees should report virus attacks immediately, and download relevant patches. Setting complex passwords for accounts, and using encryption keys for transfer of confidential documents is equally imperative.

Access To Key Network Resources

Access to key network resources should be restricted to one or two people (preferably the CTO and the System Administrator) and all security breaches should be reported to the concerned authority.

Software Updates

It goes without saying that pirated software is a no-no. Regular updates of existing software will safeguard your PC safe from newer, malignant malware.

Security Audits

Regular security audits—internal or external—are a must for any firm. With a slew of viruses and Trojans hitting the Internet on a daily basis, audits will let the administrative department know, how vulnerable a system is, to attacks. Again, the SysAdmin needs to involve users in security exercises.

Audits aside, employee awareness programmes can go a long way in ensuring that a network stays secure and active

access a remote server from their machines (with an SQL backend) and use PPTP (point-to-point tunnelling protocol) to access the server. However, firewall authentication is required at each and every stage."

Rope In The Employees

Active employee participation is critical for any secure network. After all, a network is as vulnerable as it's weakest link; the link, which most virus writers and spambots exploit—the end user. Audits aside, employee awareness programmes can go a long way in ensuring that a network stays secure and active.

As Pillai affirms, "The SMB segment in India is growing at a 30 to 40 per cent rate every year. Their employees are net-savvy and communicate with a global clientele. Moreover, the US and the UK-based companies are demanding rigorous security norms before awarding contracts to Indian firms."

Prevention Is Better Than Cure

SMBs such as DAX Networks, which may or may not flaunt a full-fledged 'IT team', are certainly reinforcing the 'better safe than sorry' norm. It is by investing time and resources in security solutions as well as enforcing stringent security procedures that SMBs can try and achieve minimum 'downtime' even when crippled by a severe violation of their security system.

"Security vendors have begun to realise that the 'one size fits all' paradigm doesn't hold true in the SMB space. Customised solutions coupled with personal attention, and assisting SMBs to promote prudent network usage works best," avers Pillai. ☒

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Security Alert: SHA-1 cracked?

In February this year, Slashdot (www.slashdot.org) published (unconfirmed) reports of the SHA-1 algorithm being cracked by a team of three Chinese researchers. The Secure Hash Algorithm (SHA) is a secure encryption algorithm used in security applications for online banking systems, in the creation of digital signatures for secure document transfer, hashing and the like.

Time now, perhaps, to shift to the next lot of SHA variants—SHA-224, SHA-256, SHA-384, and SHA-512—cumulatively called as SHA-2.



Crystal Clear

Compactness, flaunt value, crystal-clear viewing. That's what makes LCD monitors so desirable. With a further drop in prices, expect to see them on more home and office desks

**Aliasgar Pardawala and
Jayesh Limaye**

LCD monitors have been on the verge of mass usage for a long time now. But the fact that sales never took off despite them catching the fancy of computer users bears ample testimony to the fact that there are still some issues with the products that need to be sorted out—primarily, cost and value for money.

The good news is that prices have been dropping steadily over the past few months, to the point that many of us—even home users—can easily think of owning one. Nineteen-inch LCDs, unlike their CRT counterparts, remain beyond the reach of most of us, so we tested 15-inch and 17-inch LCD monitors—to be precise, 15 models from 15 brands in the 15-inch category, and 11 models from 10 brands in the 17-inch category.

Remember that unlike with CRTs, you don't get an inch or

as well as price—so you can make a sound decision on which one to buy.

Key Features

Here are some features to look at before you decide upon a model. Although our list is not exhaustive, it represents the most important things you need to know about and look out for.

Some things, such as the pixel pitch, are different from the CRT equivalent. Also, contrast ratios and such have different typical values in LCDs than CRTs.

Pixel Pitch

The pixel pitch is the distance between two white pixels, or two sub-pixels of the same colour. (A white pixel is made up of three sub-pixels—one red, one green and one blue.) The monitors we received in both the 15 and 17-inch categories had pixel pitches of 0.297 mm and 0.264 mm respectively—this is almost a universal standard. The individual size of each sub-pixel is, of course, smaller than the pixel pitch.

Native Resolution

In LCDs, the pixels are hard-etched on the panel, and therefore cannot display crisp images at any resolution other than the native resolution—unlike CRT monitors. The 15-inch and 17-inch models we received had native resolutions of 1024 x 768 and 1280 x 1024 pixels respectively—this, too, is almost universal.

If you change the resolution setting, you will see a badly focused image, and hard-to-read fonts with blurred edges.

Luminance

Luminance and contrast ratio are of prime importance in LCDs. The luminance rating depends on the monitor's fluorescent lamp, built into the casing. The brighter the lamp, the better. The lamp rating is what determines the brightness level the monitor can achieve.

In the 15-inch category, the CMV CT-529A had the highest luminance rating: 450 cd/m² (candelas per square metre). This is the vendor-specified rating, and, if correct, it means that the LCD can look bright even in a fully-lit room.

The Acer AL1512 claims a luminance rating of 350 cd/m², which is higher compared to the

In LCD monitors, the pixels are hard-etched on the panel, and so cannot display crisp images at any resolution other than the native resolution

rest of the bunch which maxed out at 250 cd/m². The Philips 150S had the lowest luminance rating of 200 cd/m², which means you need to make sure light doesn't hit the screen directly.

In the 17-inch monitor category again, the CMV CT-712A had a 400 cd/m² luminance rating, followed by the ViewSonic and the Acer at 380 cd/m² and 370 cd/m² respectively. The CMV's better lamp makes it easy for the user to tweak the brightness of the monitor according to the ambient light.

Contrast Ratio

The contrast ratio is the ratio of the brightness of pure white versus pitch black that the monitor displays. A higher contrast ratio means the user can set the monitor to display images with better visual depth. Also, a monitor with a higher contrast ratio helps the user fine-tune the panel to suit different lighting conditions.

Although LCD monitors do come with an 'Auto' setting feature that takes care of the brightness, contrast and geometry, this feature is usually not perfect,

two chopped off the viewable area—if it says 15 inches, almost all of it is viewable.

LCDs have suffered in the past in terms of acceptance because of their mediocre performance in the movies and games department, and also because of the restricted viewing angle. With better manufacturing processes, not only have prices come down, performance, too, in many areas has improved.

Apart from the fact that the technology is entirely different, LCD monitors differ in many non-intuitive ways from CRTs. For example, LCDs have a 'native resolution' at which they work best.

Remember, LCDs aren't the ideal solution for everyone out there—read on to find out whether to go the LCD way. We compared several LCDs based on aesthetic and technical aspects,



ViewSonic VE510b

**Umax
Maxvision V5**

and the user almost always has to do some tweaking. A contrast ratio of 120:1 is enough to display most colours. However, an even higher contrast ratio allows the panel to display more greyscales. This means you'll be able to see more shades of colour on an LCD with a higher contrast ratio.

Among the 15-inchers, the CMV and the HCL claimed the highest contrast ratio of 500:1, which is impressive, and which means the user has a wide range

of contrast and brightness to play with, from pitch black to really bright. The Philips 150s has a poor contrast ratio of 250:1, leaving little room for tweaking.

In the 17-inch models, the highest contrast ratio—550:1—was logged by the LG Flatron L1730S. It was followed by the BenQ and CMV at 500:1.

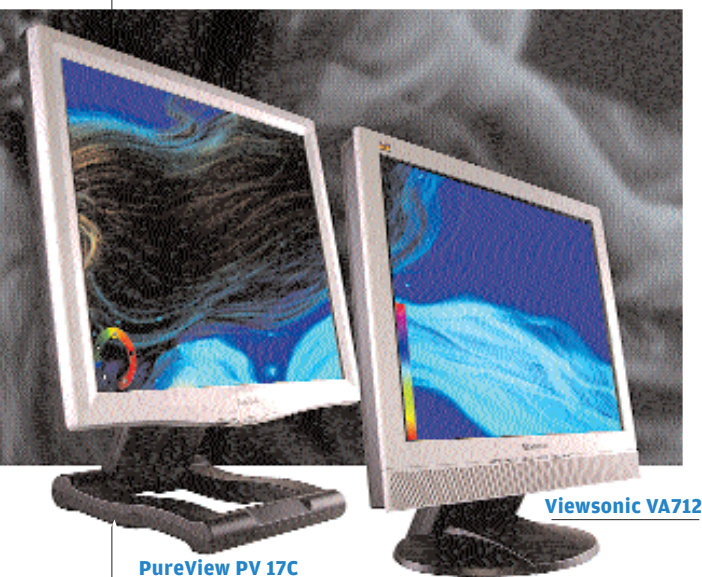
Dimensions

Tighter physical dimensions are always talked about when LCDs are compared with CRTs.

In the 15-inch category, the S-Media and BenQ boasted depths of just 12.8 and 13.6 cm respectively. This takes into account the base as well, and not just the panel. The ViewSonic VE510b had the smallest width and height of just 32.5 cm and 32.3 cm—it was a really neat package.

In the 17-inch category, the LG Flatron L1730S was sleek—it was just 11.5 cm deep, making it stand out from the rest. The NEC left enough space, width- and height-wise, to place it on a table under the file shelf and place stereo speakers on either side.

A higher contrast ratio means the user can set the monitor to display images with better visual depth



The Winsonic L17X, a new entrant in the LCD monitor segment, on the other hand, was comparatively very large—42.5 cm tall and 20.4 cm thick.

Weight

Monitors are not peripherals that see often changes in physical placement—weight, therefore, doesn't really matter that much. But of course, you'd always prefer a lighter monitor!



How We Tested

The monitors were tested keeping in mind performance, features, and value for money. Before running the tests, the monitors were placed perfectly vertical in order to eliminate any uniformity issues, and were auto-calibrated. All monitors were set to their native resolutions, and their drivers were loaded so we could get them to perform at their best.

The Test Bed Configuration: Both—the reference and test systems—were running on a P4 3.0 GHz CPU with 1 GB of DDR SDRAM, an nVidia 5950 Ultra graphics card, and a 7200 rpm SATA hard drive.

Features: In the Features tests, we looked for value-additions and other aspects that aimed at increasing the user-friendliness of the display. The features noted varied in significance—some were simple, like the user-friendliness of the OSD (On Screen Display); some were important, like power consumption, depth and weight.

One important thing we looked at was the monitor base, which decides the tilt the monitor is capable of—the more the better.

Some LCDs can be rotated vertically—landscape to portrait. This is useful while reading a long Word file or a PDF without the aid of a scroll-wheel mouse.

An oft-overlooked feature is the supplied user manual and quick start guide. It is especially helpful if the manual clearly states the full technical specifications of the monitor.

Performance: We used the DisplayMate benchmarking software to gauge the LCD monitor's performance. This software uses images to test a monitor for criteria such as Point Shape and Visibility. For example, to gauge how accurately the LCD can display a fine point, and whether or not it is able to retain the round shape of the dot, can be gauged by this test.

In the colour and greyscale set of tests, we checked for colour reproduction, the level shift problem, and the streaking or ghosting effect. We ran the 16-intensities and 64-level primary and secondary colour intensities tests to see how well the monitors could display shades.

In the miscellaneous tests within DisplayMate, we checked for screen uniformity. We also tested the Reverse Video Contrast.

The Pixel Persistence Test was run to check for jerks or image blurring. We used the Passmark Monitor Test to check for image persistence at the edges.

For the viewable angle test, we used a protractor placed inline with the LCD panel, and the screen was viewed from either side. A document containing different fonts was viewed from various angles, letting us determine the angles at which the text still looked sharp.

Price: We took the price of each monitor vis-à-vis its features and performance into account.

How we awarded

The features, performance and price scores were given relevant weightages, and an overall score out of 100 was calculated. The product that scored the highest was adjudged the winner of the *Digit* Best Buy Gold award for its category, while the second highest got the *Digit* Best Buy Silver award.

Of the 15-inch monitors, the CMV CT-529A was the lightest at just 2.6 kg, followed by the S-Media at 2.7 kg. The Philips 150s, at 5 kg, was the heaviest.

In the 17-inch segment, the CMV CT-712A was the lightest at 3.4 kg, followed by the Acer at 3.49 kg. The NEC LCD1770NXM is the heaviest, at 6.5 kg—which is very heavy by LCD standards.

Flexibility

If a monitor allows for height adjustment, you can set it to the level that makes for most comfortable viewing. And monitors that do not allow for height adjustment will require you to adjust the height of

your chair, which is not a good thing. In the 15-inch category, not a single monitor had this useful feature. It wasn't much better in the 17-inch category, either—just three panels, the HCL, the NEC and the Philips, had the height adjustment feature. You can adjust the height of these monitors by about 11 cm.

Horizontal and vertical swivel is another good feature found in a few LCD monitors. Most monitors allow for vertical tilt, but very few allow for horizontal swivel. In the 15-inch segment, the Digiview was the only monitor that had both horizontal and vertical swivel. The rest came with the provision only for vertical tilt. Amongst the 17-inchers, again, just two brands—HCL and NEC—offered horizontal as well as vertical tilt.

Other Features

These days, some graphics cards, including even some entry-level ones, come with the DVI interface.

If the monitor

will be forced to feed it to the monitor through the D-sub connector. In the 17-inchers, the BenQ, NEC and Philips had DVI inputs.

Power Consumption

A salesman selling an LCD monitor will never forget to mention the power consumption rating of LCD monitors vis-à-vis CRT monitors. It is a fact that LCD panels consume less power compared to CRT monitors, but it is also true that the power requirements are often not substantially lower.

Fifteen-inch LCDs need anything between 21W and 35W. Seventeen-inchers need between 40W to 60W of power, which, compared to the 64W needed by the Philips 107E5 CRT monitor, is just a small improvement.

Always remember to check the power rating of the LCD you are thinking of investing in, and note whether there is substantial power saving possible. Of course, for a home user, this doesn't make



Acer AL1512

CMV CT-529A

has a DVI input, there is no signal conversion happening in the monitor, so the overall image quality is much better than with the D-sub interface. Sadly, none of the monitors in the 15-inch category had a separate DVI interface to accept a pure-digital signal from a graphics card.

This means that even if you have a graphics card that can deliver a pure-digital signal, you

too much difference—it's in an office, where several monitors are deployed, that power costs add up to make a difference.

How They Fared

The monitors were tested using DisplayMate Video Edition and the Passmark monitor test utility, along with several real-world tests—these included the viewing angle test and looking for the ghosting effect during movies.

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15-inch LCD Monitors

BRAND	Acer	Aopen	BenQ	CMV	Digi-View	HCL	LG	NEC
Model	AL1512	F1513	FP537s	CT-529A	DGL-115AS	HCM 510LSA	Flatron L1530S	AccuSync LCD 52V
Features								
Pixel Pitch	0.297	0.297	0.297	0.297	0.297	0.297	0.297	0.279
Luminance (cd/m2)	350	250	250	450	250	250	250	250
Contrast Ratio	450:1	400:1	400:1	500:1	350:1	500:1	400:1	400:1
Native Resolution	1024x768	1024x768	1024x768	1024x768	1024x768	1024x768	1024x768	1024x768
Response time (ms)	23	25	15	16	25	16	16	25
W x H x D (cm)	34.6x33.7x18	35.5x36.5x19	33.8x33.1x13.6	34.8x34.4x18.6	47x45x14	35.6x35.5x15	36.8x39.9x21	34.4x35.2 x16.5
Weight (KG)	2.5	2.9	3.7	2.6	3.3	3	3.6	3.2
USB hub (Y/N) / No. of ports	✗	✗	✗	✗	✗	✗	✗	✗
Built in Speakers (Y/N)/watts	✓/NA	✓/2W	✗	✓/NA	✓/NA	✓/1W	✗	✗
VESA Wall Mount	✓	✓	✓	✓	✓	✓	✓	✓
Swivel Base (Angle) verticle/horizontal axis	✗/✓	✓/✗	✓/✗	✗/✓	✓/✓	✗/✓	✗/✓	✗/✓
Height Adjustment (cm)	✗	✗	✗	✗	✗	✗	✓	✗
Landscape/Portrait	✗	✗	✗	✗	✗	✗	✗	✗
In-built TV Tuner	✗	✗	✗	✗	✗	✗	✗	✗
Power Consumption (W)	33	30	30	33	25	35	25	21
Input types	D-Sub, Stereo pin	D-Sub, Stereo pin	D-Sub	D-Sub, Stereo pin	D-Sub, Stereo pin	D-Sub, Stereo pin	D-Sub, Stereo pin	D-Sub
Bundled Accessories (Manuals, Colour Profile, Driver and Calibrating software...)	Quick setup guide, Electronic user's guide on CD	Power/D-sub cable and power adapter	Quick start guide, Driver and Manual on CD	Quick setup guide, Electronic user's guide on CD	User guide, Driver CD, Calibrating software	Quick setup guide, Electronic user's guide on CD	User guide, Driver CD, Calibrating software	NaViSet software,
DISPLAYMATE VIDEO EDITION								
Sharpness and resolution								
Point shape and visibility	3	2.25	3	2.75	3.5	2.75	2.625	3.5
Video Bandwidth test	3.25	2.5	3.625	3.75	3.875	3.375	3.875	3.5
Colour and Gray-Scale								
Streaking and Ghosting	5	3	5	5	5	5	5	5
Bar Streaking	5	3.25	4.5	5	4.875	3.5	5	5
Colour Streaking	5	2.75	4.875	4	4.875	4	4.875	4.75
Mid-Range streaking	3.25	2.75	3.25	2.75	3.5	2.5	3.5	3
White-level shift	3.875	2	3.375	3	3.25	3.25	3.375	3.75
Black-Level shift	3.5	3	3.25	3.25	3.5	3.25	3.375	3.5
RGB purity	4	4	4	4	4	4	4	4
Text colour combination	3.375	3	3.625	2.25	2.75	2.375	3.25	3.5
16 intensities levels	3.375	3.75	4.5	4.25	4.25	4.25	3.875	3.75
64 intensities for primary colours	3.125	3.125	3.75	3.75	3	3.375	2.875	3.25
64 intensities for secondary colours	3.25	3.25	4	4	3.25	3.375	2.875	3.25
256 intensities level	3.25	3.25	4	3.875	3.375	3.125	3	3.25
Colour scales	3.25	3.25	4.25	4.125	3	3.125	3.125	2.75
Miscellaneous tests								
Reverse Video Contrast	3.75	3.75	3.75	3.25	4	3.75	4	3.75
Screen uniformity	3.5	3	4.375	3.125	3.25	3.375	3.25	3
Passmark Monitor Test								
Pixel Persistence test (So5)	1	0.5	0.5	0.75	0.75	0.5	0.375	0.5
Miscellaneous tests								
Movie Test (ghosting effect)	2.375	2.5	1.25	2.875	2.625	2.5	2.25	2
Viewable angle test (Text)	147.5	152.5	155	150	140	137.5	150	155
Viewable angle test (Movie)	135	137.5	125	125	122.5	122.5	135	125
OSD usability test	4	2.5	4	4	4	4	4	3.5
OVERALL SCORE	70.20	55.19	63.32	66.07	65.18	61.41	58.07	55.92
Feature	7.25	6.15	6.23	7.21	7.00	6.00	5.84	4.40
Performance	44.95	37.79	46.17	43.86	44.33	41.55	43.66	43.52
Price Index	18.00	11.25	10.92	15.00	13.85	13.86	8.57	8.00
Price (Rs)	9,999	16,000	16,490	12,000	13,000	12,990	21,000	22,500

Sharpness and Resolution

We checked for the sharpness of the image using the Point Shape and Visibility screen in Display-Mate, consisting of a fine white dot. We looked for pixel bleeding, and found that most monitors had some amount of bleeding at

the edge. This bleeding results in a red, green or blue tinge at the edge of the dot. Only the ViewSonic VE510b (15-inch) and VA712 (17-inch) returned acceptable results.

In the video bandwidth test, a fine white line is drawn on a black background. This screen is

used to see how accurately the lines are drawn and whether there are any discrepancies.

In the 15-inch category, the AOpen and S-Media displayed blue tinges running across the length of the line at the edge, whereas the Winsonic L1562S, due to its high brightness,

Philips	PureView	Samsung	S-Media	Umax	ViewSonic	Winsonic
150S	PV 15C	SyncMaster 510N	EY-15NB	MaxVision V5	VE510b	L1562S
0.297	0.297	0.297	0.297	0.297	0.297	0.297
200	250	250	250	250	250	300
250:1	300:1	450:1	400:1	400:1	400:1	400:1
1024x768	1024x768	1024x768	1024x768	1024x768	1024x768	1024x768
50	20	16	16	20	25	NA
38.7x37.5x18.3	34.2x34.5x18.2	38.5x39.3x20.1	35x34x12.8	46x45x23.5	32.5x32.3x17	36x34x18.3
5	4.5	3.1	2.7	3.55	3	NA
✖	✖	✖	✖	✖	✖	✖
✖	✓/2	✖	✓	✓/2	✖	✓
✓	✖	✓	✓	✓	✓	✓
✖/✓	✖/✓	✖/✓	✓/✖	✖/✓	✖/✓	✖/✓
✖	✖	✖	✖	✖	✖	✓
✖	✖	✖	✖	✖	✖	✖
✖	✖	✖	✖	✖	✖	✖
27	33	33	30	Na	30	NA
D-Sub, Stereo pin	D-Sub, Stereo pin	D-Sub	D-Sub, Stereo pin	D-Sub, Stereo pin	D-Sub	D-Sub
Quick setup guide, Electronic user's guide on CD	NA	Quick setup guide, Driver CD, Calibrating software	Manual, Power/D-sub/stereo cable, Power adapter	Quick setup guide, Electronic user's guide on CD	Quick start guide, CD	NA
2.875	2.5	3	2.25	2.375	3.375	1.25
3.75	2.75	3.5	2.5	3.625	4	0.75
4.5	4.875	5	4.25	5	4.875	3.75
4	4.625	4.875	4	5	5	3.75
4.5	5	4.875	4	5	5	3.75
3	3.125	3.25	2.75	3.5	3.25	2.5
3	2.75	3.625	3.25	3.25	3.5	2.125
3	3.125	3.5	3	3.5	3.5	2.25
4	4	4	4	4	4	3.75
2.5	3.125	3.5	3	3.75	3.5	2.5
4	2.875	3.375	3.75	3.875	4	2.25
3.875	3	3	3.375	3.375	3.375	2
3.875	3.125	3	3.5	3.25	3.375	2
3.75	2.5	3.125	3	3.125	3.375	2.25
3.875	0.5	2.625	3.25	3.25	3.25	2
3.125	3.75	4	3.25	3.75	4	2.75
3	3	3.25	2.5	3.5	3.5	2.625
0.75	0.5	0.5	0	0.5	0.75	0.5
2.75	2.125	2.75	2.75	2.75	2.75	1.75
145	151	152.5	150	150	150	150
127.5	125	137.5	137.5	127.5	140	135
4	4	4	4	4	3.75	3.25
62.86	56.18	62.14	60.54	62.05	62.37	53.52
5.31	4.83	6.05	7.29	6.08	6.16	5.61
43.16	40.76	44.09	40.39	44.72	45.92	32.91
14.40	10.59	12.00	12.86	11.25	10.29	15.00
12,500	17,000	15,000	14,000	16,000	17,500	11999

made the black background look like a shade of grey. In the 17-inch category, except for the Philips, all monitors returned a crisp line.

This test is important for those who use imaging software, where accurate reproduction of finer elements is important.

Ghosting

The ghosting, or streaking, effect is a major problem with LCD monitors. Ghosting is basically the presence of light or dark shadows that trail an image in areas where large changes in intensity are present. It is visible when images on the screen move at a speed faster than

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17-inch LCD Monitors

BRAND	Acer	BenQ	BenQ	CMV	HCL	LG	NEC	Philips
Model	AL1714 sm	FP731	FP783	CT-712A	HCM729LDA	Flatron L1730S	MultiSync LCD1770NXM	170S5FB/00
Features								
Pixel Pitch	0.264	0.264	0.264	0.264	0.264	0.264	0.264	0.264
Luminance (cd/m²)	370	260	300	400	250	250	250	250
Contrast ratio	350:1	450:1	500:1	500:1	450:1	550:1	500:1	450:1
Native resolution	1280x1024	1280 x 1024	1280 x 1024	1280x1024	1280x1024	1280x1024	1280 x 1024	1280 x 1024
Response time (ms)	14	25	12	14	25	16	25	16
W x H x D (cm)	38.3x39.4x21.1	37.5x37x15.5	38.7x39.8x25	39.5x41.4x20.8	38.2x39.8x23	39.8x39.3x11.5	36 x 36.86 x 19.8	37.5x42.3x17.4
Weight (Kg)	3.49	4.2	5.2	3.4	5.9	4.9	6.5	4.2
USB hub (Y/N) / No. of ports	✗	✗	✓/2	✗	✗	✗	✓/4	✗
Inbuilt speakers (Y/N)/watts	✓/NA	✗	✗	✓/2	✓/2W	✗	✓/NA	✗
VESA Wall Mount	✓	✓	✓	✓	✓	✓	✓	✓
Swivel base (angle) vertical/horizontal axis	✗/✓	✓/✗	✓/✗	✗/✓	✓/✓	✗/✓	✓/✓	✗/✓
Height adjustment (cm)	✗	✗	✗	✗	11	✗	10.4	10.4
Landscape/Portrait	✗	✗	✗	✗	✗	✗	✗	✗
Inbuilt TV tuner	✗	✗	✗	✗	✗	✗	✗	✗
Power consumption (W)	51	45	60	51	45	40	55	55
Input types	D-Sub, Stereo Audio	D-Sub	D-Sub, DVI, USB,	D-Sub, Stereo pin	D-Sub	D-Sub	D-Sub, DVI-D	D-Sub, DVI-D
Bundled accessories (manuals, colour profile, drivers, calibrating software...)	Quick start guide, electronic user guide on CD	Quick start guide, driver and manual on CD	Audio driver and manual on CD, USB camera	Quick setup guide, electronic user guide on CD	User guide	User guide, drivers, Colorific software	Speakers, D-Sub cable	D-Sub cable, power cable, drivers CD
DISPLAYMATE VIDEO EDITION								
Sharpness and resolution								
Point shape and visibility	2.75	2.625	2.88	3	3	2.75	3	2.75
Video bandwidth test	3.5	3.125	3.13	3.75	4	4	4	2.5
Colour and greyscale								
Streaking and ghosting	5	5	4.88	5	4.5	5	5	3.75
Bar streaking	5	5	4.88	4.75	4.5	4.75	5	3.75
Colour streaking	5	4.75	4.88	4.25	4.5	5	5	4
Mid-Range streaking	3.125	2.875	2.88	2.25	3.25	3.25	3	2.875
White-level shift	3.25	3.125	3.00	3.625	3.75	3.5	3.5	3.875
Black-level shift	3.25	3.375	3.00	3.625	3.75	3.875	3.5	3.625
RGB purity	4	4	4.00	4	4	4	4	4
Text colour combination	3.5	3.625	4.13	2.625	3.5	3.75	4	4
16-intensities levels	4.25	4	4.13	4.25	4	3.75	3.5	4.5
64 intensities for primary colours	3.75	3.375	3.38	3.25	3.75	3.25	3	3.75
64-intensities for secondary colours	3.75	3.375	3.38	3.25	3.75	3.25	3	4
256-intensities level	3.75	3.5	3.50	3.25	3	3.25	3	4
Colour scales	3.625	3.5	3.25	3.25	3	3.125	2.5	4.25
Miscellaneous tests								
Reverse Video Contrast	4.25	4	4.00	3.625	3.75	4	4	4
Screen uniformity	3	4	3.50	3.5	2	2.75	2.5	4.25
Passmark Monitor Test								
Pixel Persistence test (So5)	0.75	0.75	1.00	0.75	1	0.75	1	1
Miscellaneous tests								
Movie Test (ghosting effect)	3	2.75	3.13	2.875	3.25	2.5	3	1.5
Viewable angle test (text)	152.5	155	152.50	150	152.5	155	140	127.5
Viewable angle test (Movie)	135	140	147.50	132.5	132.5	132.5	140	147.5
OSD usability test	4	4	4.13	4	4	4	4	3.25
OVERALL SCORE	71.16	64.59	61.31	67.17	60.09	62.07	58.23	65.69
Feature	6.63	5.83	5.95	6.60	4.20	6.76	6.72	6.09
Performance	45.86	45.58	46.02	44.10	44.68	44.94	44.42	44.86
Price Index	18.67	13.18	9.34	16.47	11.20	10.37	7.09	14.74
Price (Rs)	14,999	21,250	29,990	17,000	24,990	27,000	39,500	19,000

the pixels' response time. This puts undue strain on the eyes.

To check for ghosting, we ran four different ghosting screens in DisplayMate, and found that most monitors returned good results, the exception being the 15-inch AOpen F1513, which displayed streaking in the Colour Streaking screen.

In this test, the monitors managed such good results

because they didn't have to deal with moving images. We therefore ran an additional test that involved watching a movie clip that showed fast-moving objects.

In the 15-inch category, we found the BenQ FP537s giving the best results, with very little ghosting visible. In the 17-inch category, it was again the BenQ—the FP731—which came out on top.

Level Shift

Here, we looked for the white and black level shifts, which happen when two adjacent areas differ greatly in contrast. In this test, most 15-inch displays fared well with very little level shift visible, except for the AOpen F1513, where the white level shift was evident.

Of the 17-inch monitors, the BenQ FP783 did suffer from level

PureView	ViewSonic	Winsonic
PV 17C	VA712	L17X
0.264	0.264	0.264
250	380	300
500:1	350:1	400:1
1280x1024	1280x1024	1280x1024
25	8	NA
41.5x39x14	38.6x41.1x17.7	41x42.5x20.4
4.5	4.3	NA
✗	✗	✗
✓/2	✓/1W	✓
✓	✓	✓
✗/✓	✗/Y	✗/✓
✗	✗	✓
✗	✗	✗
✗	✗	✗
40	60	NA
D-Sub, Stereo pin	D-Sub, stereo pin	D-Sub
User guide, drivers, Colorific software	Quick start guide, CD	NA
3	3.75	2.75
3.75	4	3.25
4.75	5	2.5
4.5	5	2.5
4.75	4.375	2.5
3.375	3.25	1.5
3.625	3.625	1.5
3.625	3.625	1.5
4	4	2
3	4	1.75
3.5	4	2
3.25	3.5	1.75
3.25	3.625	1.75
3.25	3.5	1.5
2.875	3	1.75
3.625	4	2
2.75	2.875	0.75
0.5	0.75	0.25
2.75	2.5	0.75
152.5	155	75
135	145	75
4.125	4	1.5
62.36	64.04	63.10
7.60	5.40	4.78
43.56	46.19	41.85
11.20	12.44	16.47
25,000	22,500	16,999

shift, but not to the extent that it could cause eye strain.

Level shift, if high, can be a big problem in Photoshop-like applications, where there are often light and dark areas adjacent to each other.

Text-Colour Combination

In this test, we checked for a monitor reproduced coloured fonts on backgrounds of different colours.

LCDs have red, green and blue sub-pixels that make up a pixel. When coloured text, say magenta, is displayed on a grey background, you can easily identify the black space between two magenta dots, making the font look serrated.

Of the 15-inchers, the Umax returned impressive overall results—it had no problems with magenta fonts. The CMV CT-529A and the Winsonic L1562S, on the other hand, returned poor results: both yellow and magenta fonts appeared like a collection of dots.

In the 17-inch category, it was again the CMV CT-712A that returned lower-than-average results. The rest of the 17-inchers fared pretty well too.

Intensity Levels

In this set of tests, we looked for how well the LCD monitors could display 16, 64 and 256 shades of grey (these are the ranges that the benchmark suites provide for).

The 64-Intensities test with secondary colours, and the 256-Intensities tests, are rather difficult for LCD monitors—hardly any monitor can display more than 64 shades correctly. In this, contrast and brightness play an important role, as an overly bright screen will not display shades of grey in the light region, and a dark screen will merge shades on the darker side.

All the 15-inch monitors fared well in the 16-Intensities and 64-Intensities tests for primary colours, except for a couple: the Winsonic L1562S and the LG L1530S merged a few levels on the brighter and darker sides respec-

tively. In the 256-Intensities test, the PureView PV 15C displayed thick black and white bands (meaning that it merged the shades) on either side of the spectrum. This can be a problem, especially while watching movies, where dark scenes will appear overly dark, hence snuffing out the details.

The Winsonic L17X, in the 17-inch category, scored low compared to the others in this test. This means that the user will need to manually calibrate the monitor for contrast and brightness rather than relying on the auto setting.

Miscellaneous Tests

Screen Uniformity And Reverse Video Contrast

In this test, coloured text on white and two different shades of grey was used. In the 15-inch category, the S-Media was the only monitor



Philips 170S5FB/00

NEC MultiSync LCD1770NXM

that suffered in screen uniformity: it displayed several shades of grey. The reverse video contrast test was easy for all the 15-inches; they all passed it without much variation in quality.

Among the 17-inch monitors, the Winsonic, HCL and NEC scored lowest: there was clearly-visible variation throughout, in the screen uniformity test. The Philips 170s returned solid results, with a very

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consistent screen, corner-to-corner. The reverse video contrast test did not pose problems for any of the 17-inch monitors.

Passmark Monitor Test

We used the LCD pixel persistence test in the Passmark monitor test to check for the pixel persistence problem with the panels. In this test, a bright white block moves at various speeds across the monitor, ranging from 100 pixels/second to 800 pixels/second.

The entire set of monitors in both categories failed to display even the slowest moving block without persistence—all of them scored very low.



Acer AL1714sm

CMV CT-712A

Our test results lead us to believe that none of the LCDs we tested are at a stage where they could be considered good for games or movies. If you're into gaming, you're better off with a CRT. If you want to watch movies on an LCD panel, don't expect an exceptional viewing experience.

Viewable Angle Test

Here, we used a text screen in DisplayMate, and a movie scene, to find the maximum viewing angle of each monitor. In the 15-inch category, the HCL HCM 510LSA had the smallest viewing angle in text and movie mode—137 and 122 degrees respectively.

Most panels returned a higher viewing angle in text mode—this was because of the bright background. They suffered in the movie test because the movie was a mix of bright outdoors and dimly-lit indoors scenes. The ViewSonic VE510b reached 140 degrees in the movie, which was highest we saw in the 15-inch category.

In the 17-inch segment, the Philips 170s managed only 127 degrees in the text test, whereas the CMV, HCL and LG returned 132 degrees in the movie test. The BenQ FP783 and the Philips 170S managed 148 degrees, which was the highest we saw.

Cost

The Acer AL1512 carries a price tag of Rs 9,999 excluding taxes, whereas the 17-inch Acer is available for as low as Rs 14,999, which makes it cheaper than some of the 15-inch models. There are still brands such as NEC, which sell at a premium—Rs 22,500 for the 15-inch model, which is about Rs 5,000 more than other well-known brands such as Philips, ViewSonic and BenQ.

And The Winner Is...

If you take into consideration just pure performance, the 15-inch BenQ FP537s comes out tops. A worthy mention where performance is concerned is the ViewSonic VE510b. But neither of these monitors could make it to the top because of their price tags.

Price played an important role

in deciding our Gold winner, which is the Acer AL1512. It fared comparatively well in both performance and features, but its really low price—just Rs 9,999—helped it edge pass models that performed equally well. The CMV CT-529A, which is our Silver winner, returned features and performance scores similar to the Acer, but is slightly higher priced.

In the 17-inch category again, price played a major role in deciding our winner, and the Acer AL1714sm, with a price tag of just Rs 14,999, won Gold.

Most of the other monitors had similar features and performance scores, but are priced very differently. The Acer, which is the cheapest 17-inch model, retails for just Rs 14,999. This makes it cheaper than many 15-inch models, whereas the NEC 1770NXM is priced at a whopping Rs 39,500. The kind of performance that the NEC 1770NXM and the BenQ FP783 gave was similar to that of less expensive models from other brands, and at the same time, they did not carry features that could justify the high prices.

The Silver winner in the 17-inch category is the CMV CT-712A, which is very competitively priced at Rs 17,000.

To Buy Or Not To Buy...

LCDs have their pluses and their minuses. We've mentioned the main pluses. And they have their cons too—movies and games are CRT territory.

One reason LCDs are not suitable for games is that they're fixed resolution—so you end up either playing your game in a small window, or with all the action blurred. The fixed resolution can be a problem in other areas as well. As for movies, it depends. Some of us really will not find fault with the way movies look on an LCD; some of us will.

Whether to go in for an LCD monitor is something to think about for a while. LCDs look good, have flaunt value, and the image, in general, is crisper than that on a CRT. For popularity to grow, however, costs have to come down, the nitty-gritties that persist have to fade away and the user needs to know that this makes the best sense—for business or pleasure. So, are you ready to go slim? ☐

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jayesh_limaye@thinkdigit.com

Contact Sheet		LCD Monitors		
Brand	Company	Telephone	E-mail	Web site
Acer	Acer India Pvt Ltd	080-5219520-23	Rajesh_Aiyar@acer.co.in	www.acer.co.in
AOpen	Xserve India Pvt Ltd	080-5113 1001	info@xserves.com	www.aopen.com
BenQ	Benq India Pvt Ltd	022-25705230	SalesEnquiryIn@BenQ.com	www.benq.co.in
CMV	Cee Vision Technologies Pvt Ltd	022-26733353	chemoplastmumbai@vsnl.net	www.cmv.com.tw
Digi-View	D-Link India Ltd	022-26526696	sales@dlink.co.in	www.dlink.co.in
HCL	HCL Peripherals	044-5200 6570	kiruba@hclp.com	www.hclperipherals.com
LG	LG Electronics India Pvt Ltd	0120-2560900	avarshney@lgezbuy.com	www.lgezbuy.com
NEC	Shiba Comp Pvt Ltd	011-26413437	sales@shibacomp.com	www.nec-mitsubishi.com
Philips	Philips India Ltd	022-56912324	pcp.india.info@philips.com	www.india.philips.com
PureView	Pureview Technologies Pvt Ltd	022-56633726	sales@pureviewindia.com	www.pureviewindia.com
Samsung	Samsung India Electronics Ltd	011-51511234	marketing@samsungindia.com	www.samsungindia.com
S-media	Xserve India Pvt Ltd	080-5113 1001	info@xserves.com	www.aopen.com
Umax	Neoteric	022-39828600	trajesh@neoteric.co.in	www.umax.com.tw
ViewSonic	Roop Technology Pvt Ltd	022-26680022	roop@vsnl.com	www.viewsonic.com
Winsonic	Winsonic Technologies	022-55969222	kavita@winsonicindia.com	www.winsonicindia.com



Illustration Shyam Shriram

Your Café On The Web

Social networking online can help your business grow

Meera Vankipuram

Then: BBS, Usenet, IRC, Yahoo! Groups, IMs

Now: Orkut, Ryze, Wallop, Bebo, Friendster, Yahoo! 360°, Tribe, Hi5

When blogs first hit the Internet a few years ago, almost everyone viewed them with suspicion and disdain: "Online diaries? Who cares?"

A lot has changed since. Blogs have made news—both good and bad. While blog-writing is still a long way from being considered mainstream journalism, some bloggers have managed to bag lucrative book deals from publishing houses. Several online organisations have even instituted annual awards for the best blogs in categories ranging from striking design to thought-provoking content.

Blogs have also helped people across the world connect, almost instantly, with people they share interests with. By leaving notes or comments on each other's blogs, and being part of blog-rings, people can now form micro-communities on the Web.

This isn't very different in principle from Internet message boards, or even Yahoo! Groups, blog-rings help personalise the community—one can know more about the person he or she is communicating with, the simple reason being that the writer's thoughts and expressions are recorded on his or her blog.

By Invitation Only

Then, Gmail happened. Gmail used the most potent marketing gimmick ever—exclusivity—to launch its much-hyped 1 GB mail account. Gmail accounts, offered on a trial basis to select bloggers, pushed the ego button: they were available 'by invitation only', causing an online stampede to secure invites—even spawning sites such as gmailswap.com, where people made ludicrous offers in exchange for Gmail invites.

Along with Gmail, Google launched their social networking venture, Orkut (www.orkut.com). Securing membership to Orkut was, again, 'by invitation only'. Orkut shared space with other communities such as Friendster (www.friendster.com), and business networking site Ryze (www.ryze.com), which also organises regular, paid offline events. These

events—called Ryze Mixers—are popular with the members of a particular group, and provide them the opportunity to meet people, and develop personal and professional relationships.

Different Strokes For Different Folks

The recently-launched beta versions of Yahoo! 360° (<http://360.yahoo.com/>) and Microsoft's Wallop (www.mywallop.com) are the new entrants in the social networking realm.

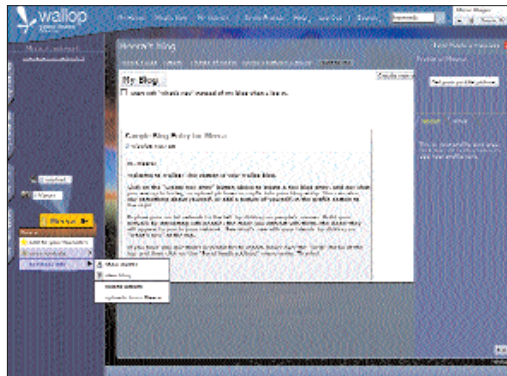
Both let you store and share pictures and music, and provide additional features such as blogs, and the facility to send instant messages via existing instant messenger clients such as MSN, Yahoo! or AOL Messenger. Yahoo! 360° also allows users to send personalised notes to their Yahoo! 360° contacts, which the latter can view on their home pages.

Wallop's Flash interface is groovier than the existing networks. Apart from providing a blogging tool and a music player, Wallop also lets users set up an RSS (Rich Site Summary or Really Simple Syndication) feed—RSS is an XML format for distribution of news headlines on the Internet.

RSS enables bloggers to share their latest entries and other news from across the Web.

Orkut's personalised message boards are popular among its users, but Orkut has had serious issues with speed, with members complaining that pages “take forever” to load. [See box below]

Ryze (www.ryze.com) and LinkedIn (www.linkedin.com) are more serious business



Wallop's 'flashy' interface offers various add-ons

Digit Forum Votes For Yahoo! Groups

We asked our forum members what they thought of online communities. Yahoo! Groups wins hands down, polling 44 per cent of the votes—out of, umm, nine responses! Here's what some of our members have to say.

Enoonmai: “I've been using Ryze for quite some time now, and find it very good. I signed up for Yahoo! 360° recently. I doubt if Yahoo! 360 can take off as a popular business networking site, but it might do quite well with youngsters and those into semi-casual social networking.”

Tuxian: “Well, Ryze is great. You develop contacts with a lot of important people. Orkut sucks when it comes to speed... (and is) not that attractive. Yahoo! 360° still needs to be evaluated...”

Deep: “I was on Orkut for a while. In the beginning, I found it pretty cool... but that's it. No one even cared to reply to messages after that... so it was

kind of bad. People signed up there in all the excitement, but no one cared to keep in touch. It's also way too slow.”

Din: “My college friends are all in different parts of the world now, but we're connected through mailing lists and Yahoo! Groups.”

Link to Discussion Thread: <http://snipurl.com/dzn4>



LinkedIn is popular among top business executives

networking communities. With a clean, functional interface, Ryze lets you import contacts from your e-mail client. Members can add and remove contacts as they like, and regulate the amount of information that is disclosed to each contact.

LinkedIn is a 'white-collar' business networking community, targeting executives at the CEO/CTO level. It enables companies find suitable candidates, clients, partners and industry experts. Members can invite and apply for job offers listed on the site. Again, membership and referral is strictly by invitation only.

Friendster (www.friendster.com), a global networking community, categorises members by personal details and geographic location. It claims a membership of nearly over 13 million.

Tribe (www.tribe.net) is a compilation of thousands of moderated discussion threads on specific topics, such as, cinema, music, and news. You can post your profile and be part of numerous 'tribes', or special-interest groups.

Hi5 (www.hi5.com) is another popular networking site. Hi5 also enables photo sharing and blogging, along with RSS feeds, and a message board.

Almost all these networking sites are still in the beta or test stage, and need to resolve security and speed issues. By ensuring that members get to decide whom to invite into their networks, these sites attempt to avoid the entry of online marketers and spam, to which several Yahoo! Groups fall prey.

Six Degrees Of Separation

Social networks attempt to capitalise on the 'Six Degrees of Separation' theory, according to which, each human being is separated from another by no more than six degrees, or six friends' friends (or six clicks, in case of the Internet!)

Whether social networks help you find a good companion, soul mate, life partner or business associate depends largely on your attitude towards online communities: be patient, don't expect miracles, and be honest while communicating with your online buddies.

After all, as Baz Luhrmann said in the 'Sunscreen Song', “Your choices are half chance. So are everybody else's”. ■

meera_vankipuram@thinkdigit.com

Jiten Gandhi



Devita Saraf
Executive Director,
Marketing, Zenith
Computers

“Generally, we use our toll-free numbers for pre-sales activity. Customers call up to get detailed information on our products. Toll-free numbers are especially helpful for customers who want to seek information prior to purchasing a product. They call the number, which is routed to our call centre in Mumbai.

“Since we also provide after sales support, we have a different number for this, but this is a charged number and the rates as per local calls. The service provided on these calls is more specialised. The person answering the call identifies the problem and in most cases, engineers personally go to the location to resolve the issue.

“I feel that the option of businesses having toll-free numbers is a good one. It makes the customer more confident when opting for a product from the vendor.”



Is TOLL-FREE

Almost every company, irrespective of what they are selling, has a toll-free number that can be used by the consumer for making inquiries or complaints. Is this the future of customer service? We spoke with a few computer and related companies that offer this service



Sandeep Mehrotra
Sales Manager, Adobe
Systems India Private Ltd

“Providing support to customers is quintessential for businesses. Now-a-days, having a toll-free number is a trend; every company has one. Besides, customers expect support to be free of cost, so it makes more sense to have a toll-free number. Most customers use our products at work and not every employee has STD facility on their phone. So, in order to make it convenient for such customers to reach us, it makes sense to have a toll-free number which can be accessed from anywhere.

“However, we provide only a basic level of support at the toll-free number. Higher-end support is also given, but it is charged. We have two toll-free numbers—calls are routed to a call centre in the Philippines. Apart from the toll-free numbers, customers can also reach us through e-mail, all of which are answered within 24 hours. Additionally, we also provide online support.”



Ruchika Batra
General Manager,
Corporate
Communications, Samsung
India

“We provide a single toll-free number that caters to the entire country. Customers can seek support for consumer electronics, home appliances, IT and telecom-related queries. We have a dedicated team that answers calls routed to our call centre.

“The queries are varied and deal with installations, technical issues, product features, services or demonstration requests. Basically, customer calls are divided into three tiers—the first handles queries related to product features and general inquiries; the second comprises technicians who handle queries that could not be answered by the first tier, and finally, the third comprises managerial level individuals who may handle queries that are not resolved by the first two tiers.

“We believe in servicing customers at all times. Every year, we conduct an annual free service camp where customers can come and seek support. It is during this time that our call centre receives the maximum number of calls.”

THE WAY TO BE



M Vinayagamurthy
Country Manager,
Consumer Support,
Hewlett Packard

“Yes, at HP, we do have a toll-free number for customers. There are different phone numbers for different business segments, such as, pre- and post-sales support for the consumer, and commercial and enterprise customers. Pre-sales queries are largely related to price, specifications, availability, taxes and warranty. Post-sales queries are about product usage. But the number is bound by timings. For instance, the toll-free number for consumers is six days a week from 9 am to 9 pm, but callers can reach the toll-free number for the commercial call centre five days a week from 9 am to 5 pm, in accordance with the timings of corporate customers.

“Some calls are routed to the call centre while others are handled by professionals. Our call centre executives are well-trained and undergo rigorous training on product, technical specifications and other details. They are also constantly updated on the new models we introduce.

“It’s beneficial for businesses to have toll-free numbers—it’s certainly the fastest way a customer can reach HP. The caller doesn’t pay for the call. Moreover, it’s cost-effective for us, as we can handle a large volume of queries efficiently. Toll-free numbers can offer instant solutions to issues.”



Alok Bharadwaj
VP, Canon India Private
Limited

“We have set up a national call centre facility to provide pre- and post-sales support to customers. It’s extremely convenient for customers as they can call that number from any part of the country and need to only pay local call charges. The call centre is a single point of contact for Canon’s customers and plays a critical role in driving business growth and customer satisfaction.

“We respond to each and every customer query without exception. We also have a feedback mechanism wherein we try to see how satisfactorily the customer’s problem was resolved.

“Customer Delight is Canon’s theme for this year. For instance, for our copier customers we have launched 24 x 7 service facility for service support. This type of facility is well appreciated in the changing business environment where working hours differ from the conventional 9 to 5 routine.”

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134 Robot Races



148 Return My Video

Digital Leisure

Technology Beyond Work

Touched By Tech

Agri-loans Made *Asan*

The installation of ATMs in rural Andhra Pradesh has made the disbursing and accessing of loans easier for the native tobacco farmers

Renuka Rane

Devarapalli, Koyyalagudem and Jangareddygudem are tongue twisters, and one look at the scenery around these villages would make you wonder if they could have any other claim to fame. They are located deep in the interiors of Andhra Pradesh, and are dotted with lush green tobacco fields. The Telugu-speaking inhabitants are, by and large, tobacco cultivators.

The villages act as hub points for tobacco trading. They actually constitute four auction platforms for tobacco under the Northern Light Soil (NLS) category of the agro-climatic zone in

Andhra Pradesh. The entire area has more than 6,000 farmers registered with the Tobacco Board, Ministry of Commerce, Government of India. Hundreds of these tobacco farmers can now claim to be ATM-savvy, courtesy ICICI Bank's Kisan Loan Card scheme. This, then, is their claim to fame...

ICICI's Eye For Progress

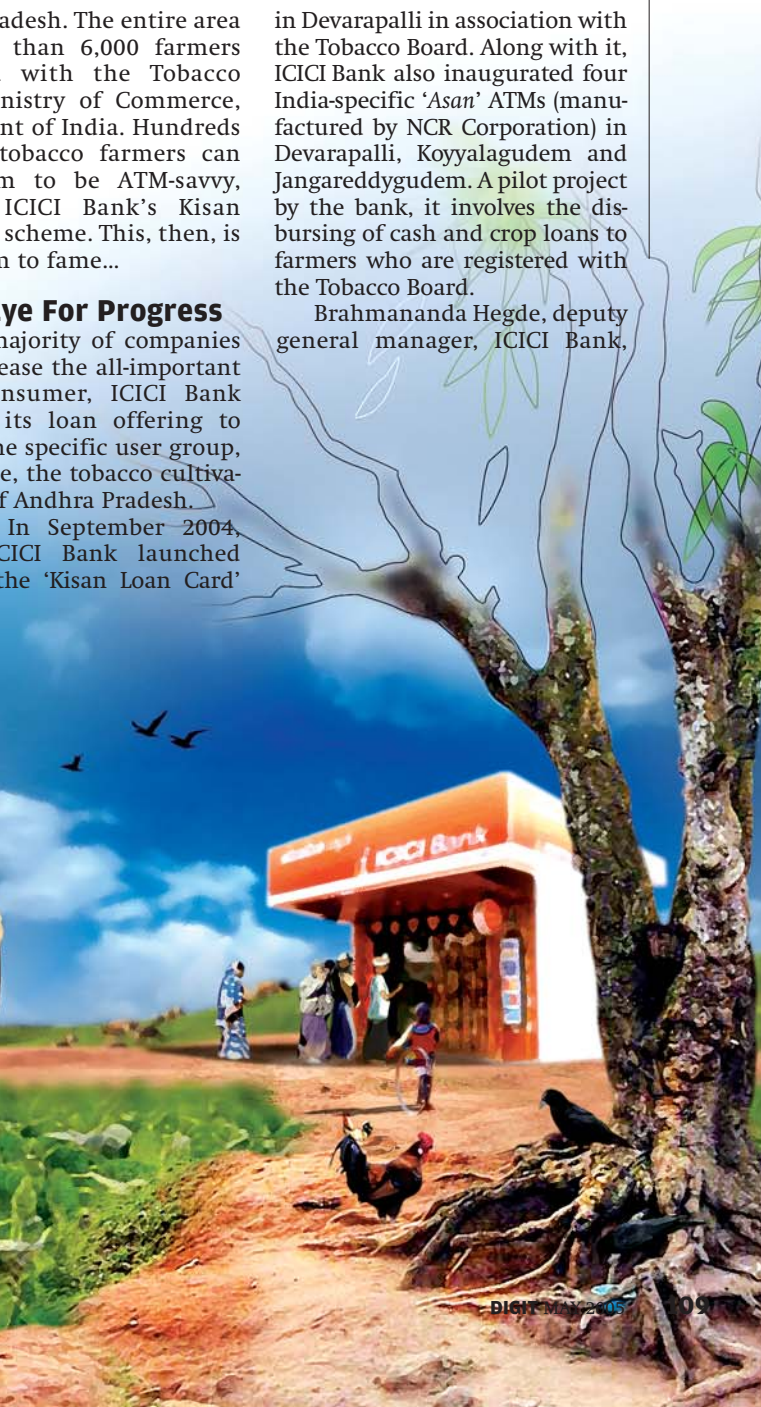
While a majority of companies try to appease the all-important global consumer, ICICI Bank modified its loan offering to cater to one specific user group, in this case, the tobacco cultivators of Andhra Pradesh.

In September 2004, ICICI Bank launched the 'Kisan Loan Card'

in Devarapalli in association with the Tobacco Board. Along with it, ICICI Bank also inaugurated four India-specific 'Asan' ATMs (manufactured by NCR Corporation) in Devarapalli, Koyyalagudem and Jangareddygudem. A pilot project by the bank, it involves the disbursing of cash and crop loans to farmers who are registered with the Tobacco Board.

Brahmananda Hegde, deputy general manager, ICICI Bank,

Photograph: Jiten Gandhi
Imaging: Binesh Sreedharan



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says, "We installed four innovative, low-cost ATMs designed specifically in Andhra Pradesh. This has protected our investment in rural areas, which have lower transaction volumes."

The Kisan Loan Card

Using the Kisan Loan Card, the tobacco farmers in Andhra Pradesh were able to avail of loans using an electronic card with easy access to withdrawal of cash through ATMs.

Of the 2,200 applicants for the Kisan Loan Card till date, 1,763 farmers who own 2,066 tobacco barns—30 per cent of all barns in the NLS area—are using the loan card.

A bank account that allows ATM use is increasingly becoming a preferred option with users. The tobacco farmers need only have a loan account with ICICI Bank to get ATM access.

In addition to the cash loan through the card, farmers can also receive crop loans to procure fertilisers, seeds, pesticides, and diesel, among other agricultural supplies.

Hegde adds, "The *Asan* ATMs give farmers access to money 24 hours a day through cash withdrawals as against withdrawing from the local brick-and-mortar setups, and reduce third-party involvement. Through *Asan*, we



The *Asan* ATMs give farmers 24-hour access to cash withdrawals, and reduce third party involvement

Brahmananda Hegde
Deputy General Manager,
ICICI Bank

can extend self-service banking to rural masses *sans* the huge operational costs, the benefit of which can be given to farmers in the forms of subsidised interest rates."

Why NCR?

Deepak Chandnani, managing director, NCR India, says, "NCR India spoke to various banks about their needs before beginning their India-specific projects. We carried out a survey of ATM users through the Industrial Design Centre of IIT-Mumbai. *Asan* is a result of the work done by the NCR R&D teams abroad and in India with IIT-Mumbai."

As a matter of fact, NCR was named the winner in the Self-Service category of The Banker Technology Awards 2004 (instituted by the UK-based finance publication *The Banker*) for its EasyPoint 57i machine, the one deployed in Andhra Pradesh as *Asan*.

Easy Does It!

Asan has a physical appearance and user interface designed to appeal to Indian consumers. A rugged machine, *Asan* provides convenience shelves—something we would like to see in our urban ATMs.

It supports wireless connectivity through GPRS and CDMA, suitable for areas with inadequate telecommunications. *Asan's* enhanced dust filtration mechanism facilitates deployment in non-air-conditioned areas.

Moreover, *Asan's* NCR Intelligent Power Management (NIPM) system, comes with an integrated UPS, which ensures the ATM completes an ongoing transaction before shutting down in case of a power failure.

Loan Dilemma No More

S Karthikeyan, manager, Agri business, ICICI Bank, has been associated with the Kisan Loan Card project since its inception, and has interacted with farmers on field. He says, "Earlier, land or other assets had to be mortgaged to procure loans through banks; however, to get the Kisan Loan Card, farmers don't have to make any mortgage payments at all.

"This eliminates mortgage-related documentation and saves time and effort for both

parties. While other banks charge a slab-wise interest rate, ICICI charges a flat rate of seven per cent simple interest per annum, irrespective of the amount of loan."

Karthikeyan continues, "Five acres of cultivated tobacco equals one barn. Under the Kisan Loan card scheme, the scale of finance is fixed at Rs one lakh per barn of tobacco owned by the farmer. So, even if a farmer has half a barn, he is assured of a loan of Rs 50,000."

In rural banks, loans are distributed at the discretion of the bank manager, and a specified amount must be withdrawn at one go. In contrast, with the Kisan Loan Card, farmers can withdraw the amount they need periodically through *Asan*.

Easy Get, Easy Repay

While disbursing of a loan is made easy through *Asan*, repaying it, too, has been made easier. Farmers repay the loan using the cash flow generated through the sale of cultivated tobacco.

Karthikeyan explains further, "Tobacco being a regulated crop, the final produce can be sold only by auction. For instance, the FCV (Flue Cured Virginia) variety can only be sold by the auctioneer—the Tobacco Board—through an open auction.

"Altogether, one crop of the NLS FCV variety is sold in eight instalments to various buyers including ITC Limited, Godfrey Philips, Transcontinental and other local traders who export most of the tobacco. They pay the Tobacco board, which pays ICICI, which in turn clears part of the debt and remits the remaining amount to the farmer," adds Karthikeyan.

Promise For The Future

This transparency in operation acts towards building trust and encourages other tobacco farmers to take advantage of the scheme. Whether farmers want to buy a new farm or bore a well—the low cost loans and easy availability of credit suits their needs perfectly.

By leveraging technology, this innovative banking solution of disbursing credit will, in all probability, eliminate any vestiges of the Shylock way of lending money in rural India. ☐

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The *Asan* ATM takes up less space than conventional ATMs, and also has convenience shelves



Imaging Jayan Narayan, Shyam Shriram, Binesh Sreedharan
Photograph Mexy Xavier
Model Scherezade Shroff, Elite Model Management



The Rhythm Divine

Watching movies or listening to music is no fun without a good set of speakers to complete the experience. So listen up!

Believe Everything You Hear!



A new breed of speakers out there is bringing out the audiophile in every one of us. Which one will *you* buy?

Varun Dubey

Hot: “5.1”. Not: “300 W PMPO!” Gone are the days when the typical home or personal sound setup consisted of a home-made Videocon or Philips mini stereo system. Also gone are the days when we were satisfied with the sound that those systems delivered. We want—in fact, demand—good speakers these days.

For a wholesome aural experience when listening to music, playing a DVD or screeching off the start line when playing *NFS Underground2*, you need a sound system that does not just drum out the beats, but enhances the listening experience by putting you smack in the middle of the action!

The problem, of course, is that there’s such a range out there—and they are all good—that apart from word of mouth, we have very little to go by when we decide to get a good speaker set. Hence this comparison.

Read on and find out which one of these aural delights will satisfy your craving for the ultimate audio experience!

A Nomenclature Primer

First off, what does ‘2.1’ or ‘4.1’ mean? This nomenclature denotes the number of satellites and subwoofers. So in a 4.1, you would have four satellite speakers and one subwoofer. Similarly, in a 5.1, you would have five satellites—three in front of you and two behind you—along with a subwoofer.

Two’s Company (2.1)

Because the prices of 5.1 and 4.1 speaker sets are tumbling, irrespective of VAT, we decided to compare only the absolute top of the line 2.1 sets available. So we had the Creative Mega Works THX 250D, Harman/Kardon Soundsticks II, JBL Creature II, and of course, the Bose Companion 3.

The feature list here wasn’t exactly exhaustive, with JBL and Harman/Kardon not even bothering to put in remotes. The Bose Companion 3 comes with a wired

circular remote that lets you adjust the volume and also mute the output. The Creative remote had the most features, it let us control volume and bass, and also had a power button.

Compared to the Bose set, the build quality of the Creative speakers was just OK—nothing you would hang in an art gallery, but sturdy. The JBL Creature II speakers looked like something straight out of *Independence Day*, and were built with material that looked rather cheap, especially the chrome plating.

The Harman/Kardons were made of glass. The construction quality was really good, and we thought the speakers were neat!

Looks and build quality apart, what really matters, of course, is how these babies perform—so we put them through their paces one by one.

Let The Tests Begin!

We started with our bass and treble tests, where the king and



Harman Kardon Soundsticks II (2.1)

How We Tested

Our test PC was an AMD Athlon 64 FX 53 with 1 GB of Corsair dual-channel DDR RAM. The sound card was a Creative Audigy 2 Platinum, and the hard disk, a 120 GB SATA.

We put the speakers through an exhaustive test process, including multiple music-specific tests, a Game Test, and of course, a Movie Test.

The Game Test consisted of running the d3_c17_12 demo—a benchmark—with all the audio settings set to maximum quality. For the DVD Movie Test, we used the *Fast and Furious* clip from our DTS sampler.

The DTS sampler disk is a widely-used disk for demonstrating home theatre system capabilities. It contains very high-quality songs and movie clips in 5.1 surround sound format.

On the music front, the process was divided into CD Audio, MP3 and DVD Audio. The CD and MP3 tests were further divided into English and Hindi, which were then divided into instrumental tracks and vocal-specific tracks.

The DVD audio was rated on bass, treble, and vocal reproduction based on a DTS sampler disk. The songs we used were Eric Clapton’s *Broken Hearted* and Sheila Nicholas’s *Faith*.

For the English Audio CD Test, the vocal-specific track we used was *I’m Ready* by Bryan Adams; this was chosen because there is very little electronic equipment used in the song, and was performed live. The instrumental track we used was *Sadness I* by Enigma, because of the variety of instruments the song uses.

In the Hindi Audio CD test, we used a rendition by Pandit Bhimsen Joshi for the vocals, and Pandit Ravi Shankar’s *Sitar* recital for the instrumental test.

In the MP3 test, the tests were performed just as above, with Dido’s *Don’t Leave Home* being used for the English vocals and *Sadness I* by Enigma for the instrumental music test.

In the Hindi Music test, we used the song *Mitwa* from *Lagaan*, and Strings’ *Anjaane Kyon* for the vocals and instrumental tests respectively. All MP3 files were encoded at 192 Kbps.

Apart from these, we also tested the speakers by playing specific frequency files, from as low a range as 30 Hz all the way to 15 KHz.

We then specifically tested the bass and treble strengths of the audio systems at various volume levels using THX-certified bass and treble files.

Jargon Buster

Root Mean Square (RMS): The sustained power in watts that an amplifier can output at any given time.
Peak Music Power Output (PMPO): The maximum power that an amplifier can output over a short period of time.
Frequency Response: The range of frequencies that the device is set to operate within.

Dolby Digital 5.1 (Dolby AC-3): Developed by Dolby, this system has five discrete sound channels in addition to Low Frequency Effects (LFE) that are directed to the subwoofer.

Dolby Pro Logic: An older standard, this packs in information for a centre and surround channel in the regular stereo channel. Essentially, there are no discrete left and right channels for the rear or surround speakers.

Dolby Pro Logic II: Audio encoded with Pro Logic II carries five channels of sound in a traditional two-channel stereo audio signal, which is then decoded back to five speakers using a Dolby Surround Pro Logic II decoder. This technology can be used on any console that does not support Dolby Digital 5.1. The advantages of using it in

game applications include minimal latency, full frequency range, compatibility with existing cables, and backwards compatibility with mono, stereo and legacy Dolby Surround Pro Logic equipment.

DTS: Short for Digital Theatre Systems, this is a standard invented by Steven Spielberg, and made its debut in *Jurassic Park*. It uses a sampling frequency of 96 KHz with 24 bits allocated to each of the six channels. Collector's edition DVD movies normally feature two soundtracks featuring both Dolby 5.1, and DTS.

Dolby Digital EX and DTS ES: These are comparatively new standards that add an additional channel—the rear centre channel—and is implemented in 6.1 speakers. Both standards implement the rear channel in a similar way. For Dolby Digital EX, a special Dolby Pro Logic decoder is added to the surround channels, creating a rear centre channel. This decoding method first came to light with the theatrical release of *Star Wars Episode 1*. For DTS ES, an additional rear centre channel is supplemented to the two surround channels.

Dolby Pro Logic IIx: This is a spanking-new technology developed by Dolby

Laboratories and is the first and only technology to process native stereo or 5.1 signals into 6.1 or 7.1 channel output. Different modes such as Movie, Music and Game are available with this technology, with the Music mode featuring additional user controls such as Dolby centre width, Dolby panorama, and Dolby dimension.

THX: This is an abbreviation for 'Tomlinson Holman's eXperiment'. It's not a surround sound standard, but a seal of approval that is granted to audio equipment and theatres that meet its standards. This standard is further divided into THX Select (for installations up to 2000 cubic feet) and THX Ultra (for between 2000 and 3000 cubic feet).

S/PDIF: Sony/Philips Digital Interface; a standard audio file transfer format. Developed jointly by Sony and Philips corporations, S/PDIF allows the transfer of digital audio signals from one device to another without having to be converted first to an analogue format. Maintaining the viability of a digital signal prevents the quality of the signal from degrading when it is converted to analogue.

emperor was the Bose set—you really need to hear them to believe it. The speakers are downright tiny, but the depth and punch of the bass simply blew us away! No matter what file or what frequency we threw at it, the speakers just stood there smugly and played it with absolute perfection! There wasn't even a hint of distortion at even the highest volumes, a feat that even our high-end 5.1 systems could not manage.

The Harman/Kardon (H/K) set did the worst in these tests, and due to their peculiar design, the bass started sounding a bit raspy if we increased the volume beyond 50 per cent. The only other speaker that did commendably well here was the Creative Megaworks THX. It could produce clean distortion-free bass at nearly 80 per cent of the volume level.

We then ran our *Half-Life 2* game test and yet again, the Bose came out tops with absolutely unbelievable clarity. We could hear every bombshell exploding, and each bullet being fired—but what really set this speaker system apart was another unmatched feat: despite all the chaos that was happen-

ing, we could distinctly hear everything that was being spoken in the game. Each and every syllable!

The JBL and H/K tied for second spot, and the Creative did rather badly—we heard a lot of in-game distortion, and most dialogues were lost. As expected,



Bose Companion 3 (2.1)

the Bose beat the rest comfortably in the movie test, and *The Fast and the Furious* came alive with the car chases, gun shots and what not!

This time, the JBL marginally edged out the others for second

spot, with the Creative third and the H/K a distant fourth.

We couldn't wait to get to our music tests. We were in for a shock, though—the Bose refused to live up to our expectations, especially in the Audio CD instrumental track. Sure, it was still one of the best speakers, but at high volumes, the sound was getting a bit too tinny for our tastes, and for the first time, we felt the satellites weren't complementing the wonderful subwoofer (Acousti-mass, as Bose calls it).

The Creative and the Bose tied for top spot here, with JBL second and the H/K a distant third.

In the vocals test, however, both Hindi and English, using the audio CD, MP3s or the DVD, the clarity of the Bose was unmatched, and it decimated the opposition with ease. JBL came in second and Creative third, while the H/K brought up the rear.

And The Winner Is...

This was quite simply a fight for second place. The Bose was the outright winner, with the JBL Creature II coming in second.

If you are a performance junkie or an audiophile, and if money is no object, you can't do any better than the Bose.

But, for those on budgets who want excellent value for money, and don't really care if their speakers look like they're manufactured on Venus, buy the JBL Creature II. The set costs Rs 6500—just about a third of the price of the Bose.

Quadraphonic Sound (4.1)

This category is for people who want surround sound, which is, of course, not possible with a 2.1 system. The products we tested here were again the premium sets from Altec Lansing—the 641 and the AVS 500B—and the Creative Inspire 4400, as well as the Cyber Acoustic CA4100.

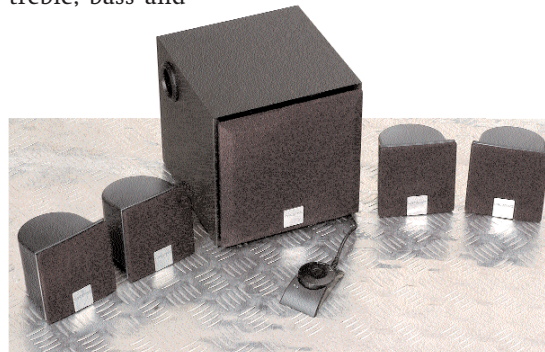
Straight out of the box, the speakers were beginning to look impressive, until we took out the Altec Lansing AVS 500B. This set was so unbearably bad-looking that we wanted to drop it—from the test, that is! The build quality was just abysmal—the rear of the woofer looks like it is made of plywood!

The speaker didn't perform any better than it looked either, and this was a shocker, as Altec Lansing is generally known for

high-quality products. The other Altec Lansing, the 641, however, looked as sturdy as a tank.

The Creative speakers also had decent build quality, and the Cyber Acoustic set was just plain ordinary. But the Altec Lansing 641 was simply in a league of its own!

In terms of features, none of these had Digital Input, SPDIF or coaxial inputs. Only the Creative and the Altec Lansing 641 came with remotes—both wired. The Altec Lansing 641 remote was the most comprehensive, with controls for surround, treble, bass and



Creative Inspire 4400 (4.1)

volume. The Creative only offered bass and volume.

Sounding Them Out!

As always, we started out with our bass and treble power tests. The Altec Lansing 641 aced them. Housing dual drivers in its massive woofer case, this speaker set decimated the opposition. It has a massive 109-watt subwoofer, as compared to the meagre 14-watt and 17-watt ones of the Altec Lansing AVS 500B, the Creative Inspire 4400, and the Cyber Acoustic CA4100.

The Altec Lansing 641 topped all our bass and treble tests, followed by the Creative Inspire, with the Altec Lansing AVS 500B coming in third and the Cyber Acoustics last.

In our DVD audio tests, the Altec Lansing 641 was again in a league of its own, scoring nearly twice as much as the nearest competitor, the Creative Inspire 4400.

The Cyber Acoustic comfortably beat the AVS500B in all DVD audio tests except for the vocals, where Eric Clapton sounded flat and hollow. This trend was replicated in all our music tests. The 641 was miles ahead, and left the Creative Inspire 4400 with the title 'best of the rest'.

The speaker that shone somewhat here was the Cyber Acoustic CA4100. It managed to equal or beat the Altec Lansing AVS 500B in every music test. The voice clarity of the Altec Lansing 641 was simply outstanding, with every tremor in Dido's voice being reproduced with aplomb.

What we really liked about the Altec Lansing 641 was that even at high volumes, the speaker never sounded like it was going beyond its capabilities. To be fair, though, it did succumb at the maximum volume level.

We then popped in our DTS sampler disk and ran our movie test. With the 641, we could hear every groan and creak of the cars, every tyre squeal and every rev of the engine as they raced along the massive truck. The Creative, with its good bass reproduction and clarity sounded good too, but was no match for the Altec Lansing 641.

The Winner Is...

Despite significant weightage being given to price, we still had to concede that the Altec Lansing 641 was the clear winner. It

How Speakers Work

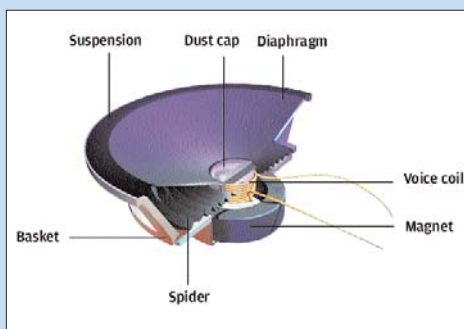
To understand how speakers work, you need to first understand how sound works. At the very basic level, an object produces sound by vibrating the air particles around it. These in turn vibrate those next to them, and so on, until the sound reaches you.

The speaker translates electrical signals into sound by creating the requisite vibrations. Depending on the accuracy of the vibrations that are produced, we classify the speakers as good or bad!

The sound from a speaker is produced using one or more drivers. The driver produces sound by vibrating a diaphragm.

The diaphragm, which is conical in shape, can be made up of plastic, metal, and even paper! In fact, you can make basic (but bad-sounding) speakers from everyday chart paper!

The narrow end of the diaphragm is then connected to something called the voice coil. This coil is then placed in the magnetic field of a permanent magnet.



When you pass a current through this coil, it turns into an electric magnet, and will have the properties of a regular magnet—but unlike a regular magnet, on reversing the flow of current, the polarity of the magnet changes.

Now when we alternate the current flow in the coil, it keeps changing the magnetic forces between the coil and the permanent magnet. This moves the coil back and forth—due to attraction and repulsion—and moves the diaphragm along with it.

This movement of the speaker cone vibrates the air around it leading to sound production.

has excellent bass reproduction and extremely good treble. The clarity is unmatched in this class, and if you have the dough, this is the way to go! The dark horse here was the Cyber Acoustic CA4100.

Compared to the 641, it was quite simply outclassed, but you must also remember that for the price of the 641, you can get a



Altec Lansing 641 (4.1)

really good 5.1! So to be fair to the Cyber Acoustic, it did a very commendable job for the right price, to come in second.

The Creative, on the other hand, paled in comparison to the Altec Lansing, and was also quite clearly beaten by the Cyber Acoustic in terms of price versus performance. But it is still a fairly good buy at Rs 3,290—especially when compared to the 641's price tag of Rs 20,000!

The Real Thing: 5.1

If you are positively appalled at the notion of pseudo-surround at 4.1, and will settle for nothing but the real thing, then 5.1 systems are for you! We sounded out a whopping 20 systems in this category.

Out Of The Box

This was the category where we expected to see speakers crammed with features and to be of top-notch quality, both in terms of build quality as well as sound reproduction, and most manufacturers did come through.

Almost all the speakers lacked multiple input types, and mostly came with the regular 5.1 input along with auxiliary and stereo inputs. Very few had digital inputs, whether optical or coaxial, except for the Altec Lansing BS 3151R, which had a digital DIN. None of the speakers had S/PDIF input.

Almost all these speakers came with a remote control, either wired or wireless; the exceptions were the Altec Lansing 251, Jazz and Mercury. None of the speakers came with an inbuilt FM tuner, either; again, this could have been a useful addition.

The process of setting up the speakers was more or less identical with all the brands, except for the Logitech and Philips speakers, which used colour-coded wires making installation even easier.

The other type of speakers, in terms of setup, came with raw wires and clamps—no plugs, nothing. You need to open the clamp, and put in the wires with care so that the clamp and connector is actually touching the metal inside and not the wire insulation.

But actually, wires of this type are better than the ones provided by Philips or Logitech, since the sound quality of speakers is very much dependent on the wires (they carry the sound, remember?). It can sometimes make sense to go for a higher quality wire than the one provided, and thus enhance the listening experience.

An additional benefit is that if you need to extend the wire or replace a broken one, it is far easier to do it with this kind of wire.

The weirdest systems to set up were the Mercury systems. On connecting and calibrating the systems, we realised that the colour coding at the back of the subwoofer was mixed up, so we spent some agonising minutes trying to figure out which wire went where—a wholly unnecessary exercise, since colour coding is supposed to make the task easier!

We got very varied designs in terms of speakers. The snazziest looking were the Artis S7100. These tall, slim speakers with glass bases are what you put in your house if you are looking for elegance and class.

The Creatives looked rather plain in comparison to most of the others, and continued to carry their usual design. The Logitech Z5300 looked to be on track with Logitech's design

1 col Ad

Creative 6.1 6600

The lone ranger in the 6.1 category, the speaker has a very decent set of features, though we do wish it had a few more controls on the remote, akin to the Logitech Z5300, which lets you control everything you can think of!

The setup was fairly straightforward (you start feeling that way after installing and un-installing 25 odd speaker systems!). The bass was trademark creative-the thumping of bomb explosions will have you running for cover. In fact, the bass is so powerful that it made CDs and other assorted items lying on our desks vibrate! The overall audio experience of these speakers was extremely impressive, though not quite exceptional.

The movie surround experience and sound clarity was really good, and when watching a clip where

glass shatters, we could make out where every little piece of shattered glass fell.

In the music department, these speakers gave us really good results so long as there were only a few instruments and a little electronic mixing, but once we started running the Enigma songs, we found these speakers to be slightly low in clarity and individual sound reproduction. Also, the speakers had trouble reproducing the lower frequencies. The low frequency reproduction was better at lower volumes, but then you want your music loud, don't you?

We don't mean to imply that these speakers are bad, but we are saying that they could have been better. Then again, for just Rs 7,500, they are a steal for those who want a budgeted 6.1 audio experience.

ideology: make it look sleek, futuristic and sexy as hell!

On opening the Artis X10 box, we were greeted with some really sturdy and top-quality speakers. We were really impressed with the quality metal stands and the woofer. The design, however, seemed to be inspired by Bose.

An interesting entry was the Jazz mini home theatre. This is a tiny system. It isn't fair to compare this system with the biggies we had, but even by itself, the sound quality was pretty poor, and got extremely tinny even at mid-volume levels. We didn't have any great expectations from the extremely small bass unit, and as it turned out, it produced less bass than the satellites did!

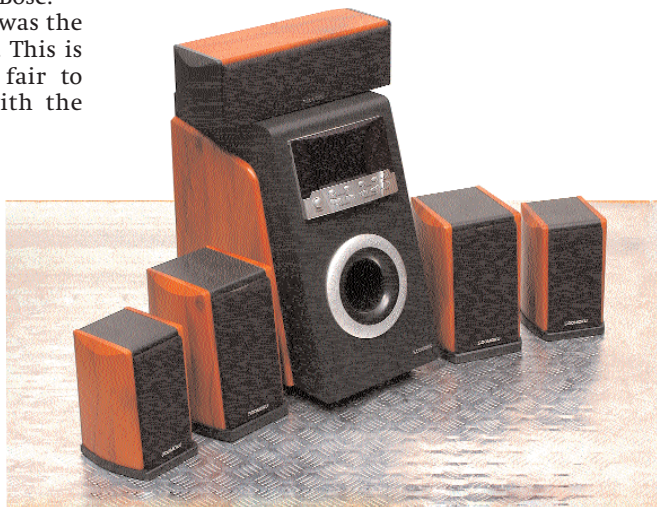
Another really jazzy looking system was the Soomoku 5.1. The satellites and the woofer were made of shining brown wood, but the woofer had a rather cheap-looking pseudo-metallic finish. The woofer had a nice LCD for various operations, but made the entire system look a little too loud.

We also had a set of Hyundai speakers. One look at these and we knew that Hyundai kept compactness only to the Santro (Xing or otherwise). Put together, these huge speakers

could probably measure up to a Hyundai Santro!

Put Your Money Where The Sound Is!

The test process used for the 5.1 systems was exactly the same as for the previous systems. As



Soomoku 5.1 (5.1)

usual, we started with our bass tests, and plugged in the Creative 5.1 system first.

This was the single most devastating thing we could have done for the other speakers, because there was simply no match for the depth and punch of the Creative 5.1 MegaWorks.

The second in this category was the Philips A 3.610, followed closely by the Artis X10. The

main reason that the Artis X10 lost out was that at high volumes—beyond 90 per cent—there was extreme distortion in the bass.

The Creative Inspire 5200 came in a commendable fourth, considering it costs just a third of the abovementioned speakers.

These results were, however, not entirely replicated in our individual frequency tests. The Artis X10 edged out everybody else in the 30 Hz test, with the Philips A3.610 a close second, followed by the Creative MegaWorks.

In the 50 Hz test, Philips was head and shoulders above the rest, with the MegaWorks coming in second, followed by the X10. It kept rotating back and forth between these speakers for the remaining frequencies, but the fight was mostly between the Artis X10 and the Creative Mega-works 5.1 THX.

We then popped in our DTS sampler disk and heard Eric Clapton and Sheila Nicholas crooning their hearts out.

The Altec Lansing BS3151R thrashed almost all the other speakers comfortably, and beat everyone to the top slot. The sound from this speaker set was extremely impressive considering the size and price.

The Philips 3.610 tied for the second slot with the Creative MegaWorks 5.1.

Both provided excellent blend of bass depth and vocals. At no time did we feel that the bass was overpowering the satellite sound or that the bass was too timid.

In the case of the MegaWorks, it seemed that the bass had just no limits! It went on without too much trouble at higher and higher volumes, and the Philips 3.610 pretty much kept up all the way, until both the speakers' satellites began to crackle slightly.

The third place was jointly held by the Creative PC works LX520 and the Soomoku 5.1.

We found that at higher volumes, the Soomoku's bass tended to be slightly weak, whereas in the Creative PC Works, the bass gave up when the volume was turned all the way up. The loser here, and by a fairly large margin, was the Artis X10. It was comprehensively beaten by all the above speakers, as well as by the Creative Inspire 5200.

The rear in this test was brought up by—apart from the Jazz mini home theatre—the Mercury HT 5800, which came very close to the performance of Artis S7100—the slim, elegant and expensive-looking speakers. “Never judge a book by its cover” never sounded truer!



Artis X10 (5.1)

In our audio CD tests, however, the Artis X10 fought back—and with gusto! It comfortably beat all the other speakers or tied with them for the first spot, except for in the Hindi Instrumental Audio CD test, where, surprisingly, it lost out in a big way to the Hyundai, Altec Lansing BS3151R and Creative Inspire 5200. As a matter of fact, it came in fourth, after the second-placed Creative MegaWorks and Soomoku 5.1 systems.

We then came to our DVD movie test. This was the first test where we were going to hear the sound in real 5.1 surround, so we fell over each other to get the best seats!

Here, the Artis X10 was not alone at the top spot; the Creative Inspire 5200 tied with it and marginally beat the Creative 5.1 MegaWorks. The Philips A3.610 was slightly disappointing in this test. We found significant distortion at even mid-volume levels.

We were really taken aback by the sheer clarity of sound reproduction done by the X10. In the clip, there is a scene where a guy puts his helmet on the car-boot, while the car is motion and is surrounded by four other cars and a truck.

In all the other speakers, the thud of the helmet was mostly lost in the chaos

of sound all around, but not in the X10: it was faithfully and distinctly reproduced, without compromising on the bass punch we were getting from the revving truck engine. Really great stuff!

The Typhoon 5.1 Amplified System Pro was outstanding in this particular test, and stood a proud third. Soomoku did quite well and stood fourth, but started to sound a bit too harsh in the scene where the car glass shatters.

The sound of broken glass falling on the ground wasn't reproduced with much clarity, either. The speaker that really lost in this round was the Creative PC Works LX520. There was so much distortion in this system that the only aspect of the scene it demonstrated was confusion and chaos!

The Altec Lansing BS 3151R's performance was just about average when compared to the other speakers. The slim Artis S7100 performed terribly. There was a huge amount of distortion, even at a volume level of less than half!

We now come to the last and final performance test—the *Half-Life 2* demo run.

The minute the demo starts, there is some music, and that in itself is a pretty good indicator of how good or bad the speaker will perform here. The minute we plugged in the Creative MegaWorks, we knew we were in for a treat.

The thump of the sound made everyone around sit up and take notice. The

speakers gave an excellent performance, and reproduced even the faintest sound in detail. The bomb explosions and the gunshots, the sound of the gun reloading... it was all so realistic, and it was all we could do to not look around us!

There was, however, a strange distorted sound during a specific part of the demo—it was very faint but noticeably there. Turning up the volume made it really clear, and that's where it lost out on in this test.

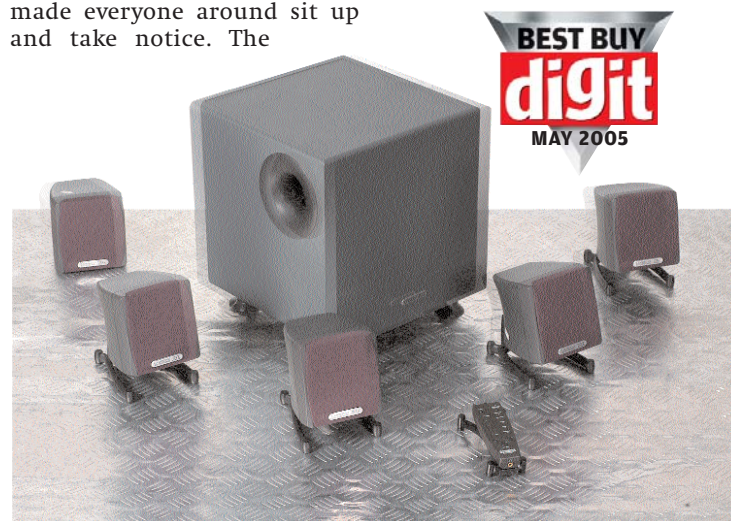
Once we unplugged the MegaWorks, we knew it for sure that we would not be getting a better performer in this test. We were wrong.

The minute we plugged in the Artis X10, the controlled bass and excellent treble reproduction indicated that we had to eat our words, and boy, did we feel happy about it!

We fired up the demo, and the sound was in every way comparable to the MegaWorks. What we were looking for was if it would get distorted at higher volumes, as was the case with the Creative MegaWorks.

The demo began, and we were highly impressed with the clarity of this system. The resemblance to the Bose was not just limited to design! This baby could perform and beat the best systems out there!

We turned the volume all the way up, and unfortunately were greeted with disappointing distortion. However, the distortion began at a marginally higher level than the Creative one, and hence it edged



Creative 5.1 Megaworks 550 THX (5.1)

Speakers

Scoreboard - Speaker Type	2.1				4.1			
	BRAND Model	BRAND Model	BRAND Model	BRAND Model	BRAND Model	BRAND Model	BRAND Model	BRAND Model
Features Total	18.15	16.69	12.04	14.93	22.52	17.46	16.23	17.46
Power Rating (RMS)								
Subwoofer	NA	150W	20W	27W	109W	14W	17W	NA
Center	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Satellites (Front/Rear)	NA	75W	10W	9W	32W	4.5W	6W	NA
Frequency response	NA	25Hz-20KHz	44Hz-20KHz	45 Hz-20KHz	27Hz-20KHz	70Hz-18KHz	40Hz-20KHz	35Hz-20KHz
Sub-Woofer	35.56x18x21.8	30.5x29x32.5	23.2(diam)x25.8	22.86x22.86x22.86	45.72x46.99x21.08	16.5x17.9x28.1	21.1x19.2x19.2	17x17x21.7
Satellites	6.1x6.35x8.89	14.3x10.8x16	5.08(diam)x25.4	7.62x7.62x7.62	21.59x13.71x12.7	11.4x10.15x12.7	8.7x9.5x9.5	7.5x5.5x16
Center	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Front in	✓	✓	✓	✓	✓	✓	✓	✓
Rear in	✗	✗	✓	✗	✓	✓	✓	✓
Center/Subwoofer	✗	✗	✓	✗	✓	✗	✗	✓
Digital DIN	✗	✗	✗	✗	✗	✗	✗	✗
Coaxial	✗	✓	✗	✗	✗	✗	✗	✗
Optical	✗	✗	✗	✗	✗	✗	✗	✗
Bass	✗	✓	✗	✓	✓	✓	✗	✗
Treble	✗	✓	✗	✓	✓	✗	✗	✗
Volume (+ / -)	✓	✓	✓	✓	✓	✓	✓	✓
Surround Effects	✗	✗	✗	✗	✓	✓	✗	✓
Others (List)	Feather touch mute	Mute, Power	None	None	Mode/Channel select	None	None	None
External Decoder	✗	✗	✗	✗	✗	✗	✗	✗
Power Adapter	✗	✗	✗	✗	✗	✗	✗	✗
Speaker Stands	✗	✓	✗	✗	✗	✗	✗	✗
Remote control (Wired / Wireless)	Wired	Wired	✗	✗	Wired	✗	Wired	✗
Batteries	✗	✗	✗	✗	✗	✗	✗	✗
Built-in FM Tuner (Y/N)	✗	✗	✗	✗	✗	✗	✗	✗
Listing of specifications	✓	✗	✓	✓	✓	✓	✓	✓
Quick setup guide	✓	✗	✓	✓	✓	✓	✓	✓
Troubleshooting	✓	✗	✗	✓	✓	✓	✓	✓
Speaker Wire clamps	0	0	0	0	3.375	0	0	0
The knobs/Buttons	4.375	3.125	3.25	3.25	0	2.875	2.75	3.25
The speaker veils	4.125	0	3.125	2.375	3.625	3	3.875	3.625
The Speaker stands	4.25	2.875	3.5	0	0	0	0	3.125
Overall build quality	4.25	3.125	3.75	2.625	3.625	2.5	3.75	3.375
Ease of Use	3.75	3.25	3.25	3.25	3.25	3.25	3.5	3.25
	35.28	27.73	24.35	27.18	35.48	15.77	22.93	20.12
In Game Sound: (Half life 2)	4.25	2.875	3	3	4.25	1.5	2	2.875
DVD Movie Test (Fast and Furious)	3.875	2.625	2	2.75	4.25	2.125	2.875	3
Instrumental Track	3.375	3.375	2.625	2.875	3.625	1.5	3.125	2.125
Vocal Specific Track	3.75	3.375	3.125	3	3.75	1.625	3	3
Instrumental Track	4	3.125	2.375	3.375	3.375	2.875	2.125	2
Vocal Specific Track	4.125	3.125	2.125	3.125	3.875	1.875	2.5	2.625
Instrumental Track	3.625	3.25	2.5	2.625	3.5	1.125	2.625	1.75
Vocal Specific Track	3.75	3	2.875	3	3.5	1.625	2.5	2.375
Instrumental Track	3.25	3.375	2.375	3.25	3.375	2.125	2.75	2.125
Vocal Specific Track	3.875	3.125	2.875	3.875	3.75	1.875	2.625	1.875
Treble	3.125	3.125	3.375	2.25	4	1.625	2.75	2.125
Vocals	4	2.875	3.25	2.5	3.875	2.75	2.375	2.375
Bass	3.5	3.5	2.75	2.625	4.25	1.625	2.75	2
30 Hz	4	3.125	1.875	4	3.125	0.875	1.875	1.125
50Hz	4.125	3.25	2	2.625	4.25	1	1.875	0.875
100Hz	4.5	3.625	2.5	2.75	4.25	1.125	1.5	1
250Hz	4.25	3.625	3.5	2.375	3.375	1.5	1.25	2.125
500Hz	4.375	3.375	3.125	3.625	3.25	2.375	2.375	2.125
1000Hz	4.375	3.125	2.875	3.375	3.625	2.375	2.625	2.375
1500Hz	4.125	3.375	3.5	4.125	3	1.625	3	2.625
Ultimate Bass Test	4.375	3.25	3	3.5	4.5	1.75	2.875	1.125
Ultimate Treble Test	3.75	3.125	3.125	3.125	4.125	1.5	3	2
Price Index	2.65	3.85	4.00	7.69	2.33	16.00	12.16	16.03
Price	18900	12990	12500	6500	17200	2500	3290	2495
	56.08	48.27	40.38	49.80	60.33	49.22	51.32	53.60

5.1

Altec Lansing 251 16.24	Altec Lansing BS 3151R 22.95	Artis S5500R 18.46	Artis Artis S7100 22.82	Artis X10 24.09	Creative 5.1 MgW 550 THX 21.56	Creative Inspire 5200 17.70	Creative Pc Works LX520 17.70	Cyber Acoustics CA-5001 11.89	Hyundai 5.1 16.80	Jazz J7915A 12.92
25W	20W	NA	30W	90W	150W	17W	16W	NA	50W	12W
7W	10W	NA	12W	28W	70W	6W	6W	NA	14W	4.5W
7W	5W	NA	12W	28W	70W	6W	6W	NA	14W	4.5W
35Hz-18Khz	40Hz-20KHz	20Hz-20KHz	20Hz-20KHz	25-20KHz	25Hz-20KHz	40Hz-20KHz	40Hz-20KHz	NA	NA	50Hz-20KHz
19.05x17.56x28.448	18x18.5x27.3	25x24.5x24.7	20.8x35.5x38	27.5x37.8x38	32.5x29x30.5	17x22x19	17x22x19	22.5x24.8x31	24.5x41x40	21.6x20.6x9.6
9.14x9.65x14.224	21x79x8.1	9.5x9.5x8.5	10x6x9.5	7.5x10x15.5	16x10.8x14.3	12.4x12.3x9.7	12.4x12.3x9.7	7.5x8.5x22	11x13x24.5	6.5x5.8x6.5
9.14x9.65x14.224	11.1x79x21	9.5x9.5x8.5	25x5.5x10.5	7.5x10x15.5	16x10.8x14.3	12.4x12.3x9.7	12.4x12.3x9.7	7.5x8.5x22	23x14.5x14.5	6.5x5.8x6.5
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗
✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
✗	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓
✗	✗	✗	✓	✓	✓	✗	✗	✗	✓	✗
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✗	✗	✗	✓	✗
Centre volume	Centre	Input Select, Centre, channel select mute, power	centre volume/ balance, mode select, Input select	centre volume/ balance, mode select, Input select	Mute,Power	None	None	None	None	None
✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓
✓	✓	(In built)	✓	✓	✓	✓	✓	(In built)	Wireless	(In built)
✗	Wireless	Wireless	Wireless	Wireless	Wired	Wired	wired	✗	✓	✗
NA	✓	✗	✓	✓	✗	✓	✓	✗	✗	NA
✓	✗	✗	✓	✗	✗	✗	✗	✗	✗	✗
✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓
NA	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓
2.5	0	2.875	3.125	3.25	0	0	0	0	2.5	3.625
2.5	3.75	0	2.75	3.875	3.25	4	4	2.875	3.5	0
2.375	3.5	2.875	2.875	2.75	3.625	2.5	2.5	2.5	4	1.625
3	3.5	0	3.375	4.375	3.125	3.5	3.5	0	0	0
3.25	4	2.5	3	4.5	3.375	3	3	2.75	4	2
3.25	3.25	3	3.5	3.5	3.5	3.5	3.5	3.25	3	3
22.27	30.50	19.23	22.41	38.06	38.29	34.73	29.59	24.17	32.06	9.66
2.375	2.5	1.875	3	4.375	4.125	3.75	3.25	2.375	3	1.375
2	3.25	2	2.375	4.25	4	4.25	2.75	2.625	3	1
2.25	3	1.375	1.25	3.75	3.5	3.375	3.5	2.375	3	0.25
2.25	2.5	1.625	1.5	3.75	3.5	3.5	3	2.125	3.5	0.625
2	3.75	1.875	2.375	3.25	3.5	3.75	2.75	2.625	3.75	1
2.25	4	1.375	2.125	3.375	3.125	3.125	3.25	2.875	3.5	1.125
1.875	3	1.25	2.375	4.375	3.75	3	3	2.875	3.25	0.875
1.875	3.75	1.875	1.875	4.25	3.625	3.375	3.75	2.875	3	0.875
7	2.75	1.875	1.75	3.25	3.25	3	3	2.625	3	0.875
2.375	3.5	2.625	2.625	3.875	3.125	3.125	3.25	3.125	3.25	1.125
1.75	4.5	2.625	1.75	3.5	4	3.5	3.5	1.5	2	1.5
2.625	4.5	2.125	2.625	3.375	3.75	3.5	4.25	1.875	3	1.25
2	4	2.25	2	3.25	4.25	4.125	3.5	3	3.5	0.375
1	1.25	1.875	1	3.25	3.125	2	1.25	1.125	2.75	0
1.5	1.5	1.5	1.25	3.5	3.75	2.625	1.5	1.375	3.75	0.25
3.5	1.75	1.125	1.375	3.625	3.75	3.125	1.75	1.75	3.75	0.875
2.5	2.25	1.375	1.5	3.875	3.75	3.625	1.75	2.125	4	0.375
3	2.75	1.625	1.5	4	3.75	3.75	2.5	3	4	2.125
4.5	3	2.125	2.125	3.875	4	3.375	2.5	3	4	2.125
2	2.75	1.625	3.125	3.125	3.875	3	2.75	2.625	4	0.25
1.625	2	2.375	1.75	3.75	4.5	2.875	2.75	1.875	3.5	1.125
1	3.75	2.125	3.375	3.375	3.875	3.375	2.75	2.875	3.25	0.875
8.00	5.80	8.00	5.33	2.35	1.95	8.02	8.71	8.01	3.65	16.06
5000	6900	5000	7500	17000	20490	4990	4590	4995	10950	2490
46.51	59.25	45.68	50.57	64.50	61.80	60.44	56.00	44.06	52.52	38.64

Scoreboard - Speakers								
Speaker Type	5.1							6.1
BRAND Model	Logitech 25300	Mercury HT5800R	Ozaki Nukez 5.1 channel	Philips A3.6.10	Philips A 5.600	Soomoku 5.1	Typhoon5.1 Amplified system Pro	Creative 6.1
Features Total	21.23	14.64	16.17	15.26	15.34	18.86	20.69	17.79
Power Rating (RMS)								
Subwoofer	100W	NA	50W	100W	50W	40W	30W	22W
Center	39W	NA	23W	20W	10W	15W	14W	20W
Satellites (Front/Rear)	35.25W	NA	13W	20W	10W	12W	14W	8W
Audio specifications								
Frequency response	35Hz-20KHz	NA	45-20KHz	40-20KHz	40-20KHz	NA	30Hz-25KHz	40Hz-20KHz
Physical Dimensions (LxDxH, in cm)								
Sub-Woofer	36.83x29.84x29.97	17x33x23.5	20x37x39	23.8x36.5x26.3	19.7x29.8x21.3	25x23.5x41	24.4x22.2x22.8	24.5 x 27.2 x 24.6
Satellites	8.89x9.5x20.32	10.4x10x11.2	9.8x23.4x10	9.5x7.5x18.5	8.5x8x9	11x10.5x19	15.5x12.5x20.5	8.8 x 10.1 x 16.2
Center	7.62x16.8x12.7	20.8x9.5x9.8	9.8x14.3x23.9	9.5x7.5x18.5	8.5x8x9	32x11.7x10	15.5x12.5x20.5	8.8 x 10.1 x 16.2
Connectors on Speaker Set (Analog)								
Front in	✓	✓	✓	✓	✓	✓	✓	✓
Rear in	✓	✓	✓	✓	✓	✓	✓	✓
Center/Subwoofer	✓	✓	✓	✓	✓	✓	✓	✓
Digital DIN	✗	✗	✗	✗	✗	✗	✗	✗
Connectors on Speaker Set (S/PDIF)								
Coaxial	✗	✗	✗	✗	✗	✗	✗	✗
Optical	✗	✗	✗	✗	✗	✗	✗	✗
Controls on speakers/Remote control								
Bass	✓	✓	✓	✗	✗	✓	✓	✓
Treble	✗	✗	✓	✗	✗	✓	✗	✗
Volume (+ / -)	✓	✓	✓	✓	✓	✓	✓	✓
Surround Effects	✓	✗	✗	✗	✗	✓	✓	✗
Others (List)	Mixer/Power	Input Select	None	None	None	None	Balance, input, center, mode, power, mute	None
Bundled Accessories								
External Decoder	✗	✗	✓	✗	✗	✗	✓	✗
Power Adapter	✓	✓	✓	Y	✓	✓	✓	✓
Speaker Stands	✓	✓	Wireless	(In built)	(In built)	✗	(In built)	✓
Remote control (Wired / Wireless)	Wired	Wireless	✗	✓	✓	✓	Wireless	Wired
Batteries	NA	Yes	✗	✗	✗	✗	✓	✗
Built-in FM Tuner (Y/N)	✗	✗	✓	✗	✗	✗	✗	✗
Manual & documentation (Y/N)								
Listing of specifications	✓	✗	✓	✓	✓	✓	✓	✓
Quick setup guide	✓	✗	✗	✓	✓	✓	✓	✓
Troubleshooting	✓	✗	3.5	✓	✓	✗	✓	✓
Build Quality								
Speaker Wire clamps	0	3.25	3.125	0	0	0	3.375	0
The knobs/Buttons	0	2.625	0	2.875	2.875	3.25	3.75	3
The speaker veils	4	3.125	2.5	2.5	2.5	3.125	3.875	2.5
The Speaker stands	4	2.125	2.375	2.75	3	0	3.125	3
Overall build quality	4	3.125	3.25	2.75	2.75	3.75	3.125	2.75
Ease of Use	4.5	3.25	3.25	3.5	3.5	3	3.5	3.5
Performance Total	30.93	21.36	30.33	35.04	22.99	35.03	25.76	33.67
In Game Sound: (Half life 2)	3.5	1.875	3.5	2.875	2.375	3.875	2.875	3.5
DVD Movie Test (Fast and Furious)	2.75	2	3.25	3.25	3.375	3.625	3.75	3.375
English Audio CD								
Instrumental Track	3	1.25	3.5	3.375	2.5	.5	3.125	3.125
Vocal Specific Track	2.5	1.625	2.875	3.125	2.75	3.125	2.875	3.375
Hindi Audio CD								
Instrumental Track	2.75	1.625	2.625	3.25	2.625	3.375	2.875	3.875
Vocal Specific Track	3	1.375	2.5	3.25	2.375	3.25	3	3.375
English MP3 Test								
Instrumental Track	3.25	1.25	2.875	3.75	2.375	3.25	2.375	3
Vocal Specific Track	3.75	1.5	2.375	3.625	2.375	2.625	2.375	3.625
Hindi MP3 Test								
Instrumental Track	2.75	1.875	2.625	3.25	2	2.875	3.125	3.5
Vocal Specific Track	3	2.625	3.125	3.125	2.375	2.75	3.375	3.625
DVD-Audio								
Treble	3	2.375	3.25	3.625	2.875	3.375	2.625	3.375
Vocals	3.25	1.625	2.625	4	2.5	4	3	3.875
Bass	3	2.875	3.375	4.375	3	3.875	3	4
Special frequency test files								
30 Hz	2.75	2.375	2.125	3.125	0.25	3.625	1.25	1.125
50Hz	2.75	2.625	2.375	4.375	0.75	3.625	1.5	1.875
100Hz	3.75	3.125	2.375	4.375	0.75	4.375	1.5	1.625
250Hz	3.25	3.125	2.625	3.75	0.875	3.5	1.25	3.375
500Hz	2.75	3.125	2.875	3.75	1.375	3.75	2.5	3.875
1000Hz	2.75	3.375	3	3.375	2.375	2.875	2.25	3.75
15000Hz	3.75	2.375	3	3.5	2.375	3.5	2	3.125
Power handling Test								
Ultimate Bass Test	3.75	3.125	3.25	4.375	1.125	3.625	1.125	4
Ultimate Treble Test	2.75	2.625	3.125	3.875	1.875	3.5	0.875	3.375
Price Index	2.96	5.97	7.02	3.08	5.06	5.93	8.89	5.34
Price	13500	6699	5700	13000	7900	6750	4500	7490
Grand Total	55.11	41.97	53.52	53.38	43.39	59.82	55.34	56.80

Contact Sheet		Speakers		
Brand	Company	Telephone	E-mail	Web site
Altec Lansing	Rashi Peripherals	022-28260258	navinderc@rptechindia.com	www.altec-lansing.com
Artis	Kunhar Peripherals Pvt Ltd	022-56345758	salesbom@kunhar.com	www.artis.co.in
Bose	Bose Corporation India LTD.	1600112673	customersupport@boseindia.com	www.boseindia.com
Creative	Creative Technology Ltd	98203 57718	india_getcreative@ctl.creative.com	www.creative.com
Cyber Acoustic	Arc-Max Technology Company	044-26440062	ca@arc-max.com	www.cyber-acoustic.com
Harman/Kardon	Gautam Agencies	020-25454270/71	sales@gautamagencies.com	www.harmankardon.com
Hyundai	Palesha Electronics Industries	020-26351752	palesha@vsnl.com	www.palesha.com
Jazz	Mediatech India	022-26361111	digit@mediatechindia.com	www.jazzspeakers.com
JBL	Gautam Agencies	020-25454270/71	sales@gautamagencies.com	www.jbl.com
Logitech	Logitech Electronic India P. Ltd.	022- 26571160	response@logitech.com	www.logitech.com
Mercury	Kobian India Ltd	080-25566626	mumbai@kobian.com	www.mercury.com
Ozaki	Rashi Peripherals	022-28260258	navinderc@rptechindia.com	www.ozaki.com.tw
Philips	Philips Sound Solutions	020-7124196	pss.sales.marketing@philips.com	www.philips.com
Soomoku	Palesha Electronics Industries	020-26351752	palesha@vsnl.com	www.palesha.com
Typhoon	Aditya Infotech Ltd	011-26223810	yogesh_dutta@adityagroup.com	www.anubisline.com

aside the MegaWorks model to take the top spot.

Once again, the Soomoku surprised us with its performance and stood a gallant third this time, beating its competitor—Creative Inspire 5200 by a hairsbreadth!

The other speaker system in this category that performed commendably was the Logitech Z5300 speaker. However, this system came with a rather weak woofer. There was no way it could match the bass of the Creative MegaWorks and the Artis X10.

The two Mercury speakers—the HT5800R and the HT6200 performed poorly. Apart from that, both the speakers systems had extremely flat sounds.

As a matter of fact, the sound was so terrible that it almost negated the spacing effect, which is supposed to be created by a 5.1 system.

It came as a surprise to us, when the Philips A3.610 speaker lost out in this test, and it was quite comfortably bettered by the huge Hyundai 5.1 speaker system.

The Speaker Superstar

The winner, although only by a slight margin, was the Artis X10, followed very closely by the Creative 5.1 MegaWorks 550 THX. Moreover, not only is the Artis X10 a slightly better performer, it is also Rs 3,000 cheaper than the Creative 5.1 MegaWorks 550 THX model.

The Artis X10 might not have led in each and every department, but was the most consistent performer, and so gets the Digit 'Best Buy Gold' award.

The 5.1 Creative MegaWorks 550 THX performed as brilliantly as ever, but eventually lost out due to its rather high price, and slight lack of clarity.

Apart from these two, an extremely worthy candidate that you could look at for a budget buy is the Creative Inspire 5200 or the Soomoku 5.1 home theatre.

In fact, both speakers were neck-to-neck in terms of performance. While the Soomoku had slightly more features, the Creative Inspire 5200 was significantly cheaper. ■

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Tune That TV

Surprisingly, TV Tuners haven't become as popular as they deserve to be. Here's the lowdown on what to buy and why

Jayesh Limaye

In the recently concluded India-Pakistan cricket series, cricket fever was at its pinnacle. You may think, "Wouldn't it be nice if I could capture and preserve those memorable moments (read: sixes, catches, wickets, or Afridi's superb annihilation of our bowling attack in the fifth ODI), so I could re-live the entire experience again?"

To add to your woes, that obsolete piece of hardware known as your VCR is no longer operational. Rejoice then, for it is that time of year again—time for the TV Tuner shootout.

TV tuners today have become so inexpensive and feature-packed that, by the time you are through reading this article, chances are you will have made up your mind to go and grab one that suits your needs.

This time around, we went looking for both internal and external TV tuners. External TV tuners were of two types—USB devices and set-top TV

boxes that are in-line gadgets that connect between the PC's analogue VGA-out and the VGA-in of your monitor.

Internal PCI TV Tuner Cards

This category is the most popular, mainly due to lower prices, good quality, features, and the fact that these cards sit inside the PC cabinet and don't occupy valuable space on your desktop.

We received 11 internal PCI TV Tuner cards. The companies that sent us cards included AVerMedia, Compro, Mercury, MSI, Pinnacle, PixelView and Tech-Com. MSI and Tech-Com were the newcomers this year.



PixelView's MediaCentre PlayTV@P3000

Features

We noticed a major shift in the manufacturers' choice of TV tuner chips this year. Last year, the Conexant (Brooktree) Bt8x8 chip dominated the TV tuner market. This year, the Philips 713x ranked high among most manufacturers.

All the cards came with bundled PVR software of some sort that supported at least MPEG-1 video capture. Time-shift was also supported by all the cards, with the exception of the Tech-Com Super TV SSD-TV-670.

Barring the Compro VideoMate TV Gold II, Pinnacle PCTV Stereo, MSI Mega TV Tuner card and the Tech-Com Super TV SSD-TV-670, all cards featured an FM radio tuner. The TV tuners based on the Philips SAA7130HL chip supported only mono TV audio. This really doesn't make a difference, since India does not have stereo cable TV signals.

The remote controllers that came with the TV tuners varied in size and functionality. Many came with remote controllers the size of a credit card. The Compro had a medium-sized remote controller, while the PixelView MediaCentre PlayTV@P3000's was big enough to club someone to death with, though it was definitely the most feature-rich of the lot—with exotic features such as zoom and DVD playback control.

How We Tested TV Tuners

We noted various features of the TV tuners, such as the chip, whether FM radio is supported, and whether the TV sound is stereo or mono. We noted the number of input/output ports, and higher points were awarded when a higher number of ports were featured.

We also rated the bundled accessories such as remote controller, cables and software packaging. Where PVR software was provided, its functionality, such as whether time-shifting was available, and whether MPEG-1/2/4 capture facility was provided was noted and rated accordingly. The ease of installation of the TV tuner was also noted and rated.

The test bench comprised an AMD Athlon 64 FX-53 processor on a MSI K8T Neo motherboard with 512 MB of Corsair DDR RAM running at 400 MHz and a 120 GB 7200 rpm Seagate Barracuda SATA/150 hard drive. The video card was a GeForce FX 5700LE, and the sound card was a Creative SoundBlaster Audigy 2 Platinum. We installed Windows XP SP1 and installed the necessary hotfixes. We then installed DirectX 9.0c and the latest drivers, and created a System Restore Point to get a reference point to which we could restore the system after testing each TV tuner.

This was done in order to avoid possible driver conflict issues, as many TV tuners that featured the same chip had drivers that consisted of similarly-named files and only different version numbers.

In the cable TV channel detection test, we deliberately created a cable TV point with a weak signal strength. This was done by introducing joints in the cable, which caused signal strengths to drop at each point. The TV viewing utility provided with the TV tuner was used to determine the number of channels that the TV tuner could detect.

After this, we rated the visual quality of the detected TV channels on a scale of 5. This was a subjective test, and we looked for artefacts and anomalies in different channels.

Next, we tested the TV tuners to capture content using both cable and S-Video as the input sources. We used VirtualDub 1.6.5 to capture content from the S-Video input in uncompressed raw AVI format (RGB-555) with PCM uncompressed audio.

We noted the number of frames dropped, and checked the quality of the captured content without any compression, made by either the hardware or software. We used VirtualDub, since it uses the minimum system resources.

We also used the TV tuners to capture regular cable content using the applications and software supplied by the manufacturers. This was done to check both, the quality of content, and also the real-world performance of the TV tuner. Any other issues, such as crashing of applications and drivers were also noted. In short, features, performance and pricing were considered to choose the winners.

Time Shifting

The telephone always rings at the wrong time, doesn't it? People only think of calling when you are in the shower or while you are watching your favourite show on the telly. When it comes to the shower, you're on your own, but you never need miss another minute of your favourite TV shows.

Wouldn't it be cool to be your own third umpire when watching a cricket match? No need to wait for the replay: just replay the last ball automatically on your own! Perhaps you would also love to skip or fast-forward advertisements?

All the above is easy with a TV tuner card. All you need to do is invest in a TV tuner card that offers time-shifting features. Previously, this was only possible using a set-top box such as the TiVo. However, today, PVR software is all you need.

So, how does it work? While you watch your favourite show the audio and video is saved to your hard disk in real-time. But this is

where the similarity between video capturing and time-shifting ends. Time-shifting lets you view the recorded content while the recording is being done. Thus, when you pause the video, the recording continues, and when you press play, the delayed video is played back.

However, the quality of the time-shifted video always seems to be inferior to live video. This quality depends on the video capture format selected in the capture settings of the PVR software. A better capture format such as MPEG-2 at DVD resolution would result in better quality, but would need a high-end system to run.

Also, the time duration for which a programme can be paused depends on the free space available on the hard drive. Time-shifting is critically dependent on processor speed and hard disk speed, but today, with even entry level PCs being shipped with sufficiently high processing power CPUs, this has become a non-issue.

All the TV tuners came with connecting cables. Some, such as the Tech-Com card, came with an S-video to S-video and a 3 to 1 AV cable in addition to the stereo cable, while the PixelView Media-Centre PlayTV@P3000 came with just a stereo cable. The software packages also varied; while many TV tuners came with just the drivers and no-nonsense PVR software, some, such as the Compro VideoMate Gold Plus II, came with Ulead's MovieFactory 2 SE and VideoStudio 2 SE DVD software.



Compro VideoMate PVR/FM

The MSI Mega TVTuner Card came with InterVideo WinCinema Suite—a great software package.

All the cards came with PVR software that had MPEG-1 and 2 capture capabilities, with the exception of Mercury—it could not capture to MPEG-2. Some

cards, such as the AVerMedia, PixelView PlayTV Pro 2 and Tech-Com, also supported MPEG-4 capturing.

As far as looks go, the Compro Videomate Gold II and Gold Plus II stand out from the crowd with their gold plating. The Pinnacle and MSI cards had sleek looking tuner units—the Pinnacle was the sleekest. This

is an advantage because a sleek form factor leaves more room for air circulation between adjacent cards and the cabinet on the whole.

Performance

Almost all the cards performed well. The ease of installation of the drivers and PVR were noted. We were very disappointed by the Mercury card, as we had a tough time installing the drivers and PVR software.

When we installed the Pinnacle PCTV Rave on our other test machine, it couldn't initialise properly after the driver installation, and hence refused to work. The device manager showed that it had a problem. You have to be careful when buying such a card.

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The PVR application bundled with the PixelView cards hogged system resources so much that they brought our test machine to a virtual standstill for a few minutes. The Pinnacle PVR application interface needs a face-lift, while the application provided by Mercury can be best described as vanilla.

In the channel detection test, all cards fared well except for the Pinnacle PCTV Rave, which detected a miserably low 27 channels, and the PixelView PlayTV Pro2, which detected just 54 out of the total 87 available channels.

The problem probably lies in the bundled PVR application, because when we tried to use a third party PVR application, we could detect a lot more channels with both cards.

After the channel detection part of the test was over, we observed the visual quality of the channels, and found that the Compro VideoMate PVR/FM had the best image quality, followed by its more expensive siblings—the Compro VideoMate Gold II and Gold Plus II.

A point to be noted here is that the TV tuner cards with the Philips SAA713xHL chip

offered a much better image quality than the ones featuring Conexant chips.

In the capture test, which determines the number of frames dropped. Here, the PixelView PlayTV Pro2 scored the lowest by dropping seven frames—the maximum number of frames dropped.

The Mercury TV tuner card dropped six frames, and came second last, but the Compro TV tuners that performed flawlessly, and never dropped a single frame.

A PCI TV tuner card has inherent downsides. The tuner unit is situated inside the PC cabinet, and hence, is prone to interference from various PC components, which effects quality.

When a tuner is at work, it heavily loads the PCI bus. Also, some motherboards might not have a spare PCI slot to accommodate the PCI TV tuner card, and those with laptops just cannot use one.

Mercury TV
Tuner Card

In such situations, using an external TV tuner is a good solution. Remember, external TV tuners are sub-divided into two categories: USB and set-top tuners—which use a loopback cable from the VGA-out of the display card to the unit and from the unit to the CRT. The *Digit Test* Centre received three TV tuners in each of these categories.

External USB TV Tuners

TV tuners of this type connect to the USB port of the PC. Due to the high data rate required for the transfer of information from the TV tuner to the PC, all the tuners of these type work on the USB 2.0 interface, which ideally supports a data throughput of 480 Mbps. AVerMedia, Tech-Com and Pinnacle sent us TV tuners of this type.

Features

All the tuners in this category had the necessary input/output ports. The Pinnacle PCTV MediaCenter came with just a single USB cable, whereas the others came with a few more cables.

The AVerMedia AVerTV USB 2.0 did not come with a remote, which is a must for any TV tuner. The

Scoreboard - TV Tuner

Internal PCI TV Tuners

MAY 2005				MAY 2005				
BRAND	AverMedia	Compro	Compro	Compro	Mercury	MSI	MSI	Pinnacle
Model	AverTV GO 007	VideoMate PVR/FM	VideoMate Gold II	VideoMate Gold Plus II	TV Tuner Card	Mega TV Tuner Card	TV@nywhere Master	PCTV Rave
Features	26.24	26.08	24.33	28.01	23.02	18.03	27.39	16.63
Type(Internal/External)	Internal PCI	Internal PCI	Internal PCI	Internal PCI	Internal PCI	Internal PCI	Internal PCI	Internal PCI
Tuner Type (TV/FM)	TV/FM	TV/FM	TV	TV/FM	TV/FM	TV	TV/FM	TV
TV Chip	Philips SAA7130HL	Philips SAA7130HL	Philips SAA7134HL	Philips SAA7134HL	Philips SAA7130HL	Conexant CX23881-19	Conexant CX23881-19	Philips SAA7134HL
Stereo or Mono TV Sound	Mono	Mono	Stereo	Stereo	Mono	Stereo	Stereo	Stereo
I/O ports	Coaxial In,Composite In, S-Video In, Audio In/Out	Coaxial In, Composite In, S-Video In, Audio In/Out	Coaxial In, Composite In, S-Video In, Audio In/Out	Coaxial In,Composite In, S-Video In, Audio In/Out	Coaxial In, Composite In, S-Video In, Audio In/Out	Coaxial In, Composite In, S-Video In, Audio In	Coaxial In, Composite In, S-Video In, Audio In/Out	Coaxial In, Composite In, S-Video In
Remote Control (Y/N)	✓	✓	✓	✓	✓	✗	✓	✗
No. of Buttons on Remote	34	32	32	32	24	NA	24	NA
Connecting cables provided	Stereo cable, FM aerial	Stereo cable, FM aerial	Stereo cable, FM aerial	Stereo cable, FM aerial	Stereo cable	Stereo cable, S-video to S-video	Stereo cable, S-video to S-video, FM aerial	Stereo cable
Software	Drivers, PVR Software	Drivers, PVR Software	Drivers, PVR Software, Ulead MovieStudio 2 SE	PVR Software, Ulead MovieFactory 2 SE & VideoStudio 7 SE DVD	Drivers, PVR Software	Drivers, PVR Software, InterVideo WinCinema suite	Drivers, PVR Software, InterVideo WinDVD Creator Plus	Drivers, PVR Software
PVR/Timeshift	✓/✓	✓/✓	✓/✓	✓/✓	✓/✓	✓/✓	✓/✓	✓/✓
MPEG1/MPEG2/MPEG4	✓/✓/✓	✓/✓/✗	✓/✓/✗	✓/✓/✗	✓/✗/✗	✓/✓/✗	✓/✓/✗	✓/✓/✗
Ease of installation (Scale of 5)	3	4	4	4	2.5	3.5	3.5	3
Performance	29.04	32.42	31.50	31.50	27.38	26.27	25.79	19.64
No. of TV channels detected (Out of 87)	86	84	87	87	85	75	77	27
Visual quality (Scale of 5)	3.5	4.25	3.75	3.75	3.25	3	3	3.25
Video capture Test (Frames dropped)	4	0	0	0	6	3	5	2
Price Index	13.72	20.29	13.72	11.73	27.00	13.72	13.72	13.54
Price (Rs)	2950	2950	2950	3450	1995	2950	2950	2990
Overall Score (Out of 100)	69.00	78.79	69.55	71.24	77.40	58.01	66.90	49.81

Pinnacle PCTV MediaCenter came with the most feature rich remote, and was comfortable to handle.

The build quality of the AVerTV USB 2.0 was the most rugged, with its aluminium-like finish and compact, square form factor.

The Pinnacle MediaCenter was the most elegant looking of the three, with its cool blue LED and a nice curved shape.

When it came to bundled software, the Pinnacle PCTV provided the best PVR software, with all the necessary features. It also came bundled with Pinnacle MediaCenter.

The Tech-Com SSD-TV-811 came with a PVR known as the TV Jukebox, which supported MPEG-1/2/4 video capturing. The PVR software provided by AVerMedia supported MPEG-4 capture in addition to MPEG-1 and 2 capturing.



AverMedia AVerTV USB2.0

Performance

Not only did Pinnacle provide the best PVR application, the application also detected the most number of TV channels—73. The AVerTV and Tech-Com lagged behind with 67 and 66 channels respectively. Pinnacle also had the best image quality.

In the capture test, the Pinnacle dropped no frames, while AVerTV and Tech-Com dropped three and four frames respectively. Thus, once again, the Pinnacle MediaCenter emerged superior to the other two.

External Set-top Tuners

An external set-top TV tuner does not require a PC at all. All they need is a CRT monitor to display the video, while the inbuilt speaker delivers the audio. If you need better audio quality, connect the line out from the tuner to an amplified speaker system.

Tuners of this type display the best quality video on a CRT monitor as compared to the



Pinnacle PCTV USB2

previous two solutions, especially when the PC is off, because the RF interference from the PC is also shut off.

As you might have guessed, these TV tuners are only meant for TV viewing and cannot be used for capturing.

We received three tuners in this category, two from AVerMedia and one from Tech-Com.

Features

The AVerMedia TV tuners came with an easy-to-use remote. They also featured a function known as PIP (Picture-In-Picture), which displays TV video in a corner of your screen, while you use the rest of the desktop for your work. We tried to use this feature but failed. We even tried using different resolutions but it just did not work.

Both AVerMedia models looked very elegant with their silver finish and nicely placed buttons—which gave good tactile feedback. The difference between the two was that while the Box 5 supported a maximum resolution of 1024 x 768, the Box 9 model supported a maximum resolution of 1280 x 1024.

Internal PCI TV Tuners

External USB 2



External TV Tuners

External Set-Top Tuners



PixelView	PixelView	Tech-Com	AVerMedia	Pinnacle	Tech-Com	AVerMedia	AVerMedia	Tech-Com
MediaCentre PlayTV@P3000	PlayTV Pro 2	Super TV SSD-TV-670	AVerTV USB2.0	PCTV MediaCenter 100e	SSD-TV-811	AVerTV Box 5	AVerTV Box 9	SSD-TV-712
26.95	27.31	22.06	21.20	26.80	24.73	16.14	16.84	16.62
Internal PCI	Internal PCI	Internal PCI	External USB 2.0	External USB 2.0	External USB 2.0	Set-top Tuner	Set-top Tuner	Set-top Tuner
TV/FM	TV/FM	TV	TV	TV	TV	TV	TV	TV
Conexant Fusion 878A	Conexant Bt878	Philips SAA7130HL	NA	NA	NA	NA	NA	NA
Stereo	Stereo	Mono	Mono	Mono	Mono	Mono	Mono	Mono
Coaxial In, Composite In, S-Video In, Audio In	Coaxial In, Composite In, S-Video In, Audio In/Out	Coaxial In, Composite In, S-Video In, Audio In/Out	Coaxial In, Composite In, S-Video In, Audio In/Out, USB 2.0	Coaxial In, Composite In, S-Video In, Audio In, USB 2.0	Coaxial In, Composite In, S-Video In, Audio In/Out, USB 2.0	Coaxial In, VGA In/Out, Audio In/Out	Coaxial In, VGA In/Out, Audio In/Out	VGA In, VGA Out, S-Video In/Out, Audio In/Out, Coaxial In
✓	✓	✓	✗	✓	✓	✓	✓	✓
41	32	32	NA	41	22	37	37	25
FM aerial	Stereo cable, FM aerial	S-video to S-video, 3 to 1 AV cable, Stereo cable	USB cable, Stereo cable, Stereo to S-video cable	USB cable	USB cable, Stereo cable	VGA to TV box cable, Stereo cable, Power adapter	VGA to TV box cable, Stereo cable, Power adapter	VGA to TV box cable, Stereo cable, Power adapter
Drivers, PVR Software, InterVideo WinDVD	Drivers, PVR Software	Drivers, PVR Software	Drivers, PVR Software	Drivers, PVR Software, Pinnacle MediaCenter	Drivers, PVR Software	NA	NA	NA
✓/✓	✓/✓	✓/✗	✓/✓	✓/✓	✓/✓	NA	NA	NA
✓/✓/✗	✓/✓/✗	✓/✓/✓	✓/✓/✓	✓/✓/✗	✓/✓/✓	NA	NA	NA
3.5	3.5	2.5	3	3.5	1	4	4	4
28.50	20.59	29.60	30.15	34.23	25.51	25.74	33.25	30.63
87	54	87	67	73	66	54	87	87
3.25	2.75	3.5	3.5	4	2.25	4.25	4.5	3.75
4	7	3	3	0	4	NA	NA	NA
16.19	26.98	20.25	3.85	3.86	9.00	5.40	4.91	20.25
2500	1500	1999	7000	6990	2999	7500	8250	1999
71.64	74.88	71.91	55.20	64.89	59.24	47.28	55.00	67.49

Jargon Buster

PVR: Abbreviation for Personal Video Recorder, this software allows a TV tuner to record video content in real-time.

Timeshifting: Timeshifting is a feature of PVR that allows you to pause, replay or skip a portion of a live TV programme. You have absolute control over how you watch on TV.

MPEG: MPEG is a group (Moving Picture Experts Group) that develops standards for digital audio and video compression. There are several versions of this standard, including MPEG-1, MPEG-2 and MPEG-4.

MPEG-1: This standard was designed to code progressive video at a transmission rate of 1.5 Mbps. It is used in video CDs, but gave way to the new MPEG-2 standard.

MPEG-2: This standard was designed to code transmission rates above 4 Mbps, and is used in DVD and digital broadcast TV. It is superior to MPEG-1 in terms of picture quality and sound clarity.

MPEG-4: This is a relatively new standard, and is aimed at converging streaming

media from different sources.

NTSC: This stands for National Television Standards Committee, which developed the protocol for colour television broadcast transmission and reception in the US.

As a matter of fact, NTSC signals have been used in the US and Japan since 1954, and have hardly been altered since their inception, except for the addition of new parameters for colour signals such as Hue and Tint control.

Also, NTSC signals are interlaced, and an NTSC TV image has 525 horizontal lines per frame. Every other line is dropped, and thus it takes two screen scans to complete one image. 29.97 frames are scanned every second.

PAL: Phase Alternation Line is the standard that was developed in Germany is used in India and Europe.

In the PAL standard, the horizontal image has 625 horizontal lines per frame. 25 frames are scanned every second. A

slight colour variation is seen between the PAL and NTSC standards.

SECAM: This stands for Système Électronique Couleur Avec Mémoire and was put forward by Henri de France in Paris. SECAM is prevalent in some parts of Europe—mainly in France, Russia and countries of the former Soviet Union where it was adopted in 1967.

In the SECAM system, the luminance information is transmitted in the usual manner, the chrominance signal is interleaved with it, and the colour information is reproduced with minimal errors.

NICAM stereo: This stands for Near Instantaneous Companded Audio Multiplex, and was developed by the BBC Research Centre in the early 1980s.

NICAM stereo was first transmitted with the PAL colour broadcasting system in Britain. Interestingly, this technology improves on the sound quality of the transmitted TV signal.

The Tech-Com SSD-TV-712 has not been mentioned in this section because, quite frankly, it is a no-frills device and there was nothing noteworthy about its features. All three TV tuners featured decent OSDs.

Performance

Unfortunately, very little can be said about the performance of the external set-top TV tuners. The only tests carried out here were the number of channels detected and the image quality.

The Tech-Com and the AVerMedia Box 9 detected all the 87 TV channels, while the Box 5 could manage just 54. The image quality of the Box 9 was the best, with Box 5 not far behind.

The Broad Picture

We tested 17 TV Tuners in this test. In the internal TV tuner cards category, the Compro cards outperformed every other card.

There was somewhat of a neck-and-neck competition

between the Compro Video-Mate PVR/FM and the Mercury TV tuner card. Each had their own positives and negatives.

While the Mercury card was priced at a rock-bottom Rs 1,499, the Compro was not too expensive either at Rs 1,995. However, due to better image quality and PVR features, the Compro PVR/FM emerged the Gold winner whereas the Mercury won Silver.

In the external USB TV tuner category, the Tech-Com did make itself notable by pricing its SSD-TV-811 at Rs 2,999, as compared to nearly Rs 7,000 for the other two candidates from AVerMedia and Pinnacle.

However, since this segment is primarily aimed at laptop users, the price factor isn't as important as the features and performance.



Tech-Com
SSD-TV-712

Moreover, most laptop owners probably would not mind spending a few extra bucks for better quality. Performance-wise, the Pinnacle and AVerMedia were the only contenders for Gold. Due to better image quality, channel detection and video capture score, the Pinnacle PCTV Media-Center 100e was adjudged the winner in this category.

The last category included the external set-top TV tuners. Here, the AVerMedia Box 9 tuner performed exceptionally well—better than the Tech-Com tuner in the image quality test.

However, the AVerMedia Box 9 was priced high at Rs 8,250—You should be able to buy a decent colour TV for the price of the AVerMedia Box 9! The Tech-Com SSD-TV-712, on the other hand, was priced at a very low Rs 1,999.

Due to huge price difference, the Tech-Com SSD-TV-712 easily won first place in this category.

Most home users are opting for a TV Tuner card nowadays because of the flexibility it offers. Unlike earlier TV cards, today's cards are more user-friendly and offer an unbelievable array of features.

If you find yourself missing out on your favourite programs, or are interested in recording content from your TV to watch later, nothing beats a TV tuner! ☑

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Contact Sheet		CRT Monitors		
Brand	Company	Telephone	E-mail	Web site
AVerMedia	ACCESS	022-23840789	rcshah@bom8.vsnl.net.in	www.avermedia.com
Compro	Mediatech India	022-26361111	sales@mediatechindia.com	www.comprousa.com
Mercury	Kobian India Ltd	022-23020767	mumbai@kobian.com	www.mercury-pc.com
MSI	Micro Star International	022-8386711-13	navin@cyberstarindia.com	www.msi-india.com
Pinnacle	Aditya Infotech Ltd.	011-26445915	yogesh.dutta@adityagroup.com	www.pinnaclesys.com
PixelView	Rashi Peripherals	022-28260258	navinderc@rptechindia.com	www.prolink.com.tw
Tech-Com	Shree Sagarmatha Distributors	022-26428541	techcom@touchtelindia.net	

MSI MEGA PC 865 PRO

The MEGA PC 865 PRO is the latest in the series of small form-factor PCs, such as the MEGA 180 and the MEGA 865. On the design front, the MEGA PC 865 PRO has improved significantly, facilitating easy installation of internal components—which was a pain with some of the older models.

The finish is a combination of brushed aluminium and matte-black with orange backlights, giving the MEGA 865 PRO a sedate, classy appeal. The front facia is split into three horizontal panels. The top panel covers the optical drive, the middle one accommodates the display panel, and the bottom panel covers the various ports—USB, FireWire, sound jacks and the 7-in-1 memory card reader.

The i865G chipset-based motherboard supports an LGA 775 Intel processor up to 3.4 GHz. DDR 400 MHz memory modules in dual mode is supported, but there are just two memory slots. The board offers 5.1 channel sound, which is very good for DVD playback. The graphics subsystem is driven by the onboard Intel graphics offered by the i865 chipset.

One AGP and one PCI slot is provided, which will almost certainly be used for plugging in a TV tuner card, taking into consideration the media centre lineage of this product. You can also opt for wireless connectivity via an optional adapter.

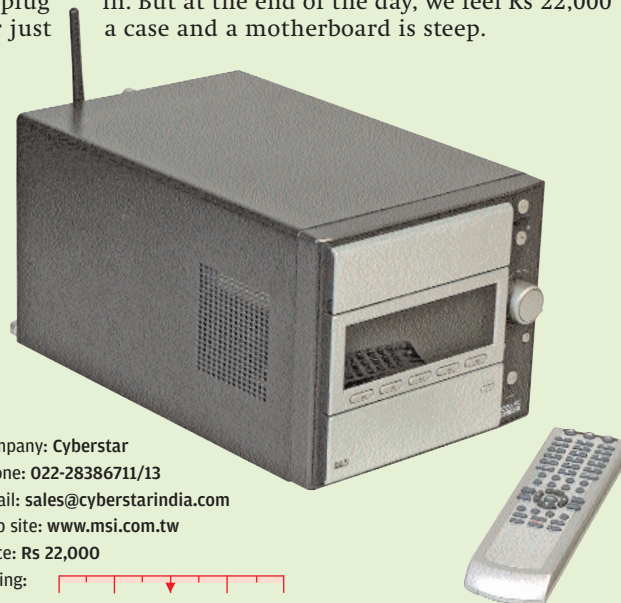
For cooling, the case is provided with an 80 mm fan. The processor is cooled by a combination of a heat pipe and a large heat sink-fan combo.

Extensive manuals make sure you find your way about the installation process.

The MEGA PC 865 PRO has two modes of operation—as an A/V device and as a PC. There are dedicated buttons

for each of these modes. In A/V mode, the device allows you to play FM radio, DVDs, MP3s and TV without booting into the operating system. To enable this functionality, one needs to install the 'InstantOn' software before loading the operating system. Also, it does not support VGA cards as of now.

Overall, the MEGA PC 865 PRO comes across as a well-built product. There are plenty of features—the performance, of course, depends on the hardware you choose to plug in. But at the end of the day, we feel Rs 22,000 for just a case and a motherboard is steep.



Company: Cyberstar
 Phone: 022-28386711/13
 Email: sales@cyberstarindia.com
 Web site: www.msi.com.tw
 Price: Rs 22,000
 Rating:

AOpen XC Cube AV

The AOpen XC Cube AV is a Small Form Factor (SFF) PC. It is compact, has some really good features, and resembles a portable audio system. The traditional black finish, up-front buttons and large blue LED display accentuate the 'consumer electronics' look.

A large display dominates the front facia. Menu navigation is achieved by a combination of three buttons beneath the display. Three buttons are placed on either side of the navigation buttons, and they offer the play/pause, forward, reverse and stop functions.

A memory card reader is integrated just above the display panel. The bottom flap covers two USB and two FireWire ports, and the sound card jacks. The back panel has the usual array of ports—two USB, one FireWire, an optical/RCA SPDIF and an RJ45.

Installing components such as processors requires removal of the mounting brackets. This is not a good thing when compared to MSI's MEGA PC, where the mounting cage can be swivelled and locked in position to install components. Moreover, the cables are not properly routed, contrasting with MSI's systematic approach.

The interiors, too, are cramped, and ventilation could be hampered by this. The processor in the XC Cube AV is cooled using just an ordinary, tall-fin heat sink-fan combo. Moreover, the same fan is used for the case ventilation as well and this could be a problem.

The XC Cube AV is sold as a complete solution with all hardware plugged in, for out-of-the-box operation. In fact, a 5.1 speaker set and an anti-RSI wireless keyboard and mouse combo come bundled.

The device we received had a Pentium IV 2.4 GHz processor, 512 MB of DDR 333 MHz RAM, an 80 GB 7200 RPM SATA drive, and an 8X DVD-Writer. A TV tuner card was installed, too!

The XC Cube AV, too, supports two modes of operation. In the first mode, you can use it to play TV, FM radio, MP3s, DVDs, VCDs, etc. without booting the OS. In the other mode it can be used as a regular PC.

The XC Cube set, along with the bells and whistles we've mentioned, is steeply priced at Rs 78,990.

We think this is a little too much. Besides, if you compare it with MSI's MEGA PC 865 PRO, the latter is a more refined product when it comes to component layout, electrical cable routing and ease of installation.



Company: Xserve India (Pvt) Ltd
 Phone: 080-51131001
 Email: info@xserves.com
 Web site: www.xserves.com
 Price: Rs 78,990
 Rating:

Netgear MP101 Wireless Digital Music Player

Netgear's MP101 is a digital music player capable of streaming audio files from your PC using a wireless connection in your house.

There is a large LCD panel on the front of the MP101 which displays song information. There are no buttons onboard; all functions are controlled via the feature-rich remote.

For installation, all you need is an Access Point connected to the PC with DHCP configured. Install the server applet on your PC, and it scans for supported media. On the device side, all you need to do is plug in the power connector and speakers!

The device scans for wireless connections within its range. Select the SSID (Secure Set Identification) of the Access Point connected to the PC where the server software is running, and the MP101 will pick up the IP address and subnet mask on its own—all you have to do is choose your music and hit Play.

The MP101 comes with audio RCA jacks and stereo-in to connect speakers, and an RJ45 10/100 Mbps LAN port to connect to a LAN switch if you are using one at home. The

MP101 does not support 5.1-channel audio since it only plays MP3s and WMAs, which are two-track formats.

We streamed MP3s from a PC with the Access Point placed 10 to 12 feet away. Since the MP101 is 802.11b compliant, it can support a throughput of 11 Mbps—so streaming 128 Kbps files was no problem at all.



Company: Muggees Technologies Pvt Ltd

Phone: 022-28331321

E-mail: mtpl@muggees.com

Web page: www.netgear.com

Price: Rs 9,620 approx.

Rating:

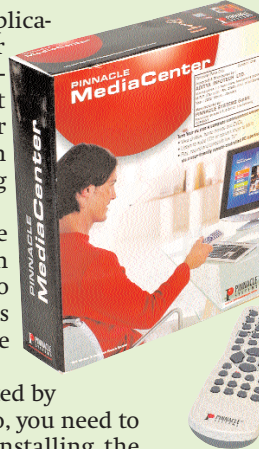
Pinnacle MediaCenter

Pinnacle MediaCenter is a media player application in line with Windows MediaCenter Edition. Once installed on the PC in conjunction with a certified Pinnacle TV tuner, it allows you to watch movies and view your photos from a hard drive, CD or DVD. You can also watch TV and record TV programmes using the time-shift feature.

The package consists of the Pinnacle MediaCenter SE software, a remote, and an Infrared sensor for the remote that plugs into your PC's serial port. The TV tuner, though, is not a part of the package, and needs to be purchased separately.

Currently, three TV tuner cards are supported by this application—PCTV 100i, 100e and 300i. Also, you need to install the drivers for the TV tuner prior to installing the MediaCenter.

Once scanning for channels is done, you can view, record and time-shift them. Some settings such as the recording format, video aspect ratio, DVD language, etc. can be adjusted from within the MediaCenter interface.



Four capture settings are offered by Pinnacle's MediaCenter—VCD, which is MPEG-1, and S-VCD, DVD, and DVD long, which are all MPEG-2 and hence require a high-end system.

These settings not only affect the quality of captured video, but also the quality of live TV playback when time-shifting is enabled. The application worked flawlessly except for a small glitch that was taken care off by installing a newly released patch.

Pinnacle MediaCenter is priced well at Rs 3,000 and is a good alternative to Windows MediaCenter Edition, which isn't available through the retail channel. The only problem is lack of support for TV tuner cards other than those manufactured by Pinnacle.

Company: Pinnacle Systems

Tel: 011-26445915

E-mail: indianconsumer@pinnaclesys.com

Web site: www.pinnaclesys.com

Price: Rs 2,990

Rating:

D-link MediaLounge DSM-320

The D-Link MediaLounge DSM-320 connects a PC wirelessly to a TV, allowing for watching of video and photos and listening to audio in the comfort of your living room. It's an excellent product for those who want to build a media centre PC without dumping their old PCs.

The enclosure is finished in matte silver, and has classy appeal. There's only one button on the front—the ON button. The back panel has digital and analogue audio jacks, an S-video connector, a composite connector, component video-out jacks, one Ethernet port, and a small switch that allows you to choose between the NTSC and PAL standards.

Installing the device is as simple as it can get—you just hook up the MediaLounge to a wall outlet. When you connect the MediaLounge to your PC wirelessly, a server applet on the

PC scans for all supported media. You can also opt for a wired connection via the Ethernet port.

For playing content, one can browse through the PC via the sleek and easy-to-use interface. The DSM-320 supports almost all the video, audio and image formats you'd want. Priced at Rs 15,000, the MediaLounge

DSM-320 is a unique product that can transform a standalone PC into a digital entertainment centre—at just about a fourth of the cost of a true media centre PC!



Company: D-Link India Pvt Ltd

Tel: 022-26526696

E-mail: sales@dlinkindia.com

Web site: www.dlink-india.com

Price: Rs 15,000

Rating:

Of Computerised Cushioning

1 What shoe company showcased, at the Hannover CeBIT trade show, a model with sensors and a processor for adjusting the cushioning of the shoe?

- a. Converse
- b. Puma
- c. Adidas
- d. Nike



2 Which of the following countries is a forerunner in converting all its conventional movie projectors to digital?

- a. Kyrgyzstan
- b. Slovakia
- c. Ireland
- d. Singapore

3 What is podcasting?

- a. A Web-based broadcast medium
- b. A TV broadcast medium
- c. Broadcasting across iPods
- d. A radio broadcast medium

4 Name the former chief executive of WorldCom, the second-largest telecommunications firm in the United States, who was found guilty of security fraud, false regulatory filing and other massive accounting fraud.

- a. Bernard J Ebbers
- b. Richard M Scrushy
- c. Kenneth L Lay
- d. Jeffrey K Skilling

5 Science Applications International Corporation led a group which developed a \$312 million (Rs 1,537 crore) surveillance system for the Olympic Games in Athens. Which of the following has *not* been rigged with cameras as part of this system?

- a. Boats
- b. Helicopters
- c. Blimps
- d. Police horses

6 What does quantum cryptography do?

- a. Allows two users on an optical fibre network to form a shared key
- b. Describes how electrons surround the nucleus of an atom
- c. Scrambles plaintext into ciphertext and vice-versa
- d. Explains the behaviour of matter on computer chips

7 Which of the following is *not* a desktop search tool?

- a. Blinkx v2.0
- b. Yahoo! Desktop Search
- c. Sphinx Desktop Search
- d. MSN Toolbar Suite Beta

8 Name the new mobile video-gaming device launched by Sony Corporation.

- a. PlayStation
- b. PlayStation Mobile
- c. PlayStation Go
- d. PlayStation Portable

9 What has Ben Cohen recently been in the news for?

- a. Pornography
- b. A dispute with Apple over itunes.co.uk
- c. A lawsuit on Quickquid.com
- d. For overturning a ruling from Nominet

10 The Wiki got its name from the Hawaiian word for...?

- a. Change
- b. Open
- c. Quick
- d. Value

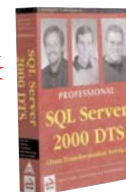
Answers

1. Adidas	7. Sphinx Desktop Search	10. Quick
2. Ireland	8. PlayStation	network to form a
3. A Web-based	9. A dispute with	on an optical fibre
4. Bernard J. Ebbers	10. Quick	itunes.co.uk
5. Police horses		
6. Describes how electrons surround the nucleus of an atom		

Over a period of five years, if left on during the day and kept on standby by night, the typical CRT monitor will consume as much power as it is worth!

Did you know?

Got an interesting question? Send it in with the answer to editor@thinkdigit.com



Send in your answers to the crossword to TQ@thinkdigit.com. One lucky participant will win Professional SQL Server 2000 DTS by Mark Chaffin, Brain Knight and Todd Robinson, published by Shroff Publishers and Distributors P. Ltd. There was no winner for the April 2005 crossword. Better luck next time!

Crossword

Across

- 6. On maid transforms known area of control (6)
- 8. Organised presentation of data upsets porter (6)
- 9. Setting of a programme (4)
- 10. Web browser at theatre (5)
- 11. Write Once, Read Many (abbr) (4)
- 13. Electronics giant headquartered in Japan (7)
- 16. Company to have introduced the Castanet Tuner (7)
- 17. ___ Band (5)
- 20. Statement of fees (5)
- 21. One hundred thousand for shellac, we hear (4)
- 22. ___ Hollerith, creator of the Hollerith Electric Tabulating System (6)
- 23. No response from computer to user commands a jail (4,2)

Down

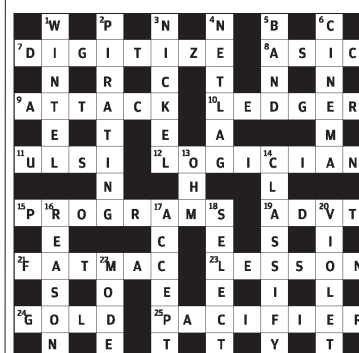
- 1. Developer of the PowerPC in Illinois (8)
- 2. Cyber ___ (4)

- 3. Plug-in from Computer Mail Services confuses a report (7)
- 4. Collect information (8)
- 5. Short for Infrared Data Association (4)
- 7. Newbie is a blessing returned (4)
- 12. E-mail sent to harass a person (8)
- 14. Total loss of electrical power (8)
- 15. High-speed network developed by UCAID blows up alien be (7)
- 18. Bioinformatic Sequence Markup Language (abbr) (4)



- 19. Without monetary cost advertisement (4)
- 21. Prevent access to a system (4)

Last Month's Solution



Newsweek, April 18

Every Wi-Fi Cloud Has A Broadband Lining

JOHN NESS OF Newsweek investigates whether two US cities—Portland and Philadelphia—can become entirely wireless cities by next year

NOBODY doubts the benefits of Wi-Fi broadband technology. No longer is a computer user tethered to a wire in order to surf the Web. All you need is to be within range of a Wi-Fi hotspot, and thousands are sprouting up—at airports, parks, hotels, bookstores, coffee shops, college campuses. Business travellers rely on them. Students need them. Everybody with a PC likes them. The only problem is that, though Wi-Fi is spreading fast, access is hardly

universal. Most areas of any given locale are not “hot,” and even in those that are, being only slightly out of range or behind the wrong building means no more service. The irony of Wi-Fi convenience is that, without ubiquity, dependent users can pretty quickly become frustrated.

The telecoms, while deploying Wi-Fi in ever more places, won't likely be solving the problem soon. Telecoms “target lucrative, high-density markets to make a profit,” explains Jim Baller, a Washington telecommunications

lawyer. That has led municipalities to begin creating hotspots themselves, as a way to reach lower-density and lower-income areas that a profit-making company would ignore. More than a dozen communities—from downtown Baton Rouge, La., to San Francisco's Marina neighbourhood—now have significant Wi-Fi coverage provided by the government at nominal or no cost. But the real tests of municipal Wi-Fi are in Philadelphia and Portland, Oregon, both of which plan to begin blanketing their entire areas with low-cost Wi-Fi next year. Cities like Chicago and San Francisco are keenly watching those efforts—as are telecoms that have spent millions in for-profit efforts to provide wired broadband infrastructure.

There will inevitably be holes in any Wi-Fi cloud spread across a major city. Signals often don't extend into basements, tunnels or larger buildings—but true believers say the advantages make up for any gaps. They say the poor will get access, cities will be able to run more efficiently and storefront businesses will be able to work online on the cheap. Naysayers, particularly the telecoms, doubt cities or the technology itself is up to the task.

For business travellers, Wi-Fi clouds are being designed to be so user-friendly that anyone can get online as soon as he or she is in town. In theory, once your PC picked up a municipal Wi-Fi signal, all you'd have to do is complete an online registration and pay a small fee via a credit card. Dianah Neff, Philadelphia's chief information officer, says city planners are talking to T-Mobile—a leading Wi-Fi service for travellers—about a roaming agreement that would allow visitors to surf big areas with their T-Mobile accounts.

http://snipurl.com/digit_wifi

Cnet.com, April 7

Do You Really Care For Faster PCs?

C-NET.COM IS THE world's most respected and certainly the most exhaustive technology portal. Senior Editor Molly Wood asks whether faster and faster PCs really make sense

THE future of the desktop is here! The first PCs featuring dual-core processors from Intel have arrived, presenting the first over-clockable chips from Intel since 1998 and offering true multithreaded performance. Just a day after Intel announced its dual-core processors, nVidia unveiled its nForce4 SLI Intel Edition chipset, which lets you run Intel's dual-core Pentium Extreme Edition 840 processor and two nVidia SLI graphics cards. AMD's dual-core chips are probably coming soon, 64-bit

versions of Windows are just around the corner, and to deal with all this horsepower, PC cooling systems are bound to get increasingly outlandish—water's just the beginning. But the real question to ask here is: who cares?

Seriously, what are these PCs for? Certainly not the office. As far back as 1999, Larry Ellison was championing a second version of his thin-client network computer, calling the desktop PC a “ridiculous device” and arguing that a complete PC was a complete

waste on the desktops of most employees. Many analysts and journalists are advocating the death of the corporate PC, and it's increasingly obvious to all that most of the horsepower of a desktop PC is wasted on employees who primarily use spreadsheets, word processors, custom applications, and e-mail. Dual-core, SLI, water-cooled PCs in cubicles? Er, no.

So, that leaves gamers, the real target market of these machines. I buy that—they're about the only ones (other than graphics pros, of course) who can justify a machine such as the Alienware Area-51 ALX 7500. But how many gamers really need a dual-core SLI PC that, when over-clocked and loaded to the gills, costs around \$5,000? For one thing, most current games aren't multithreaded, meaning you can't really even take advantage of the dual-core processors just yet. Obviously, that'll change over time, but won't most hardcore gamers, then, just stick to the DIY approach—adding high-end components, over-clocking, and building elaborate cooling systems themselves?

Moreover, although gaming is a \$7.3 billion industry in the United States, it would seem that consoles rack up much bigger sales numbers: 160.7 million units sold in 2004, versus 45 million computer games, according to the Entertainment Software Association. So, who's really going to buy these PCs in the future? And how many \$5,000 machines does Alienware have to sell to make the development worth its while?

So, on to the next presumed audience: the digitally savvy home user, who's processing gigabyte after gigabyte of video, audio, and digital photos. Right, sure, we need 4GHz. There's no way the 2.8GHz Dell box I just bought, when properly outfitted with nearly a gig of RAM and strapped to a 160GB external FireWire drive, could possibly be up to the task.

http://snipurl.com/digit_pc



Scientific American, April 2005

Dunk The Spam

SPAM IS THE SINGLE largest irritant the information economy has ever created. Joshua Goodman, David Heckerman and Robert Rounthwaite of Scientific American give a few tips on how to avoid spam

IN 1978, the first spam e-mail—a plug from a marketing representative at Digital Equipment Corporation for the new Decsystem-20 computer—was dispatched to about 400 people on the Arpanet. Today, junk correspondence in the form of unwanted commercial solicitations constitutes more than two-thirds of all e-mail transmitted over the Internet, accounting for billions of messages every day. For a third of all e-mail users, about 80 per cent of the messages received are spam. Recently, spam has become more threatening with the proliferation of so-called phishing attacks—fake e-mails that look like they are from people or institutions you trust but that are actually sent by crooks to steal your credit-card numbers or other personal information. Phishing attacks cost approximately \$1.2 billion a year, according to a 2004 Gartner Research study.

The phenomenon of spam afflicts more than just e-mail. Inside chat rooms lurk “robots” that pretend to be human and attempt to convince people to click on links that lead to

pornographic Web sites. Instant messaging (IM) users suffer from so-called spIM-e-mail spam cognates. Blogs can be corrupted by “link spammers” who degrade Internet search engine operations by adding misleading links to sites that distort the utility ratings of Web sites and links.

The suffocating effect of spam sometimes seems likely to undermine, if not wreck, Internet communications as we have come to know them. The reality, however, is not so bleak. Several techniques for intercepting spam and discouraging spammers have been invented, and more are on the way. The methods

we shall discuss focus on junk e-mail, but many of them could apply to other incarnations of spam as well. No one of these will be a magic cure, but combinations—if embraced by enough of us—could work wonders. It is not unrealistic to hope for a day when our e-mail boxes will once again be nearly spam-free.

Google's continuing refinement of its search technology underscores the intensifying competition in that market, which has carried Internet advertising back to life in recent years. MSN, Yahoo! and others have seen Google parlay popular search technology into a dominant business by selling text advertisements to marketers whenever consumers search for words related to a business.

Insidious E-mails

The proliferation of fraudulent e-mail results directly from favourable market forces: spam is exceedingly cheap to distribute. It is not altogether free, though. We estimate that a message costs about one hundredth of a cent to send. At these cut-rate prices, a spammer can earn only \$11 per sale and still make a profit, even if the response rate is as low as one in 100,000. Hence, although very few e-mail users ever buy anything advertised in spam, all of us suffer because of those who do.

http://snipurl.com/digit_google



"A SINGLE HULL WILL COST LESS MONEY."
-FORMER TITANIC ENGINEER

"CALL IT A WARDROBE MALFUNCTION."
-FORMER HALF-TIME ENTERTAINER

"IT'S JUST A PAIN RELIEVING GEL."
-FORMER BASEBALL SLUGGER

"YEAH, ONE OUT OF FIVE BACKUPS FAIL. SO WHAT?"
-FORMER IT GUY

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Overland STORAGE

Ignorance Is Bliss?

Citing previous 'famous' reasons for failure are no way to justify your own failure. Backups are critical. Point made. Point taken.



Watch Dog

Emphasising the improved security thanks to SP2, this ad gets the message across loud and clear. But what happens when the dog sleeps?

Playboy Offers Free Pics For Your PSP!

After the iPod Photo, it's a chance for PlayStation Portable owners to take adult magazine *Playboy* on the road with them—and they don't have to bother with the articles, either! The online arm of Playboy Enterprises said it will offer photo galleries and videos shot and edited specifically for the PSP.



Contact the Pope via e-mail!

Pope Benedict XVI has kicked off his pontificate by setting up his e-mail address. The faithful can contact him at benedictxvi@vatican.va. On his Web site, there is also a link to the Vatican Television Centre, which streams ongoing events and programmes live. Now *that's* what we call a tech-savvy Pope!



Escape

INDEXING VIDEO

Google Wants Your Home Porn Videos!

Google co-founder Larry Page recently announced that the company wants the public to send in its homemade videos—and it doesn't matter if they're smutty. "There might be an adult section, or something like that. I don't think that is going to be a big issue," Page told attendees at the National Cable and Telecommunications Show in San Francisco in mid-April. Google has yet to formally announce the proposal, but Page said to expect the doors to open "within the next few days".

Officially, it's in the name of research. Google started indexing TV shows late last year, and Page wants to use public contributions to test its prototype video search software, which uses

pattern matching to find words or phrases in clips.

Unofficially, this could be an acknowledgement of the Web's changing demographic: in a recent survey, 23 per cent of Britons cited pornography as their primary reason for getting broadband, far outweighing any other factor.

Google's prototype faces an uphill battle getting its software into the professional newsrooms, where Autonomy's Dremedia—now Virage—has a lead of several years. Virage's software, which uses Bayesian pattern matching, can perform much of the work of a traditional archivist, such as segmenting and labelling footage, recomposing it with subtitles, and even cleaning it up for broadcast.

The privacy-conscious amongst you may wonder how this giant database—which knows your search queries, your e-mail, and the people you know through social networking—could have managed to stay out of your bedroom for so long. Here it is now!

SPAMMERS BEWARE!

US Man Gets Nine Years For Spamming

In a first-of-its-kind ruling, Jeremy Jaynes, 30, from North Carolina in the United States, has been sentenced to nine years by a Virginia judge for spamming. Under Virginia law, sending bulk e-mail messages using fake addresses is a crime.

Jaynes is the first person in the US to get a prison

term under spam law. He had sent millions upon millions of spam messages, and is said to have been the world's eighth-most prolific spammer. Jaynes was operating through an AOL server in Loudoun County,

UNUSABLE!

<http://ihf.nic.in>



This is the official site of the Indian Hockey Federation. About a year ago, there was stuff in the newspapers about how hockey is the country's national sport, that it should be put on par with cricket, and so on. People were bemoaning the fact that hockey seemed to be stagnating in India. The Hockey Federation's Web site is an accurate reflection of the state of the sport.

The only material the page hosts is the "Constitution of Indian Hockey Federation". Then, you can count, on your fingertips, the number of links on the page: precisely four. There is one link that doesn't work, and one that points to a site very much under construction; one link to the International Hockey Federation; and one link to "Hockey International Year of the Youth 2001." That's it. And no, the site is not under construction.

Actually, there's more. There are two pictures of people playing hockey.

Win!

My Desktop

Think you have the most beautiful, most innovative desktop around? Send it to mydesktop@thinkdigit.com, and Digit will publish the most eye-catching of them each month.

The winner receives a copy of professional **SQL Server 2000 DTS**

By Mark Chaffin, Brian Knight and Todd Robinson, published by Shroff Publishers & Distributors P. Ltd. This month's winner is Debjyoti Roy from Kolkatta



Debjyoti's desktop is really easy on the eye
Sent in by Debjyoti Roy, Kolkatta

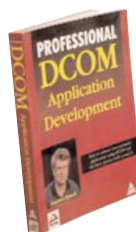


WIN!

The 'Professional DCOM Application Development' book 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 earlier. Send your picture to digipick@thinkdigit.com. The prize-winning picture will be published each month.

This month's winner is Dhawal Damle from Delhi. He wins

Professional DCOM Application Development
from Shroff Publishers and Distributors P. Ltd



where the world's largest Internet services provider is based, and is believed to have sent some 10 million spam messages a day. By selling sham products and services advertised in his messages, he earned up to \$750,000 (Rs 3.26 crore) a month!

Since Jaynes is from North Carolina, and the court ruling was in Virginia, he can, and will, appeal on the grounds that he has been charged as an out-of-state resident under a Virginia law that has only just come into effect. The court has put off the start of his prison term because the new law raises questions.

In sentencing Jaynes, Circuit Court Judge Thomas D Horne said he would not begin serving his term because there are "substantial legal issues" related to the new anti-spam law, enacted in 2003, that still need to be explored. Horne also said he believed Jaynes does not pose a danger to society.

According to prosecutor Lisa H Thomas, it was not just about the sending of bulk mail; it was also about falsifying routing information and disguising the origin of the mails.

Jaynes' sentence is the harshest punishment handed down so far for junk emailing in the US, and appears to be a strong signal that authorities will not tolerate spamming.

ROBOTS AS JOCKEYS

Robots Will Be Employed As Camel Jockeys

The United Arab Emirates has said it will use robots as jockeys for camel races from the next season. The move comes after widespread international



criticism of the use of young children to ride camels during the long and often hazardous races.

A prototype of the Swiss-designed robot has recently been successfully tested. "The mechanical jockey is light in weight and receives orders from the instructor via a remote control system fixed on the back of the camel," the daily *Gulf News* said.

The issue of child camel jockeys has been an embarrassing one for the UAE. Aid workers say there are up to 40,000 child jockeys working across the Gulf. Many are said to be have been kidnapped and trafficked from South Asia.

TOLERATING SPAM

Survey Says Americans Are Getting Used To Spam

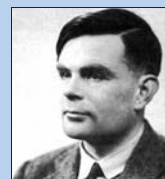
A recent survey of more than 1,400 US Internet users conducted by the Pew Internet and American Life

The Father Of Computer Science

Mathematician, cryptographer and war hero, Alan Mathison Turing is widely considered the father of computer science.

Turing faced problems with social adjustment. His headmaster at Sherborne school once said, "If he is to be solely a

scientific specialist, he is wasting his time at a Public School."



Alan Turing

In 1935, Turing

received a Fellowship of King's College of Cambridge University. His famous mathematical work 'On Computable Numbers' was written in Cambridge in 1936, wherein he laid the foundation for the modern computer. In 1938, Turing returned to Cambridge as a logician and number theorist.

During WWII, he helped crack Germany's secret codes. In 1948, Turing became deputy director of the computing lab at Manchester University. In June that year, he first demonstrated the Universal Turing Machine—a mathematical model of the modern computer. He projected a computer being able to switch from numerical work to code breaking, file handling or chess-playing, something like 'one single machine for multiple tasks'.

In 1954, Turing committed suicide by eating a cyanide-laced apple. A non-conformist and freethinker, Turing remains an enigma.

Bluff

YOUR WAY THROUGH

Photoshop

Photoshop is all around us, at least at the *Digit* office. Some of us know how to use it a little bit, and many of us have seen that it is a powerful and fascinating tool—and have begun to ‘learn’ Photoshop. How far the learners have gotten is another matter altogether—but these people try to portray the image that they ‘know’ Photoshop. Here are some terms they throw at us.

Unsharp Mask: In order to bring out the details, most scans need to be sharpened. For this, most pros use Unsharp Masking. There are three parameters in the Unsharp Mask filter: Amount, Radius and Threshold. Threshold deals with levels of tonal separation. The Radius is the amount of sharpening you want. The Amount controls how effective your choice of Radius will be.

Didn’t get all that? Well, we didn’t either!

Blending Modes: These need two or more layers for any effect to work. You need at least two layers to blend together. A layer with a blending mode specified will blend with all other colours from layers underneath it. Photoshoppers call those original layer colors the base colours. The colours on the top layer are called the blend colors. The result is called the result colour.

Texture Mapping: This is a favourite of wannabe Photoshoppers. They often say something that sounds like the following: “I’ve been having problems with using texture maps in my renderings. I’m trying to render a brick building using a texture map, but when it renders, I get these weird patterns all over my image. I’ve tried to increase the actual scale of the text-map, that didn’t work. I tried to increase the size of the tiling, that didn’t work. It happens for every image map I use for brick. It’s getting frustrating...”

Just throw something like that at someone while looking frustrated, and they’ll think you’re a Photoshop pro!

The DVD Dude

April 1, 2005: We had a new recruit join us this month. Ishan, a soft-spoken, polite boy from UP, who did his Masters in Information Technology from Melbourne, Australia, was hired to take over the DVD and CD process, and also to write stories.

Sachin, our Executive Editor, hit him with the good news first: “No articles to write this month!” That brought a broad smile to his face—he thought he had time to settle in, get a feel for the place, get to know people. He was wrong!

April 2, 2005: Perhaps a day that will haunt Ishan for a lifetime. He had a meeting with Sachin and Raaabo (Robert). Raaabo informed him that the May 2005 DVD deadline was four days away. He took it well, all things considered, and all we needed were smelling salts to get him back to reality.

April 4, 2005: We were all awoken from our Monday morning slumber by a shrill scream, and subsequent sobbing. We found Ishan with his head in his hands: the screen before him said, “This page cannot be displayed”. The Internet connection was down—which is something Ishan will have to get used to. Like the rest of us have, over the years...

April 7, 2005: It’s amazing how mean we can be at times. We purposely didn’t tell Ishan he’d have tons of help from seasoned *Digit* veterans, helping him discover the secrets of the trade. Finally, a day before his deadline, help flowed in from everywhere, and Ishan was amazed to see the impossible become possible: the DVD was done on time.

Ishan smiles his soft smile as he sums it up: “At *Digit*, Internet access may be fleeting, but friends are made for life!”

DIGIT DIARY

Project suggests that Americans are learning to live with spam. Basically, the data suggests that Americans are tolerating spam better than they used to. And what’s true of Americans could well be true for people everywhere.

The news out of the Pew survey is this: “Compared to a year ago, fewer e-mail users now say that spam is undermining their trust in e-mail, eroding their e-mail use or making life online unpleasant or annoying.”

“It’s one of the annoyances in life that you eventually resign yourself to,” Pew Internet chief Lee Rainie told *The Washington Post* in an interview.

So is spam gradually becoming just another background distraction? After all, humans are talented at filtering out chronic distractions. We did it with the daily rush hour, the annoyance of overhearing strangers’ cell phone conversations, and the threat of nuclear annihilation. Now, the Pew survey says, we’re doing it with spam.

The findings are in contrast with the fact that over half the Americans now say they “trust e-mail less” because of spam.

The survey is not really groundbreaking—after all, given the fact that spam is only increasing despite all the efforts to control it, what else would people’s reaction be except to get used to it?

SMELL AND TASTE

Expect More From Movies

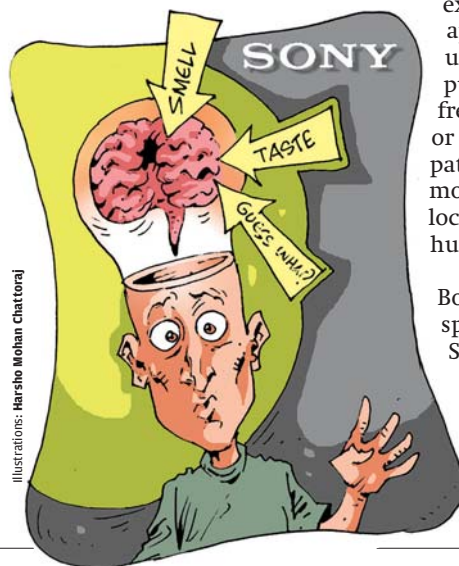
Sony was recently awarded a patent for a technology that could conjure up smells, tastes and other sensations in the

brains of movie-goers. Specifically, the patent covers “a method for generating sensory data onto the human neural cortex”. The patent describes using “ultrasonic transducers” to stimulate neural activity in particular areas of the brain, causing the person to experience smells and tastes as part of the cinematic experience.

The technology is outlined in the patent in this way: “Changes in the neural firing timing induce various sensory experiences, depending on the location... the system induces

recognisable sensory experiences by applying ultrasonic energy pulsed at low frequency in one or more selected patterns on one or more selected locations of the human cortex.”

Elizabeth Boukis, a spokeswoman for Sony Electronics, described the invention as “prophetic”, *New Scientist* reports. “It was based on



Illustrations: Harsho Mohan Chatterjee

Urban75.org, among other things, has information on drugs, punch and football. Among this is a link called 'useless' that lists over 25 utterly useless games (some are fun, though!). The worst among these really is the World Mouse clicking championship. To their credit, the site base-line warns you these are useless games (and other links!).

All one has to do is click on the given button and see how many times you can click in 10 seconds. It can get addictive for about 30 seconds (that's about three attempts) but soon, the novelty wears off, your IQ comes back to normal and you decide to hit [Ctrl]+[W]. Please avoid. But we know you won't listen!

Some of the other totally inane games include a certain Mr Insult who will shout insults (some as banal as "What are you, insane?") for anything you type. What makes this mind-numbing is the fact that the insults are not even fresh, and the same old ones get repeated every single time. Sheesh!

Mr Insult can also become a purist when it comes to the language and insult you in Shakespearean English. Why is that interesting? The insults fade away à la Star Wars titles. To his credit, he manages to keep them scrolling for a long time but once again, the uniqueness wears off after about 6.5 seconds and your IQ rises yet again, and you will rush for [Ctrl]+[W]. We suggest you keep your fingers ready for [Alt]+[F4]!



www.urban75.org/useless

an inspiration that this may someday be the direction that technology will take us," she said.

Whether the patent will revolutionise the way we think of movies remains to be seen, but one must remember that when talkies first arrived, a famous personality said, "Who wants to hear people in movies talk?"

HARD DRIVE CUSHIONING

Sony Adds 'Airbag' To MP3 Player

Late in April, Sony shipped a hard drive-based personal digital music player adding a removable battery and an anti-impact system to the hard disk as new features.

The NW-HD5 is equipped with a 20 GB drive, which has a 'G Sensor' that detects sudden drops and cushions the



storage medium to prevent damage and data loss. IBM recently added such a mechanism to its ThinkPad hard drives, as did Apple with its laptops, but this is the first time the technique has been applied to portable music players.

The player went on sale in Japan on April 21 for around ¥35,000 (Rs 14,000).■

Compiled by Aditya Kuber,
Renuka Rane
and Ram Mohan Rao

Blog WATCH

This month in the Blogosphere: Russ Nemhauser finds out the hard way why he should have had power backup; A1Great takes a look at pop-ups; Jason Salas puts up a primer for podcasting newbies; and Science Library Pad puts down thoughts on linkblogging

A1Great
<http://a1great.com/>

On popups and such

The Bored site is doing gangbuster business right now, attracting a lot of users and site submissions. One of those submissions came from a webmaster whose game site offered a lot of fun stuff, but managed to throw a popup into my browser, despite having that particular feature disabled in Firefox.

So I got into it with the webmaster a little bit, saying I wouldn't link to anything that deliberately breaks a setting on my browser. He responded with the suggestion that he had to pay for hosting and bandwidth, and thus was entitled to throwing any advertising in there that he saw fit.

Jason Salas' Weblog
<http://weblogs.asp.net/jasonsalas>

A primer on podcasting for newbies

An earlier casting call I made to co-host a weekly podcast dedicated to all things ASP.NET has gotten a pretty decent response from the Microsoft community, with one thing common: all respondents admitted they had heard of the podcast platform or have listened to a podcast, but hadn't ever produced one themselves. No sweat! Here are two great links that show how easy it is:

☐ Jake Ludington's podcast tutorial: great primer for first-time audio newbies

☐ Harold Gilchrist profiles the audioblogging revolution: awesome breakdown of the differences in the RSS feed for podcasting

Russ Nemhauser
<http://weblogs.asp.net/russnem/>

The Belated Active Directory Corruption Post

I had a power outage and my Active Directory got corrupted. I'd (been using) Windows' built-in NTBACKUP utility to back up the network shares that contained user-created data. What I never knew is that the NTBACKUP utility can be used to back up what is called "system state".

If you have a relatively quiet domain like mine here at home, you should be backing up your system state about once a month.

Science Library Pad
<http://scilib.typepad.com/>

Thoughts on linkblogging

Mostly I do what is now called "linkblogging". I just copy and paste a link of interest to me along with a select few paragraphs.

Also it depends on your target audience. If you're blogging for yourself and a few friends, they probably haven't seen the links you're mentioning. If you're blogging for a target audience of people who are sucking down hundreds of Bloglines feeds per day, they probably HAVE seen any link you're going to uncover.

Customer scare, customer care...

navneeth_snr

Analogue Novice

Location: Bangalore

Post subject: Beware : Digit Makes us April Fool

I brought the Digit Mag of April 2005. The DVD was not working. I just went to news stand and got replaced. But the 2nd DVD was also not working. I again went & exchanged. But no use. From all 3 copies of Digit DVD is not working. This is not FAIR!

Also I just dialed Digit for help!

All Bangalore numbers are fake

hikapil

Warmed-Up Nerd

Location: Jaipur, Rajasthan, India

I think you have mistaken somewhere. I am Digit subscriber for the last 2 years, and Digit is giving DVD's from last 6-7 issues I think. All my DVD's are working properly, and have great stuff in all of them. I suggest you check your DVD drive.

And I have talked to Digit people at their helpline many times, I don't understand why are you are not able to talk with them. Please check once again.

anurag_online

Analogue Novice

You people don't think of the good service that Digit has been providing for so long... It is only one small mistake, which can be removed easily if you have some patience.

Santosh Halemani

Analogue Novice

Location: Dharwad, Karnataka

Hey, many forum members are really cool. I think all of u have girlfriends, that's why u don't get angry, u don't panic, u calm others down.

Ashis

Warmed-Up Nerd

Location: Bhubaneswar, Orissa

May be Technology Fooled The Digit Guys This April!

Santosh Halemani

Analogue Novice

Location: Dharwad, Karnataka

Hey, u guys r a lot better than our country leaders, at least u guys keep it up. I tell u if we post this much letters to the Government, India will be powerful in the next 5 years!

Technovice

Analogue Novice

Hey! Thanks Sachin & Raaabo and the rest of the Digit team. BTW, I think there could be some other ways of using that April DVD:

- Exchanging it with your friend for another DVD and telling him that it is his DVD-ROM drive that is the problem (use the new DVD to prove it) when he complains!!
- Play frisbee with it
- Play fetch with your pet dog!
- Store it as a souvenir in your showcase just to remind yourself that even the best can make mistakes! Cheers!

Explore The BPO Industry

I have been reading *Digit* for over three years, and every month, I find it more and more useful in terms of IT information. The variety of articles on software, hardware, innovations, entertainment and education is informative. We can say it is a complete review of the IT industry.

Over the last five to six years, though, we have seen that the industry has been through many lows and highs (especially in the software development sector). It would, therefore, be useful if *Digit* could publish an article on software development companies—their history, current and future—and what the scope is of small Indian software companies working only for Indian projects and what will happen to mid- and large-size companies working on national and international projects. Such information could be very useful for young aspirants who wish to pursue a career in the software development industry.

I think software development has already reached its heights in countries such as India, the US and Singapore, but other countries are not as computer-savvy. Language in these countries is a barrier. Do you think it would be beneficial if Indians learned a foreign language that could improve their chances of working in non-English-speaking countries? An article on this would be a great help.

Sandeep

Via e-mail

Dear Sandeep,

Thank you for your suggestions and we will try and incorporate them. Generally, though, knowledge of a foreign language would always be an advantage if you want to work abroad.



Spim Exists Because Of Digit?

I don't live in India; my friend has to scan a copy of magazine and send it to me—what a mess. Many magazines have PDF versions we can subscribe to if we cannot get the printed version. All the software is attached to PDF or can be downloaded from the links provided.

In general, a computer magazine exists to educate users about technology and write reviews about hardware and software products, but you scarcely do that. You should not write articles about what one individual faces personally about technology. "Spim is not a big issue right now", but you have given an idea to the stupid people out there that there will be spim all over India. We can as well say, "Spim exists because of *Digit*".

The Internet is not what it was supposed to be; people are finding ways of getting rid of something but that's not their primary task. They are wasting their time doing these things so that they can do clean Internet stuff by the end. Pop-up/Ad-blockers/Spyware Cleaners would not have existed if people didn't get freaky ideas.

And what are you publishing about 'Anti-piracy'? They say these technologies should not exist just because it's a pain. As long as you are a genuine buyer, it's never a problem. On the contrary, it gives you more satisfaction because you are doing something good for the community. I personally would have banned these users but I kick them virtually. It takes months and years to write software...

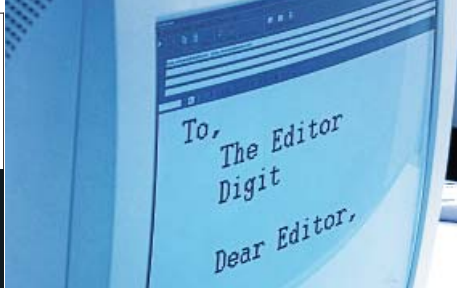
Digit, though, is doing a really good job putting these things in print. I think people in India take any software for granted; they do not understand that software is not their property. You should write more articles about how piracy can be reduced or how software can be protected.

Harry

Via e-mail

Dear Harry,

First of all, thank you for the vote of confidence that *Digit* shapes the thinking of the Indian IT enthusiast. However, we can assure you that they have other sources of information too (the Internet, for example), and are already aware of things like spim. By *Digit* not addressing it, it's not going to go away. At *Digit*, we stare the problem in the eye rather than look the other way. Pop-up/Ad-blockers and Spyware cleaners



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Inbox

are necessitated because twisted minds decided to pollute the Internet.

As for kicking pirates, we are with you, and hence the articles to educate our readers about the various aspects of piracy. We will also include this in future articles about the issue.

Digit, with every issue, also publishes a CD and DVD that carries PDFs from the previous month and earlier. The CD has PDFs for the last three months, while the DVD has PDFs for the last one year. We will be restarting this with effect from July 2005. The last CD/DVD to carry this was with the February 2005 issue.

What Is Anti-Virus Good For?

I am not an expert in computers. But when I buy something, I understand it and use it. As far as anti-virus is concerned, though, I am totally confused. I had Norton AntiVirus installed on my computer with Windows XP (without Service Pack 2) and used to update it regularly all these years.

Hence, I was under the impression that my computer was secure until one fine morning, to my greatest dismay, a window announced that my computer was infected by the 'Bloodhound' virus, and that Norton AntiVirus couldn't control it! This point forth, the computer started working on its own, pasting different words whenever I typed until eventually, I had to re-install Windows to solve the problem.

What do virus definitions mean? With anti-virus definitions being updated, I am under the impression that my computer is protected. But 'Bloodhound' is an old bandicoot and I am surprised that Norton was not able to stop it. So what is the purpose of the anti-viruses?

Is it only to create awareness that there are 'so many viruses' being introduced, or are anti-virus software actually capable of protecting computers from attacks?

C V Padmanabhan
Via E-mail

Dear Padmanabhan,
You may not be a computer expert, but you have hit the nail on the head! It's true, most of us do expect anti-virus software to be impenetrable, and are shocked when we realise that they are just as fallible as any other software. After all, whether it's a virus, an OS or anti-virus software, it's all code, written by imperfect humans.

In your case, you were probably hit by an 'updated' version of the Bloodhound virus, which was rebuilt to bypass Norton's security. Most malicious software writers seldom write code from scratch; instead, they rewrite or

'improve' the virus code, so as to bypass the majority of anti-virus programs.

Virus definitions are nothing but instructions given to anti-virus software about how to detect and remove known viruses. They don't always work, and most anti-virus software need you to also keep the software engine that detects and removes the viruses updated—not just the definitions. Another drawback is the OS, which may have security holes and allow malicious code to pass.

Nothing is 'safe' in the computing world and anti-virus software are just helmets that we wear as riders on the information highway. Accidents will happen. Be as cautious and prepared as possible!

Corrigendum

In the story titled *Pixel Palette* on page 61 of the April 2005 issue, Sanjay Kothari's name was misspelled. The URL, too, was wrong—it's actually www.sanjaykothari.com. We apologise for the error.

Editor's Note On The April 2005 DVD

Dear Reader,

A large percentage of the DVDs that accompanied the April 2005 issue of *Digit* were non-functional. *Digit* has already sent letters to all its subscribers with valid e-mail IDs apologising for the same. All subscribers will find the April replacement DVD along with the May 2005 issue.

A section of *Digit's* newsstand readers also complained of non-working DVDs. Since we are unable to reach out to each and every individual newsstand buyer, we would request all readers who bought the April 2005 issue of *Digit* from their local newsstand to send an e-mail to dvd@thinkdigit.com along with their name, complete address, telephone number with STD code, and the *Digit* Patron code printed on the last page of the issue.

Once we receive a request from newsstand readers for a replacement DVD along with all the valid details, *Digit* will ensure that it will send a fully-functional replacement DVD free of cost anywhere in India.

We once again apologise for the inconvenience caused, with the express promise that we will never let this happen again.

We would also like to thank our esteemed readers for bearing with us.

Sachin Kalbag
Executive Editor
Digit

Seeing The Alternative Is The Future

I purchased the *Digit* April 2005 edition from a newsstand, since I was particularly keen to get my hands on OpenOffice.org 2 Beta. I had hoped that your distribution would include both Windows and Linux versions.

I was disappointed to find that you had included only the former. Have you included the Linux version previously, or will I have to buy your magazine again next month to get it?

The abovementioned problem, though, was the least of my worries, as I found out that apart from 'OoO2b', nothing else could be copied from either the CD or the DVD. Even the wallpapers could not be opened! This double-whammy makes me wonder if this was just a once-in-a-while error or whether it was a whole batch that went bad.

I am returning both the CD and the DVD for replacement, with the hope that you'll send me working copies at the earliest. I can't wait to try some of the other software they contain, including Bitdefender.

I have a suggestion: I do not see any point in replicating the software already on the DVD onto the CD. People with DVD drives are anyway able to use CDs. Why don't you put the most popular or important or essential software on the CD, and leave the free space on the DVD for other things, such as source code?

Which brings me on to the next topic: despite distributing various flavours of GNU/Linux, I believe you are not doing enough. I think much more can be done. For example, you can package Windows and Linux binaries, along with source code for excellent software such as VLC.

There will be many geeks who might want to tweak things around. With the space savings from the CD, you can also include cross compilers such as MinGW (under Essentials) so that Windows fans, too, can enjoy the best of both worlds.

Nishit Dave, Pune
Via e-mail

LETTER
OF THE
MONTH

Tabloid TECH

People And Events That Grabbed Headlines—For Better Or For Worse

Nonsense!

Computer-generated gibberish masquerading as an academic paper has been accepted at a scientific conference.

Jeremy Stribling, one of the three brains behind this plot, said that he and two fellow MIT graduate students questioned the standards of some academic conferences, so they wrote a computer program to generate research papers complete with charts and diagrams. The trio submitted two of the randomly assembled papers to the World Multi-Conference on Systemics, Cybernetics and Informatics (WMSCI), scheduled to be held July 10-13 later this year in Orlando, Florida.

To their surprise, one of the papers—"Rooter: A Methodology for the Typical Unification of Access Points and Redundancy"—was accepted for presentation.

The paper features such gems as: "The model for our heuristic consists of four independent components: simulated annealing, active networks, flexible modalities, and the study of reinforcement learning" and "... scatter/gather I/O server in Simula-67, augmented with opportunistically pipelined extensions."

Nagib Callaos, a conference organiser, said that they were now reviewing their acceptance procedures.

Now, Robot Sex Dolls

This is exciting news from the robotics department: German inventor Michael Harriman claims to have created the world's most sophisticated robot sex doll.

Harriman said, "They are almost impossible to distinguish from the real thing, but ... I will only be happy when what I have is better than the real thing." Now *that's* dedication! Hats off to German engineering!

The dolls are on offer for £4,000 (Rs 3.3 lakh), with extra

charges for adaptations like extra-large breasts. Now *that's* pricing!

The model can also be made to move by remote control, wiggling her hips under the bedclothes and making other suggestive movements—all at the click of a button.

The more libidinous amongst us are apt to say that technology has finally arrived. And £4,000 is a small price to pay for something that's better than the real thing... who says innovation is dead?

Hackers Stole My Sex Video!

A lawsuit filed on behalf of Limp Bizkit lead singer Fred Durst alleges that the same people who hacked Paris Hilton's cell phone were able to pull a homemade sex video off Durst's computer.

The Smoking Gun, a tabloid news Web site, has obtained part of Durst's complaint against various Web sites that posted portions of Durst's sex romp with a former girlfriend.

The document states that the US Secret Service has kicked off an "elaborate investigation"

into Durst's home movie mess. The singer is seeking up to \$80m, or Rs 348 crore (a little too much?) for having his privates put on the Web without consent, according to *The Smoking Gun*.

Durst's lawsuit alleges that Web site operators contacted him to ask about making a deal to sell his homemade sex video online. The lawsuit goes on to say



Gimme back my video: Fred Durst

that Durst declined to make such a deal, believing he had the lone copy of the video.

"The only copy of the Video was on the hard drive of the Plaintiff's computer, and was subsequently stolen therefrom," says the lawsuit.

At the time of going to print, Durst was still trying to have the video and the still photos made from it removed from the Web.

Prince Harry Flunks Computer Test

Britain's Prince Harry has been in the news for several reasons, good and bad, and the latest on

the list is, we assume, bad: he shocked army instructors by failing a basic computer competence test. The test, at Royal Military Academy Sandhurst, England, was part of a familiarisation course before he starts as a trainee officer there.

A source quoted by the *Daily Mirror* said, "Although the test was considerably more complex than just

sending e-mails, instructors were amazed that Harry failed it." Harry, it seems, was worse at computers than other new recruits.

Harry presumably has plenty of offline diversions that keep him from getting online too much.



"Binary... Duh!"

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- 1 Log on to www.thinkdigit.com/digitpatron to register.
- 2 Enter this 16-digit code and score points (you will find your code at this place every issue)
- 3 Your points get added every month and can be redeemed for exciting gifts!

