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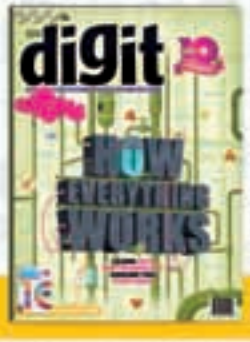

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Lie to me

If you look at all the problems the world faces today, all of them are man-made. People are racist, biased, narcissistic, illogical, greedy and devious, and cause all the pain and suffering in the world. However, there are also social workers, researchers and various groups and organisations that work tirelessly for the greater good. The duality of man, so to speak.

Technology, though, doesn't yet display this duality. Take the net, for example; you'll find anything from terrorist groups to hacker hangouts, and yet you also find Wikipedia and thinkdigit.com – all of it in a matter of seconds, thanks to search engines. This is because current technology doesn't seem to care less about your character, or try and chaperone your actions.

Most of us would immediately be up in arms at the suggestion of smart, moral machines trying to tell us what to do. However, isn't it better for technology to prevent you from doing something that could harm yourself or others?

A popular example of this comes from sci-fi – Asimov's Robots had Positronic brains that were programmed with the Three Laws of Robotics, and had to prevent people from hurting themselves.

We'd be fine with machines that stop a deranged man from committing suicide, or stop a drunk from getting behind the wheel of a car. Perhaps we'd even be OK with machines stopping us from learning how to build a bomb.

Not too many of us would want a machine that would stop us from eating burgers, and perhaps not a single one of us would allow a mere machine to dictate what we should or shouldn't read. Never! Right?

Wrong. They've already been doing it for years!

When you conduct a simple image search on Google, for instance; by default, Google attempts to hide pornography from you – unsuccessfully at times. Of course, all it needs is a simple override from you (Turn Safe Search off) to be able to display all results without censorship.

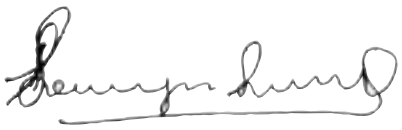
Perhaps we will build manual overrides into an all smart technology in the future. However, a Google-style override would mean that you could order your car's AI system to shut down before you decide to start driving after a few drinks; thus rendering the technology totally pointless.

Our insecurities will stand in the way of such advancements, though. However, just as we cannot imagine life in the uncivilised days of the barbarians, future generations will look back at us with equal disgust. Humanity will get used to machines being better and smarter than us for some tasks eventually, because each generation will have lived with more advanced technology than the previous one.

None of us today question an anti-virus when it claims a certain file is infected. That's because the antivirus is *smarter* than us when it comes to identifying malicious code. I'm allowing my word processor to spell-check this column as I type it, because I *trust* that it's right when it tells me I haven't made any spelling mistakes yet.

Sticking to the drunk driver example, what we'd need is technology that's smart enough to *pretend* to shut down, and stay that way unless the driver tried to do something idiotic. Maybe a more advanced version would *empathise* with a human's need to appear be in control, and compensate for drunkenness by aiding the driver to steer his car undetected. Deceitful, yes, but a lot better than the simplistic black and white, right and wrong solutions that binary machines throw at us today.

We need an AI that's not just smart, but also displays human traits. Only if it exhibits some of the duality of man, will it blend in seamlessly with us, and be allowed to save us from ourselves.



PS: If you want a glimpse into the future, on page 66-67, you'll find a rather complicated-looking road map. Look at the legend on the right and choose a path you want to follow. The colour coding on the left will tell you which year span you're currently viewing.

Some examples of what you'll find:

- *The last ever CD will be published in 2018.*
- *Pets will out-number people by around 2015.*
- *Robots will outnumber humans by 2035.*
- *Brain scans for job interviews by 2025.*
- *Humility will be in partial ruin by 2050.*
- *We'll have a global e-currency by 2040.*

Robert Sovereign-Smith
Executive Editor
editor@thinkdigit.com

"Not too many of us would want a machine that would stop us from eating burgers, and perhaps not a single one of us would allow a mere machine to dictate what we should or shouldn't read"

Liked or hated this column? Write in to *editor@thinkdigit.com* and express yourself.

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Published, Printed and Owned by Nine Dot Nine Interactive Pvt. Ltd. Published and printed on their behalf by Kanak Ghosh. Published at Bunglow No. 725 Sector - 1, Shirvane, Nerul, Navi Mumbai. 400706. Printed at Print House (India) Pvt. Ltd. R-847, TTC Industrial Area, MIDC, Rable, Navi Mumbai 400701.
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- Acer Aspire One
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- Asus GTX 550 Ti
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- G'Five Projector Phone
- Hitachi H2T750854S
- HP Pavilion dm4 1203TU
- HP Pavillion g6
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- Logitech Wireless Solar Keyboard K750
- Plantronics Discovery 975
- Samsung Nexus S
- TDK ST-800
- XFX HD6850
- ZOTAC H67-ITX

Netbook Comparison Test

- Acer Aspire One 522
- ASUS EeePC 1015PW
- ASUS EeePC 1008P
- ASUS EeePC 1018P
- Champion Wbook 1016O
- HP Mini110
- Samsung NF210

HDTV Comparison Test

- Akai LED32D20
- Hitachi LE42T05A
- Hitachi LE46T05A
- LG 42LV3730
- Onida LCD32DRT
- Onida LCO32MMS
- Onida LEO32HMS
- Onida LEO40HMS
- Samsung UA46D6600WR
- Sharp AquosLE820
- Sony KDL46EX720
- VU LC46V86P
- VU LED55T28R

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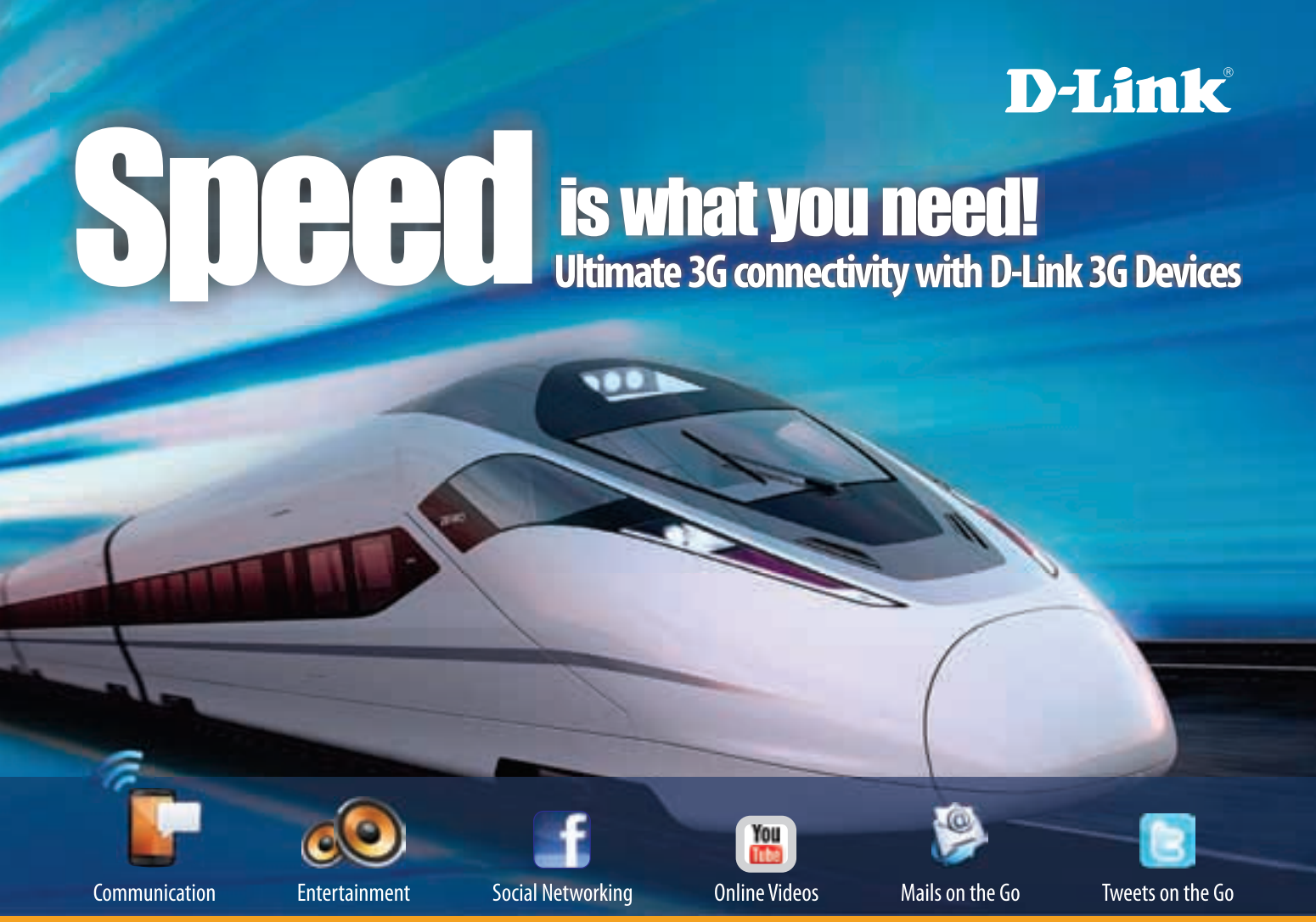

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TweetDeck marries Twitter

Twitter has bought over popular tweet tracking app TweetDeck for a reported sum of $40-50 million

✉ I don't have a single word in my dictionary to thank you for your service. I've been a subscriber since the past few months and a reader of this magazine for the past 11 years. Since then, I've been a silent admirer of this wonderful, knowledgeable, evergreen, day-by-day improving, thought-provoking, Pandora of techno education, a roaring lion of this era of technology, most beautiful flower of the bookworld, and so on.

This is my first letter and I'm forced by the excellent reception of your service, to write this. From the past three months I've been getting Digit on Day 1 of the month and some times before the start of the month. This is exceptional. Carry on guys. I don't want to waste much of your time and will write in later again. So, thanks for this priceless mag and tech. Keep it up and kindly accept my letter.

Kavit Vyas

I thank you for taking the time to write to us. Usually people only think of writing in about services when they have a complaint, and I'm grateful that a few people like you choose to buck the trend. It's letters like yours that push us harder every day at work, and makes us grateful for the excellent human resources that Digit has always been blessed with, at every level.

Robert

✉ Although June is near, I want to request the Digit team for the up-coming anniversary issue in advance. Actually, I have something to say to the team regarding the anniversary issue for June.

Being one of the fans of Digit, I request Digit to have some usable content in both, the magazine and the DVDs.

For example, in the magazine, I request Digit to include some discussions on the hot and current global topic of 'Global warming'. How can technology help in reducing global warming? I'd like to request Digit to cover the latest natural disaster crisis in Japan. I still remember that in the previous issue, Digit included a documentary on 'Bhopal Gas Disaster'. This is one of the Digit's most appreciative work to date, according to me. For this, I heartily give Digit 10 out of 10.

Also, please include free operating system Windows 7 in the DVD if possible so that students like me can try the taste of 'Genuine'. For this, I heartily request Digit not to miss this.

Finally, since I'm a fan of PC games, I'd like to request Digit to include lots of full free games like: FPS and Racing and even sports games, but please exclude DOS based games in DVDs.

I hope Digit will seriously follow up on my request and won't leave a fan like me in the lurch.

Lastly, I wish the entire digit team a very Happy and Prosperous 10th Anniversary in advance.

Sanju Shrestha

Thanks for writing in, and for the anniversary wishes, and for the great suggestion! Yes global warming affects us all, and we'll definitely look at the technology angle of it in the near future. The earthquake in Japan was a terrible disaster to be sure, particularly (and we don't mean to sound unsympathetic) with the prices of all Japanese made electronics rising all over the world. Your request for more FPS and racing games is noted, and we'll surely include more of these space permitting. However, regarding a free version of Windows, there are none. Pirating a copy is the surest way to a prison cell, and you'd lose your technology navigator, we're sure you don't want that!

Michael

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Phones for all?
India's GSM subscriber base has crossed 580 million users, with more than 11.11 million new subscribers in April

All HD on Airtel
Airtel digital TV HD and HD-DVR set-top boxes will now upscale all SD channels to HD-like quality

Google Android vulnerability fix

In the second half of May, folks over at University of Ulm in Germany determined that all Android phones running any version below Android 2.3.4 Gingerbread are vulnerable to attacks over unencrypted Wi-Fi networks. That pretty much means that around 99.7 percent of Android users are at risk.

The German researchers published their findings in a paper entitled 'Catching AuthTokens in the Wild: The Insecurity of Google's ClientLogin Protocol'. Vulnerability is specific to unencrypted Wi-Fi hot spots, where the team demonstrated an attack that gained access to such items as contacts, calendar events and private pictures, including those currently being synced.

By stealing authToken, the hackers can theoretically access a variety of other Google services on the phone. The best solution is to upgrade to Android 2.3.4, but upgrades are hard to come by.

Three or four days after the vulnerability was reported, Google began rolling out a fix, and users were not required to make any changes. It's quite apparent that the fix being rolled out is all back-end, with the way the network handles credentials, connecting to a more secure HTTPS server instead. However, the fix doesn't resolve all issues, and the third-party Gallery app will still leak data when communicating with Picasa.

Response was relatively quick, but the flaw shouldn't have existed in the first place. Connecting to open Wi-Fi networks with mobile devices is not good anyway.

Airtel Facebook USSDN

Airtel has launched the world's first Unstructured Supplementary Service Data (USSD) based Facebook access service in India. This service allows you to access everyone's favourite social network without an internet connection. Airtel users will be able to update their Facebook status for free, and for ₹1 a day, view/comment/Like news feeds, post on walls, confirm friend requests, find and add friends, and view notifications.

Because USSD is a session-based communication, unlike SMS, which is transaction-based, it has significantly faster response times, and is more suited for content-based and interactive applications. It functions somewhat like a menu-based browser. The technology is unique to GSM, and is a built-in way to transmit data over signal channels. Airtel's USSD solution is based on Fonetwish, developed by U2opia Mobile.

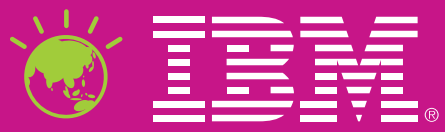
NVIDIA launches GeForce GTX 560

NVIDIA has launched GeForce GTX 560, its latest Fermi-based performance mainstream GPU, which is a slightly more diminutive, cheaper and less able version of the GTX 560 Ti (Titanium), though it has faster clocks. Priced at ₹9,029, it is poised to take on the popular Radeon HD 6870 and consistently outperforms the GTX 460, effectively replacing it. It is based on the GF114 Fermi architecture., the GeForce GTX 560 has been advertised as sufficient to take on today's latest games – including 3D games – at 1080p HD resolutions. The GTX 560 has 336 stream processors, 56 texture units, 32 ROPs, 7 tessellation engines and a 256-bit memory controller.

NVIDIA has given its add-on partners a wide range of clock speeds to place their offerings within, with a core-clock range of 810 - 950MHz, shader clock range from 1,620 - 1,900 MHz, and a memory clock range from 4 - 4.4 GHz. It is rated to deliver 1.08 TFLOPS of single-point precision compute performance, when clocked at 810 - 1620 MHz, and can max out at 1.27 TFLOPS when clocked at 950 - 1900 MHz. Apart from DX 11, PhysX, 3D Vision, OpenGL 4, and CUDA is supported.

NVIDIA has released its

latest GeForce drivers, 275.27 beta, promising 3D vision support for Duke Nukem Forever, PhysX support to Alice: Madness Returns and surround support to Dungeon Siege III. Performance improvements are expected across a broad spectrum of games, with Crysis 2 getting a 6 percent boost, Bulletstorm a 15 percent boost and Portal 2 an 8 percent boost.



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Opera Mini 6 in AppStore
After much waiting, iOS customers can finally use Opera Mini 6 on their devices.

Can't touch the TouchPad?
HP's Eric Cador boldy declared the upcoming webOS TouchPad tablet will be the best in the market. Will it deliver?

Mango update brings 500 new features to Windows Phone 7

Microsoft further detailed the Mango update for Windows Phone 7 at a press conference in New York on May 24, an update that brings 500 new features to the platform, and will take the version number to Windows Phone 7.1, rather than 7.5 as previously rumoured. The release date was left nearly as ambiguous as before - sometime in Fall.

The biggest change is true multitasking, allowing users to switch between all types of apps, including third party apps, which will continue to work in the background. Andy Lees, president of Microsoft's Mobile Communication Business, added: "Third-party applications have been freed from their silos...They're [now] part of the total experience."

Live Tiles have been improved, enabling better glance-and-go information and notifications. Other changes include a version of Internet Explorer 9 (left) for the Windows Phone platform – apparently faster than any other mobile browser out there, a new unified linked inbox, a thread-based IM aggregator, and a new Groups-based contact system. Twitter, LinkedIn, and Facebook are all natively integrated.

Also new was the native application – Local Scout – providing real-time local search results and recommendations for dining, shopping, and entertainment, as well as Quick Cards, giving brief descriptions of related apps, events, and products in search results. Improved Bing for WP7.1 also brings Visual Search and Music search to the fore. WP7.1 will also feature App Connect, an improved way to discover apps in web-based searches.

While Windows Phone Marketplace has over 18,000 apps, and has grown rapidly, we can't help but wonder if it will be enough for Microsoft to carve back a niche in the smartphone market.

Samsung Galaxy S II launches in India, priced at ₹32,890

The Samsung Galaxy S II (16 GB) is officially on its way to India. It is destined for shelves with a June 10 retail release date and ₹32,890 price tag, and can be pre-ordered now. The Galaxy

S II can however be procured a week earlier, as Vodafone has exclusive launch deal, offering the it online at the same ₹32,890 price tag, from June 3.

What's pleasantly surprising is the almost modest price of the Galaxy S II, a phone that can rest easy with the expectations of being Samsung's flagship handheld. Endowed with specs more than sufficient to take on any competitor in the market (definitely, the more expensive Indian iPhone 4), we're glad a top-end premium was not stuck onto this product. Elsewhere, a high price was one of the few cons in a long list of positive reviews of the product.

Salient features of this Android 2.3 Gingerbread include a 4.3-inch Super AMOLED Plus 480x800 display, a dual-core 1.2GHz Exynos processor with a Mali 400 GPU, 8MP camera 1080p HD video recording, and 16GB of inbuilt storage for the base model.

Apple iPhone 4 comes to India with Airtel and Aircel

After various announcements, the last of which was more than a month and a half ago, operators Airtel and Aircel are finally making good on their claims of bringing the iPhone 4 to India. At the time of writing, the duo announced the iPhone 4 will be launching by May 27, almost a year after it was launched in the United States, last June. So far, only Aircel has revealed pricing, and as expected, it has a slight premium attached.

The 16GB Apple iPhone 4 will retail for Rs. 34,500, and, the 32GB version will retail for Rs. 40,900. A requisite bumper, to avoid the 'death grip', will be charged for separately. We were hoping the iPhone 4 would launch with some sort of contract, enabling customers to buy it at a lower price. Aircel has come up with some plans, but we aren't too sure they will entice customers.

Aircel postpaid customers will be able to get the phone for "free" in the Premium Money Back plan, by paying up front, and then availing voice and data plans that are equal to the phone's value, valid for 24 months. The Advantage Money Back plan is the same thing, at half the phone's value and for one year validity. Let us hope Airtel comes up with better plans.

For more details on iPhone 4, Galaxy S II, and Windows Phone 7, refer our up-to-date online coverage at www.thinkdigit.com.

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Lucid VIRTU and Touch BIOS availability may vary by model. Touch navigation requires a touch enabled monitor + Windows 7 operating system.
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Browser Engines
There are very few major browser engines: Gecko by Mozilla, WebKit by Apple, Presto by Opera, and Trident by Internet Explorer

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EXPERIENCE RIA

A chat with Adobe on the latest in rich internet applications

Developers in general and clients often ask the question which Rich Internet Application development tool should they choose – Flex, Silverlight, AJAX or any other framework. But with the excitement over HTML 5 this question in the RIA community has been circulating even more than usual. Where do you see Adobe and its products in the future across the RIA space against the HTML 5 backdrop?

Adobe envisions HTML5 technology along with Flash to complement each other in providing the best user experience for web applications and offering the developer the choice of platform. Flash platform, having been successfully used for several business critical applications offer well developed enterprise grade tooling to rely upon, such as profilers, and automated test tools. Over the years, Adobe has been investing in providing the best tools for HTML development. Adobe's products such as Dreamweaver are extremely popular and successful HTML development tools. With HTML5 offering RIA features, Adobe not only supports this in their products but also actively works with open source communities to strengthen the offerings for HTML5. For example, Adobe actively supports the jQuery community.

What are the different factors a client should consider when having to choose the right RIA development tool?

Depending on the targeted market, different set of considerations apply. Any application that is targeted at general consumer needs to have the platform ubiquity as a key consideration. The chosen RIA platform needs to offer a rich set of library functions that enable the developer to offer compelling user experience. The RIA tooling should support development for a diverse set of target devices – while the traditional browser based web applications running on PC clients are one of the major client platforms, the evolving requirement also includes offering the applications on tablets, cell phones etc that have different device capabilities. The tooling needs to support the complete lifecycle of development, testing, debugging, profiling etc for these devices to offer high productivity. For example, Adobe Flash and AIR runtimes are ubiquitous and also is supported well on a variety of devices. Adobe Flash Builder is a premier development environment that supports RIA development for multiscreen.

While Silverlight is a relatively new framework compared to Flash/Flex, it's not entirely an unfamiliar territory for developers due to the fact that coding is done in .NET which is a more popular coding platform compared to something like ActionScript. Enterprises that work in .Net will find it easier to integrate interfaces and application designs created in Silverlight. Despite the obvious 'not everyone has

P N Anantharaman, Director - Engineering, Platform Business Unit, Adobe Systems Incorporated

Dropbox
Dropbox itself uses Amazon's S3 service for storing your data

IPv6
The no of unique IP addresses is running out. IPv6 is a new 128 bit address for internet servers that should be enough for the forseeable future

Silverlight' and the Flash plug-in is more common, what advantages does the Adobe framework of Flash/Flex and AIR has over Silverlight to retain marketshare and not let developers shift and try out Silverlight.
Adobe Flash runtime, along with Adobe AIR are supported on a broader range of platforms and thus offer choice. Adobe runtimes are supported on Windows, Mac and Linux desktops and also on mobile devices running Android. Adobe works with several device partners and OS vendors to offer high fidelity runtimes for the devices. As Adobe client runtimes support open standards (such as SOAP/WSDL, REST, AMF) to connect to server side, they integrate exceedingly well with not only .NET but also Java, PHP, Ruby and several other back ends. Adobe AIR on Android enables developers to very productively build compelling mobile applications and have been a great success. Adobe's RIA development tools such as Flash Builder integrate seamlessly with the industry leading design tools.

Do you think Adobe faces a threat from the advancement in the new open standards, the push and publicity they seem to be getting because of companies like Apple which refuses to allow Flash on its devices? More and more services like youtube and vimeo now seem to be using both frameworks. Is there a threat of such services shifting completely?
Adobe always has been a supporter of Open standards and views the trends in open standards as a great opportunity. Adobe's different file formats by themselves are open and products like Adobe Flex SDK are open source. Adobe offers products that allow developers to build standalone content that run on Apple devices. There have been over 150 applications that have been created with Adobe's Packager for iPhone that are available through iTunes app store.

The browser based Flash content require Flash runtimes that have interpreter and JIT compiler. These technologies are not allowed by Apple to run on their devices.

As mentioned earlier, the advent of open standards, HTML5 etc strengthen Adobe's position both in the RIA space as well as multi device development. Adobe AIR for example provides a seamless and compelling user experience across a variety of devices.

The inventors of Flash could never have accurately guessed how the people would be using the web today. But none the less no matter how many of the features Flash adds because of the legacy, you can't realistically chuck the platform and start over. Do you think it's an issue you have to work around or do you disagree with this and think it actually acts in your favour?
Flash platform was always designed to provide an immersive user experience that are very critical for today's applications and has pioneered the concept of RIA. These features and hence the platform are no way legacy and are always in the leadership position in supporting emerging trends like devices support. With Adobe AIR and Flash becoming hugely popular on the devices space running on Android, RIM Playbook and so on, the future presents exciting times with Adobe's products playing a significant role in shaping experience.

Where do you see new RIAs going and what sort of modern applications and uses are expected in the future. How is the interaction on the web changing and which technologies will have more impact than the rest over the internet.
There has been a strong trend in the enterprises to leverage user experience as a differentiator for their offerings. Thus, enterprise RIA is a major growth area. The interaction with web is changing in a significant way due to the explosive growth of mobile devices such as Tablets and smartphones. These offer a variety of near term and long term opportunities to the businesses. Gaming on Smartphones is another major area bearing excellent opportunities.

With the increasing penetration of smart phone usage, where does Adobe see its offerings in terms of RIA tools for the mobile application industry and what advancements are expected.
Adobe Flash Builder, which is the premier RIA development tool, offers seamless mobile development experience with the release of version 4.5. With this product, the developer can easily build, test and debug both traditional desktop/browser based RIA applications as well as the same targeted to devices. Moving forward, we will see deeper and broader support for devices consistent with Adobe's vision of multi-screen development.

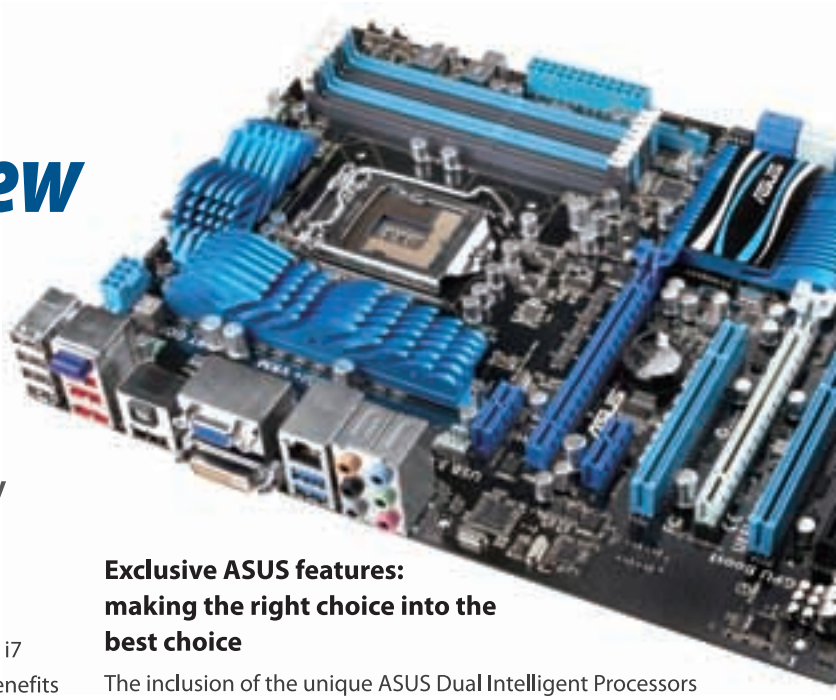
What innovations are expected across the applications space and where will Adobe stand in the future developments?
Adobe is very active in carrying forward its innovation in the desktop products space to the emerging cloud computing.

Adobe continues to innovate significantly in the runtimes space with newer releases of Adobe AIR supporting deeper integration with the native platform.

HTML5 is an emerging area that holds lot of promise as an RIA platform complementing AdobeFlash/Flex. Adobe is strongly committed to supporting these open web standards and this will result in supporting HTML5 development as a part of creative suite tools. Adobe's servers like ColdFusion will make developing HTML5 applications easy through the use of newer CFML tags. Extensive research efforts are underway to explore HTML5 development as a part of Adobe RIA tooling.

In the age of Web 2.0 JavaScript holds a lot of power in RIAs as proven by google with products like maps and gmail. Adobe and more recently Microsoft had found the opportunity in the RIA space due to many of the shortcomings of JavaScript like cross browser compatibilities and performance issues. Now with a lot of standardizations for browsers and performance boosts for JavaScript, do you believe the whole HTML5, JavaScript combination will change the current scenario.
Ajax applications that are based on HTML/XML/Javascript always coexisted with Flash. With HTML5 providing more features for RIA, the HTML/Javascript applications now can leverage the new features. Adobe believes that the developers will benefit from both technologies rather than one versus the other.

Get to grips with new Z68 motherboards



Series-wide LucidLogix Virtu integration and numerous exclusive innovations onboard make the most of new technology

Z68 launch offers extensive media features and accelerated SSD caching technology

Intel's new Z68 Express chipset takes 2nd generation Core i3, i5 and i7 processors to the next phase in power evolution. It combines the benefits of previous H67 and P67 chipset designs with overclocking support for both the CPU and GPU. Moreover, it packs Intel® Smart Response Technology, enabling system responsiveness similar to that of a high performance SSD with the capacity and lower cost of a traditional hard drive. To meet enthusiasts' expectations, Sandy Bridge processors have very capable integrated graphics that are perfect for smooth home entertainment and multimedia. To make the best of those, LucidLogix Virtu offers auto graphics switching technology that lets users enjoy faster HD video transcoding, playback and authoring with Intel Quick Sync Video technology alongside dedicated gaming performance from either NVIDIA or AMD graphics cards, all with no comprise. In this regard, there's really no point getting a new Z68 motherboard that doesn't come with all these features included out of the box. Aiming to best serve the interests of PC users, ASUS has purpose-designed its entire Z68 series to ship with native LucidLogix Virtu support on first launch to realize your performance wishes in one complete package that enables the full potential of both integrated and discrete graphics. This is in contrast to other brands, where only a few models may have such a complete design while additional SKUs receive these features further down the line.

Series-wide fast video transcoding and graphics switching support

With ASUS Z68 motherboards, you tap the best of both worlds. Thanks to LucidLogix Virtu, models such as the P8Z68-V PRO enable both integrated and discrete graphics at once, alternating between them as needed. HD video uses integrated graphics without having to turn on the more energy-consuming discrete graphics card, while the newest PC games in 1080p or higher engage that graphics card for dedicated GPU output. This way, you enjoy all the performance and save energy whenever possible.

Big storage and fast solid state speeds

Another new feature of the Z68 architecture is Intel's Smart Response Technology, which uses an installed SSD drive as a cache for frequently-accessed parts of the OS and other operations. This accelerates access speeds and reduces redundant drive spin to save energy and minimize long-term wear and tear. You get a much smoother system with less delay and shorter loading times, which is definitely a plus.

Exclusive ASUS features: making the right choice into the best choice

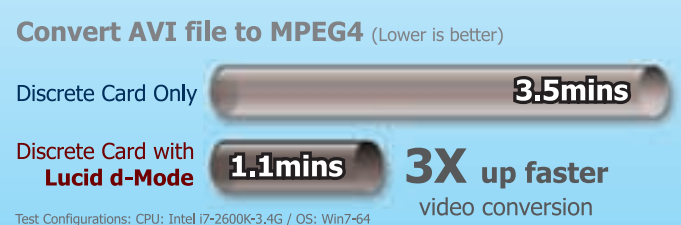
The inclusion of the unique ASUS Dual Intelligent Processors 2 with DIGI+ VRM digital power design makes hardcore overclocking possible for the true die-hard PC power seeker. Better precision for power delivery and tuning means a greater overclocking range, improved stability and more confidence when tweaking the system. The digital voltage regulators lead to almost complete elimination of power loss and unmatched efficiency. There's also the exclusive ASUS UEFI BIOS, which renders old keyboard-only BIOS setups obsolete. This extensible firmware BIOS adds mouse controls and a smooth icon-based graphical interface, so even boot prioritization is made easy with drag and drop, just like in Windows.

Homebase for your next PC build

The P8Z68-V PRO and other new motherboards from ASUS do more than exploit the real power of 2nd generation Intel Core processors and the Z68 Express chipset. With their overclocking abilities and energy saving features, they're the finest Z68 motherboards currently available.

UP CLOSE

All ASUS P8Z68 motherboards support LucidLogix® Virtu™ switching between iGPU integrated graphics and discrete graphics cards regardless of whether you use onboard or add-on VGA output.



Test Configurations: CPU: Intel i7-2600K-3.4G / OS: Win7-64 Ultimate / Memory: G.Skill DDR3-1600 / VGA: ASUS EAH6970 / Software: Media Espresso 6.5

Earth bends space and time around it
NASA proved that Einstene's Theory of Relativity is correct through its Gravity Probe B satellite by testing the Geodetic and frame dragging effect of earth

What's the matter?
NASA installs cosmic ray detector at space station in long-sought quest for antimatter

Bang Olufsen BeoSound 9000

This CD changer is the fastest in the world. A newly thought and out of the box design houses six CDs showing off their album art which makes every BeoSound 9000 unique in appearance. It can store upto 60 AM/FM radio stations. Get yours for $4000.

DenonDN S3700

This direct media turntable has host of features like real nine inch vinyl spinning platter and music access capability. It offers best of both digital and analog, has USB and MIDI control. The vinyl record is powered by Denon DJ's high torque direct drive motor. Awaken the DJ inside you for a mere $799.

Sony STR-DH500

You can pretty much connect everything gadget to this A/V receiver. Apart from Blu-ray and PS3 compatibility it's media port can combine your iPod and Walkman to deliver true 5.1 channel surround. You can even access up to five HD inputs in 1080p HD resolution.

http://goo.gl/gUpZw
Take a peek into Wired's new office space in New York. Not great photographs, but lovely use of space

Mango update features
Windows Phone Dev podcasted featured some Windows Phone 7 screenshots featuring Facebook Chat, Office 365 and more Xbox Live integration

Aiptek PocketCinema T25

Pocket cinema T25 from Aiptek is a truly compact mobile projector. Apt for outdoor screening and on-the-fly meetings the T25 works directly with a PC via USB. It can project images upto 73-inches at 25 peak lumens of brightness. It's capable of projecting HD images as well.

Yike Bike Fusion

The original Yike Bike was quite an innovative and out of the box design. Guys at the Yike Bike design studio have come up with a new refreshed design. Here's presenting the new iteration of the original foldable electric bike the - Yike Bike Fusion. The newer model is heavier by 3 kilos but also cheaper by few hundred dollars. The new design is completely foldable which you can carry around in a back pack. It takes 45 minutes for a complete charge and houses a 450 watt battery. Available for $2,000.

JVC GS TDI

Count another addition to the HD 3D camcorder stable, this time from JVC. Featuring two 3.32 megapixel CMOS sensors. A new high speed imaging engine from JVC processes at 1920x1080i display. It uses an extra low dispersion glass for crisp images. Other features include a 3D optical 5x zoom and 3D sound capability. Start recording in 3D for $1,699.

900 GB SSD drive?!?
Texas Memory System's RamSan-70 packs 900GB of high-speed SLC NAND flash onto a single PCIe card

iPhone as a touchscreen mouse?
Wow-Keys iPhone keyboard lets you input text from your iPhone or let it use apps on it to control your PC. Read more **http://on.mash.to/lm054h**

Slow PC performance, confusion over display cables...

Digit answers these issues and more...

Slow PC performance

Here is my PC configuration
Processor: Intel Core 2 Duo
Motherboard: D865GSA
RAM: 2 GB(two 1GB RAM in each slots)
HDD: 160GB
I have purchased my PC parts in Jan-2007. It was assembled (with 512MB memory) by a friend. It was running good for the first two years and then it started to slow down. After that my PC performance just started to degrade. It takes a long time to boot and shut down. Whenever I try to open a new window, it takes ages. Please help me diagnose this problem. I am also planning to install Ubuntu in my PC after improving my system performance.

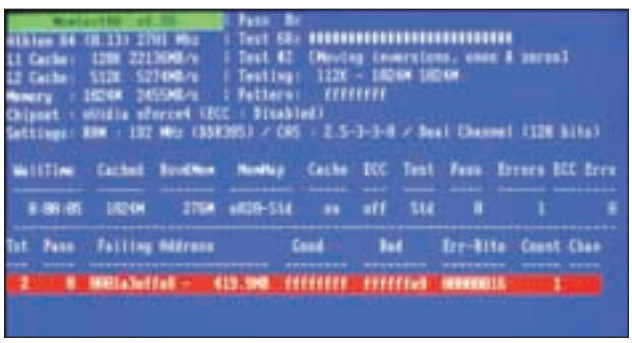
Duraimurugan Tharmaraj

Running a system for 2 years means that your computer might have gathered a lot of junk. Most software leave something behind even after uninstalling.

Defrag your hard drive. This tool can easily be accessed by right-clicking on a drive, clicking on properties, and then using the defragmentation tool under the tools tab.

It could take quite a long time.

Again reinstalling windows from scratch could help immensely, but will require a lot of work. You will need to back up all your data to a safe location, format your drive, reinstall windows, and then restore your data and applications over time.



Try using Ubuntu with your system. It generally performs better than Windows anyway, and you may immediately see some improvement. if it too runs slowly.. then there might be a hardware problem. Since RAM is the latest addition, it is likely to be the culprit. Sometimes mixing RAM modules of different speeds causes issues.

Run a test on your RAM. Windows includes a tool that is accessible through your boot menu. Press F8 while booting, and then when the menu appears, press tab to go to the memory test. You can also use Memtest86 (http://www.memtest.org)

DVI or VGA cable?

I'm using NVIDIA GTX 460 card and my monitor is Dell ST2220m which has a DVI and VGA input. Right now I'm using VGA input on the monitor through DVI port on graphic card (using DVI to VGA converter dongle). Should I buy new DVI cable for monitor. Will it increase any visual quality. I want to work on animation and vfx.

Kiran

Your graphic card outputs digital signals and if you use a DVI-to-DVI cable, there is no conversion to analog mode and thus hardly any loss from source to the monitor. If you use a DVI-to-VGA adapter, the digital signal from the graphics card will first be converted to analog signal as VGA cable uses analog signals. In the conversion there may be a slight loss in the signal quality, but the difference is not noticeable unless you are using the highest resolution on your monitor. If you want the best image quality, it is advisable to shift to a DVI-to-DVI cable, as ghosting is prominent at higher resolutions with a VGA cable.

From the Thinkdigit forum:

Installing Backtrack

I tried installing the Backtrack that i got from one of my Digit DVD and I reached up to partition manger. I have already installed Windows 7 in my system. I have drive D:\ (from Windows) which has 150 GB and I used only 33 MB in it. When Linux detected the hard disk and i choose the manual partition and selected this drive and allocated 100 GB to install Linux. In the Linux partition manager it shows 'unused'. When I click forward button it gives me an error "No root file system is defined. Please correct this from partitioning menu." Kindly help me on this.

Sivakumar

You have to select the mount point for the partition.Look around, you'll find the option for selecting the mount point and choose /. The / symbol stands for root filesystem. Also choose a file system like ext4 and then continue. My advice will also be to have another partition with the mount point /home

In case you are having issues with the partitioner setup check out these pages: http://bit.ly/iCLnxG and http://bit.ly/k9rqM3.

For the keyboard warrior

Agent001 goes on a quest for gaming keyboard. Read on to find out what he eventually bought

Agent 001
agent001@thinkdigit.com

A bad carpenter blames his tools. But we say a good one, might be held back by the lack of proper tools. The same goes with gamers.

Call me old fashioned, but I'm a keyboard and mouse gamer. Sure, I might go for the optional controller for button mashers but I generally don't use gaming wheels and such. Not every gamer needs to invest in a fancy keyboard with 15 macro keys, but there are some things that are necessary, even for very casual gamers. For example a backlit keyboard is a real saviour in case you're gaming in a non-optimally lit environment.

Shopping for a gaming keyboard isn't exactly a whole deal of fun. Asking one dealer for a gaming keyboard, I was showed a couple of mice and keyboard combos! Oh the horror!

But when the good stuff comes out, it's all too easy to get carried away by the bling and purchase something that's unnecessarily expensive that is not really as usable as something that was cheaper. I saw quite a few options from Razer – the Lycosa, Arctosa, and even the Nostromo. From Logitech, I saw the G510 and G15 along with the G13. The Nostromo and G13 are somewhat of a novelty and these are called gameboards as opposed to gaming keyboards. They don't have regular keypad layouts. Instead they complement regular mice and keyboard combos giving you a hybrid device that has a lot of the controls available for a single hand. However, using it takes some getting used to. Such gameboards don't work for games that need a lot of control buttons like *Dragon Age* where multiple spells and other actions need to be mapped to keys, neither are they a substitute for a mouse as they lack the extra bit of much needed accuracy. They can be used with a mouse however.

I ended up with the G510 for ₹4,650. Earlier the original G15 had serwved me for over 4 years, but I figured it was finally time to replace it as the rubberised coating has been steadily eroding, however, the keyboard remains in full working condition. I haggled over a discount and I managed 300 bucks off on the bundle (which included a mouse – read my mouse buying guide on the other side).

Microsoft to the rescue of iOS developers
For iOS developers who wish to develop apps for WP 7 , Microsoft has come up with the iOS to WP 7 API mapping tool available at http://bit.ly/eLYMTX

History of email
Check out the history of the popular communication method called email http://on.mash.to/igC0Wz

Distro hopping: pain free

Switch between distros without finding yourself in a mess!

Vaibhav Kaushal
readersletters@thinkdigit.com

One thing which Linux and OSS enthusiasts are never tired of speaking is the word 'freedom'. Along with freedom, you also have a choice between 200 Linux distributions! However, if you're inclined towards changing distros (also known as 'distro hopping'), the one thing which you might have missed in a new installation each time is your home. We are not talking about bricks and walls but about your $HOME directory. Here we show you the ways in which you will enjoy distro hopping and keep the things the way you like them!

If you have a separate /home partition, do not format it during installation

Method 1: With a separate / home partition

This works well if you have a separate / home partition. The procedure to install the new distribution in such a condition is quite easy. Before you begin the new installation process, open the `/etc/passwd` file and note the UID and GID of the user. Ensure you select advanced partitioning mode and mount the previous /home partition again as /home, but ask the installer not to format it.

Also, the username of the new user should be the same as that in the previous setting. This will make sure that the $HOME directories will match. Also, make sure that the UID and GID of the new user being created matches the UID and GID of the user on the previous installation. If the installer of the new distribution does not allow you to edit the UID and GID, leave them as they are.

After the installation finishes, your new distro would have the settings and files as had the previous one. However, if you were not able to change the UID and GID of the user, its best to first login as 'root' into the system in the first boot and run the command:

```
chown -R vaibhav /home/vaibhav
```

In the above command, we assume that the username (after installation) is 'vaibhav' and the home directory of the user is '/home/vaibhav'. To be on the safe side, you might like to change the owner group from what it was to the primary group of the current user. For that, you must know the name of the primary group to which the user belongs. Run the command: `id vaibhav`

The output is as follows:

```
uid=500(vaibhav)
gid=500(vaibhav)
groups=500(vaibhav)
```

Notice the part "`gid=500(vaibhav)`". It tells that the numeric GID of the user 'vaibhav' is 500 and the name of the group is 'vaibhav' (as well). Now, that you know the group to which the user belongs, you can run the command: `chgrp -R vaibhav /home/vaibhav`. This will set the owning group of all files and directories within /home/vaibhav to the current GID of the user and make sure that you do not have any permission problems. Log out of the root user and login with the username whose file ownership you have just changed. Once again, you might need to adjust appearance if the theme breaks.

Method 2: Without a separate /home

If you do not have a separate partition for the /home directory, things are a bit tricky. All you have to do is to:

1. First, mount the root partition (/) of the previous installation.
2. Sometimes it can be done easily by clicking its shortcut in the file browser. If that does not work, you can use the following commands to mount `/dev/sda1`.
   ```
   sudo mkdir /tmpmnt
   sudo mount /dev/sda1 /tmpmnt
   ```
3. We assume that `/dev/sda1` is your root partition, although you should check it on the previous distribution. If you do not know how to find which is your '/' partition for the installed Linux system, just open the terminal in the Linux distro currently installed and type the command:
   `mount | grep -i "/ type"`
   It should show something like:
   `/dev/sda1 on / type ext4 (rw)`
   You can see the first part which says `/dev/sda1`. This is the partition where you have the root directory and has to be mounted during the installation.
4. Run the command `sudo nautilus` and navigate to `/tmpmnt` (press `[Ctrl] + [L]` and type in the address in the address bar). Now, go to `/tmpmnt` and remove all the directories from the partition, save the 'home' directory.
5. Now, unmount the partition by clicking the eject button (usually a triangle pointing upwards with a line below it) on the nautilus window. If you used the terminal to mount, use the command:
   `sudo umount /tmpmnt`
   to unmount. Remember that the command is `umount`, not 'unmount'.
6. Now your partition is empty, except the home directory residing on it. It is precisely the condition as the previous one where you had a separate / home partition. You can now install the new distro on the same partition. The only thing you must take care

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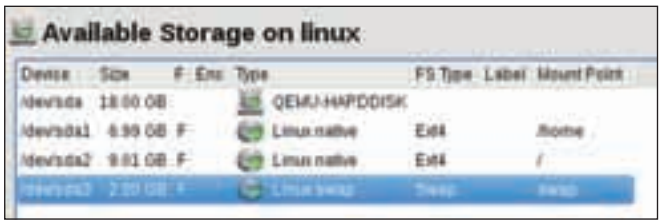
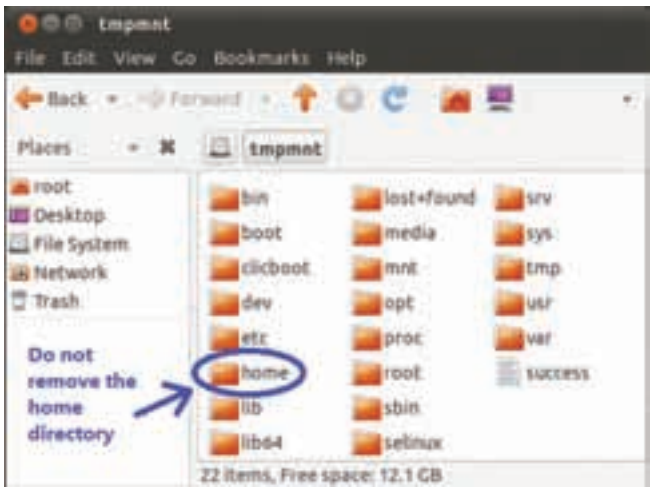


A separate /home will make it easy for you in the future

once again is to not format the partition where installation has to be done. You can once again set the UID and GID of the new user you would create. If that is not possible to be done by the installer, you can follow the steps described in the previous method to change the user and group ownership of the directory using the root account.

Remember however that none of these techniques will allow you to preserve system-wide settings such as network connections because such settings reside on the /etc/ directory. While it might be a good idea to copy-paste /etc/ as well, it can be hazardous in many ways. Software features change from one version to another and so do their configuration files at times. If you use the older configuration files, it may break something or the other.

Some important files in the /etc/ should always be recreated by the installation (e.g. /etc/fstab). Although not mandatory, old files can create large problems. At other times, presence or absence of old symlinks of config files can also create trouble. So it's best to configure a few settings, such as network connections by hand after a new distro installation. However, to save personal files and preferences



If you have no separate partition for /home, make sure you do not remove the /home directory when removing other content from the / partition

(such as firefox settings, your old Evolution mailbox and preferences, settings stored in empathy for chat etc.)

There would, however, we believe no worries past reading this small guide about preserving your files, settings and preferences when inserting the Linux disk into the tray.

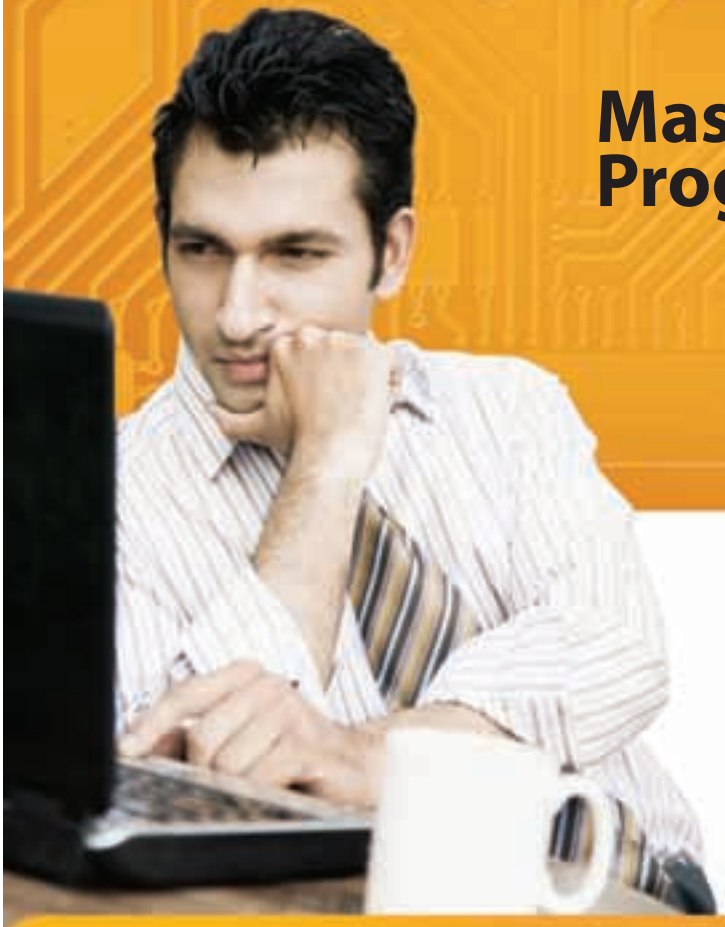
[Fast Forward]

What does the future hold for technology? We try and make some educated guesses, and also ask some of the smartest people on the planet for their opinions. Here's a quick list of what lies ahead in this issue

FEATURES

COLUMNS

प्रज्ञानं ब्रह्म
Manipal
INSPIRED BY LIFE



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Synthetic Telepathy

Synthetic telepathy is the process of communication using one's thoughts alone. The first step in this direction is the Audeo voice synthesizer developed by Michael Callahan which enables voiceless communication. The device places sensors on the user's neck to capture electrical signals being sent from the brain to the vocal chords, which are then amplified and decoded by the onboard software and played as speech through speakers. However, the device currently requires days of practice, and the resultant speech is also quite slow. In addition, Pentagon's DARPA has initiated the Silent Talk program aiming to enable communication without the use of speech by reading neural signals. The US Army is funding similar research projects in some US universities whose aim is to come up with a computer interface capable of sending messages by use of thought alone. The idea is to develop a helmet which includes an electroencephalograph (EEG) device to read the brain's signals which would then be interpreted by an onboard computer and translated into words. In a recent experiment, a robotic limb was operated by a monkey using one such device. However, if you are getting excited about making creative uses of telepathy, take a back seat, since it will take at least 10 years to come to fruition.

Future of Communication

How we may communicate in the future can be predicted to some extent by looking at some of the technologies being researched right now with a projected implementation 15 years down the line.

Nikunj Jha
readersletters@thinkdigit.com

1st January 2026

A new year and a new hangover. As Sanket wakes up, he surveys the damage from last night and spots the first casualty of the night before – his beloved 3D phone. It was an old model, but it was in his comfort zone. It had all the basic features – making 3D video calls and playing cheap holographic interactive games – nothing fancy. Plus, it had all the cool augmented reality apps, handpicked and customised over the last three years. Sanket especially liked the one which could identify faces of the people in front of him and display their Facebook profiles instantly. It really came in handy given his propensity to forget names. Well, at least his afternoons were exciting, given the entertaining experience cellphone shopping usually provides...

While he browsed the shelves of the electronics stores, those annoying audio spotlight advertisements kept coming his way. Considering the kind of nuisance they were, there

Mobile phone implants

In 2002, Royal College of Art designers came up with a tooth implant that consisted of a receiver and transducer. The receiver picks up mobile signals and a transducer converts them to vibrations that travel through jaw bones and is audible only to the user. Since then, there have been several innovations. Similarly, a six-axis piezoelectric accelerometer detects jaw and head motion is used to dial, while you type using hand and jaw gestures. Batteries use a Seebeck-effect strip to convert body heat into electricity. ROM, memory and other components are also implanted similarly and pieces communicate with each other using flexible circuitry and conductive tattoo ink!

Integrating augmented reality with mobiles

Augmented Reality enables you to determine the user's location and displays computer-generated content according to a user's surroundings. It uses GPS and runs image recognition algorithms over the mobile camera images to determine the user's location and then retrieves geographical coordinates and nearby landmarks from an external database. This information can range from prices and comments on local businesses.

3D Holographic Video Phone

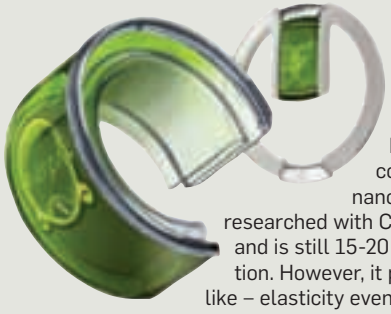
The idea of 3D phone is straight out of Star Wars where Princess Leia communicates with Obi Wan Kenobi using a 3D holographic telepresence device. The first 3D phone is Samsung's B710 which converts 2D content to 3D in real time and is already available. It projects a pair of images, slightly offset, to give a feel of the image popping out of the screen. In the near future, we'll see Google Android v3.0 and Samsung W960 3D smartphones. Another company Kingyo Xie has developed a concept phone called iHolo that merges infrared, Bluetooth and touchscreen technologies to provide an interactive holographic experience. However, it won't be commercially available till a couple of years from now. The real kicker – none of these require accompanying 3D glasses. Researchers from the University of Arizona have demonstrated a photorefractive polymer which can be imprinted with a new holographic image every 2 seconds. However, it will take a frame rate of several images per second to achieve fluid 3D motion. Currently, it uses 16 cameras arranged in a semicircle to provide full parallax i.e. users can view it from different sides and even top and bottom and they will view different perspectives of the holographic image.

should have been a way to avoid them. One second you are standing in serene silence admiring the beauty of the devices, the next moment a synthetic female voice is blabbering in your ear, waxing eloquent about the seductive qualities of having a cellphone implant. He could imagine spies and detectives wanting to implant a cellphone in their bodies, but for him it was a bit too much. Still, considering the number of people going in for it these days, peer pressure might just get to him soon. Speaking of audio spotlights, they were quite useful when one wanted to learn the features of a particular model. Just stand in front of the display and audio washed over one's ears smoothly and when you were done, you could just move out of its direction; no annoyance to anyone and no sales people.

Sanket looked at those new models of telepathic phones that had come in. It sounded brilliant as a concept. He could an make entire phone call directly by thought without even moving a finger or even speaking a word. And it would give him immense freedom too. He won't have to listen to a boring speaker in those conferences he had to keep attending as part of his job. He could converse with anyone while looking attentive and mindful as ever. Although they say that you need to focus on what you want to say to really convey it, considering how astray his thoughts go at times, Sanket decided wait on that.

So, he picked one of those nanotech driven phones that had come up. They were quite brilliant with their flexible body that could be worn like a watch or stretched across one's waist like a belt. Looked trendy too with its colour changing abilities, self-cleaning and charging features, it was more like a fashion accessory without any maintenance required! It was quite costly, but entirely worth the money.

He needed to buy his six-year old son a phone too, since all the kids in his school had one. So Sanket bought him a primitive paper phone model. It was good for the brat – he could bend, squeeze and treat it as roughly as he liked. Only such a durable phone could survive the various tortures he was going to expose his phone to.



Nanotechnology and cell phones

Nokia recently presented its concept phone Morph which uses nanoscale technology. It is being researched with Cambridge Nanoscience Centre and is still 15-20 years away from materialization. However, it promises revolutionary features like – elasticity even at the electronics level. And harvesting of solar energy to power the device by use of nanograss. Read more on nanograss here - http://bit.ly/nanograss

Paper Phone

Researchers at Arizona State University have developed a flexible smartphone called PaperPhone. Based on e-ink technology, it's like a foldable plastic sheet about the thickness of a cardboard. It can be operated by bending the corners, squeezing or by writing on it with a pen. Moreover, the user can define the function controlled by various actions which means you can choose if bending the top right corner makes a call or opens the music player. Beneath the plastic sheets are flexible printed circuits with resistive bend components which can detect the bending of the phone.

Point A to Point B: How things have changed

Ever wondered what the actual potential of man is? It's difficult to predict anything while one rests in his own timeline. But one peek through the fabric of time and you may realize what glorious future awaits.

Auto Matrix

Auto Matrix is a vehicular traffic management system that monitors automobiles using complex routing algorithms to direct cars through the city roads. It successfully simulates vehicle traffic congestion due to heavy usage or traffic incidents, and the effects on surrounding areas and figures out the congestion free path for a vehicle through the city roads. The algorithm also has heuristic prediction models that account for special occurances like festivals and transmits the data directly to the cars on the streets using RFID(Radio Frequency Identification)].

Virtual Mechanic:

Using augmented reality, the mechanic receives additional three-dimensional information on the part being repaired. Apart from the real environment, virtually animated components are seen along with instructions on each of the working steps through headphones integrated inside the goggles.

AgentOO1, with inputs from: Raj Saxena
agentOO1@thinkdigit.com

Hello, it's me Agent 001 and the Year is 2030. Things have changed a lot since I was a young geek. As an ageing gamer, rather than matters such as the choice between HD 6990 and GTX 590 more immediate concerns like getting to the Digit office on time are on my mind. Yet technology is always at hand.

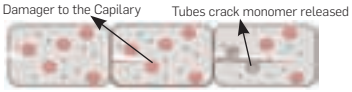
Traffic jams are now a thing of the past and the cursed long waits no longer exist, thanks to the Smart Cars and the Auto Matrix that exists today which have taken over the concept of what a car used to be. Today's cars are much more than just cars, they are high tech computers. It really feels good when my car gets itself out of the garage and all ready to go when I come out of my house in the morning, and the best part, I don't have to drive my car, drives itself!

Of course machines will be machines. Hit a snag in the car with no one around to help? No problems, the virtual mechanic is there to help you with a highly Interactive Virtual Reality (VR) Interface, it gives you voice and 3D visual help how to get your car back on track. Augmented reality has even revolutionised the old car windshield. Now we get tons of relevant information overlayed on the actual scene. Kind of distracting but certainly useful. Oooh there's an offer at Starbucks!

Advancements in Polymer Technology has lead to the development of Self Healing Polymers and photo chromatic paints, something I personally like as it keeps my Hybrid as new as the day I bought it. This technology has also revolutionised the aviation industry.

Present day planes can heal themselves from the wear and tear they get when travelling at high speeds. They have smart seats which use body monitors to sense a tense passenger a calm him down by playing soothing music or ordering a drink.

The good old Railway is next pit stop in the transport exploration of my time. A recent journey on the Delhi-Mumbai High Speed Maglev Corridor took me around three hours. Magnetic Levitation is now an old-tried and tested technology but what powers it is new - Hydrogen fuel cells. Hydrogen for these trains is now developed from human and animal waste using the Microbial Electrolysis Cell which makes hydrogen available throughout the country rather than at some distribution/refilling stations.



Self-healing Polymers

These materials repair damage caused by mechanical usage over time. Fragile glass capillaries or fibres are imbedded within a composite material. The resulting porous network is filled with monomer. When damage occurs, the tubes also crack and the monomer is released into the cracks. Other tubes containing a hardening agent also crack and mix with the monomer, causing the crack to be healed.]

Photo chromic polymers

Photo chromic polymers change colours when exposed to sunlight/UV, and reverts to its original colour when the sunlight/UV is dimmed or blocked. After absorbing the energy of sunlight/UV, its molecule structure is changed, which causes its absorbed wavelength to be changed allowing a colour to appear. The change occurs in a second.

Microbial Electrolysis Cell (MEC)

Whilst Microbial Fuel Cells (MFCs) of today produce an electric current from the microbial decomposition of organic compounds, MEC's partially reverse the process to generate hydrogen from organic material by applying an electric current. Electrogenic microorganisms consuming an energy source (such as acetic acid) release electrons and protons, creating voltage.

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Thorium - the safe way to energy security

When I was growing up in the 60s many science writers would like to make predictions of the science and technologies of the future - typically for the year 2000, an obvious choice. Looking back, very little of this proved accurate. Take the laser as an example; nobody saw that coming, and even when the invention occured, nobody had any idea of the extent to which lasers would later be used. So, I am not going to try. But there is one predicition regarding future technologies that I am confident to make - whatever we develop, we are going to need plentiful energy.

The lack of investment in the west in viable energy is very worrying, particularly after the recent problems in Japan, which have hightened irrational fears about nuclear power generation. Many western governments play around with so-called renewable energy sources, such as those ridiculous bird-killing wind turbines. Expensive and next to useless. We need energy generation with balls, not tree-hugging hippy nonsense like this. Ultimately, there is only one truly renewable energy source - the Sun. We may well one day be able to harvest solar energy with sufficient efficiency, but in the meantime, we should go nuclear, big time; not with the well-known technologies, but with thorium.

There is not enough space here to go into the details of how thorium is used in a fission reactor, but in brief: it would usually be used in a liquid salt form, transforming into a uranium isotope after neutron bombardment. Subsequent reactions create further uranium, and the heat given out is turned into electricity.

So, why thorium? There are many reasons. There is much more thorium in the earth than uranium, and India is sitting on something like 20 per cent of the world's deposits. A neutron beam drives the process and there is no chain reaction; this means no possibility of a melt-down or nuclear explosion. The waste that is created - about one tenth of a per cent of the waste from current reactors - is far less dangerous than from present-day reactors and is removed continuously; you do not have to shut down the reactor to remove spent fuel rods. Remarkably, a thorium reactor can also consume the plutonium and other waste products from normal reactors, thereby helping solve the main problem those reactors create. The thorium process also does not create plutonium as a by-product, and so it cannot readily be used to create weapons. That latter point speaks volumes for the intentions of governments in continuing with normal uranium-based nuclear generation.

Edward Henning
Former Editor-in-chief, Digit

Edward Henning was a teacher of maths and physics until stumbling into technology journalism in 1984, one week after buying an original IBM PC. He has worked on several technology magazines, most notably PC Magazine, and recently, Digit.

While the west sits on its hands on this one, at least there are some moves in India towards thorium energy generation. These moves should be accelerated strongly, particularly considering how much thorium there is here. China is ahead, and a few months ago announced a thorium reactor development program. My hope is that India and China driving this development will make the west wake up and get moving.

One point that is often not discussed is that electricity may well be a clean form of energy, but it is not always the most convenient, mainly because it is relatively difficult to store. Although we will one day run out of natural oil, I still think hydro-carbons should play a big part in our energy future. It is difficult to imagine a more convenient energy source than hydro-carbons for cars and planes. Electric car - what a silly idea! Also cooking - what a backward step it would be to turn from gas hobs to electric. No real cook would want such a curse.

So, we need to move towards generating hydro-carbon fuels from carbon dioxide and water. There was some research and development in this using catalytic methods, but it proved too expensive at the time. I suggest that given cheap and abundant electrical energy from thorium, it would be well worth our while pouring large sums into developing hydro-carbon fuels. If the time ever comes when fusion reaction is actually made to work, or solar energy capture becomes practical, both of those would produce electricity, and we then convert that into to whatever hydro-carbon forms are most convenient. In the meantime, we need thorium.

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Power Unlimited

Wireless power, using a loaf-shaped device to power your entire house, mechanical strain generating electricity; the future of power generation has endless possibilities

Anoop Verma
readersletters@thinkdigit.com

For Monica Dutta this had been a demanding day, but nothing that she could not wash away in a warm bubble bath. The lights came on automatically the moment she stepped in the bathroom. The tub was brimful of water at just the right temperature. Sure, it took a lot of electricity to power such facilities, but in year 2025, electricity was no longer a problem. Every house had a range of options to power all kinds of devices and services. Monica had gone in for Wireless Power System to take care of much of her electricity needs. The systems in her house were capable of drawing power wirelessly from a remote microwave transmitter, owned by the local power utility company. But it was not as if all the electricity that the house needed came from the transmitter; the house was also capable of generating electricity on its own through the system of piezo electricity.

The floors were embedded with Piezo Electric Generators to convert every bit of mechanical strain caused by movement into electricity, which got stored in super efficient Nano-tech Batteries, remotely connected to every system in the house. In fact, in year 2025 many of the busy arterial roads had been fitted with piezo electric generators, which converted the strain caused by vehicular movement and footfalls into energy that got fed into the grid.

After emerging from the bathroom, Monica went to her sitting room, and ensconced herself on the sofa. "TV," she said. A paper-thin screen immediately dropped down from the roof and stationed itself at optimum distance from her eyes. Through the movement of her eyelids she browsed the channel that she wanted to watch. Whenever she moved her head, the screen automatically adjusted its position to remain in front of her.

Monica's house had an efficient AI to take care of many of the routine chores like security, cleaning, cooking, maintenance of the temperature at optimal level, management of music, entertainment systems, as well as the workstation, and much else. The AI drew its power wirelessly from the grid, and also from the nano-tech batteries. As a form of extra security, Monica had the AI fitted with Bloom Box, which could keep the emergency functions in the house running even if the power supply in the grid and in the nano-batteries failed.

Even the car that she drove drew its power from the grid. Yesterday she was zipping down the super-expressway, bound for an important meeting, when a beep alerted her to the fact that her car was about to run out of power. Without batting an eyelid she pressed a button on the dashboard and the car's computer system automatically got connected to the microwave transmitter located close to the expressway. The battery got charged while the vehicle continued to cruise down the highway. Solar power was also very common, not only for individual homes and offices, but also for vehicles. She had another car that was capable running solely on solar power.

Piezo Electric Generators

In Israel, engineers have conducted successful experiments by embedding small stretches of the road with Piezo Electric Generators, which can convert mechanical strain into electrical current. It is possible that in one or two decades electricity generated from human movement will be used to fulfil the power needs of crowded places like railway stations, airports, movie theatres, amusement parks, etc.

Bloom Box

Bloom Box is based on the fuel cell technology and uses liquid or gaseous hydrocarbons (such as gasoline, diesel or propane) to generate electricity. The device is going to be of the size of loaf of bread and yet it will be able to power an entire house. The Bloom Box uses thin ceramic plates, which serve as the cathode and anode. Oxygen is fed into one side of the cell, while fuel is supplied to the other side, this leads to a chemical reaction and electricity gets generated. By 2025, advanced models of Bloom Box could be available.

Nano-tech batteries

Nano-tech batteries use billions of tiny, virtually identical nano-structures to perform the task of receiving, storing and delivering substantial electricity. Since nano-structures are capable of interacting at high speeds, these batteries can be recharged very fast and have larger charging cycles. Researchers working at the Maryland NanoCenter, in University of Maryland, have already developed the prototype for a nano-tech battery for daily use.

Solar Energy

The technology by which we can harness solar energy has been improving by leaps and bounds. Scientists are currently engaged in improving the scope and efficiency of solar panels by employing principles of nano-technology. It is possible that in future we might have solar panels that also incorporate a nano-battery, so that the power that gets generated will be directly stored in the panel itself before being transferred to the home, office or the grid. Some scientists are also exploring the possibility of using an array of mirrors to focus the sun's rays to a small area, which then becomes very hot and is used to drive steam turbines that will generate electricity.

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Entertainment Unlimited

Much of our time at home is spent entertaining ourselves. Whether its movies, music, television; we always want something on. What will digital entertainment look like in the future?

Sushil Reddy
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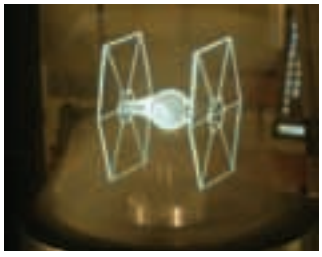
Pixel Cloud

The concept and design of the Pixel Cloud was developed and produced by the Jason Bruges Studio in London. A pixel cloud comprises of hundreds of polycarbonate globes, each fitted with 24 LEDs. Today they form a part of installation art but maybe someday each globe can be manipulated like a pixel in a screen is. Every globe is individually controllable thanks to specially developed software. Real-time color and light updates perpetually change the three-dimensional LED lighting installation's appearance. A flexible circuit board ensures each globe is uniformly illuminated. Hence, a variety of images/videos can be generated using a 3D matrix of pixel cloud.



3D Hologram Laser Technology

Recent breakthroughs in rewritable and erasable holographic systems enables 3D holograms constructed as a screen on the wall (like flat panel displays) that shows 3-D images, with all the image writing lasers behind the wall or it could be like a horizontal panel on a table with holographic writing apparatus underneath.

Like most people, the first thing Baiju does, especially on weekends, is to get himself updated with the news and current happenings throughout the world. He has his media center turned on for the day. "9 June 2045", it says while it fired up. A media center consists of connected modules like a digital eBook, a smart jukebox and a pixel cloud.

Firstly, he sets the media center to the digital eBook mode, which has real time access to satellite information and news feeds from all around the world through the internet. It has a sensor-based touch screen and an audio-visual interactive imaging interface, connected to a common network portal (connecting all such devices) and also with other such devices via a peer-to-peer network system. So, he checks out the news and reads a bestseller for a while. Despite the Attention Deficit Hyperactivity Disorder pandemic that broke out last year people have still not lost interest in reading. But of course attention spans are not what they used to be once upon a time and naturally after a while he feels like listening to music. So to get into the groove, he sets the media center to the Artificial Intelligence (AI) enhanced "smart jukebox" mode. It plays playlists of his choice but also suggests other songs based on his current mood and also by sensing the pattern of his previous type of song selection. The surround sound of the nanotech speakers spreads strategically throughout his home. Lyrics are displayed on the wall of his choice, using visual communication tool of the jukebox. It gets Baiju into the mood and he starts singing and tapping his feet, completely engrossed in a wholesome musical experience.

In the evening some of Baiju's friends come over and they all decide to watch a movie. Hence he switches the mode to pixel cloud. Nanotech Quantum Light Emitting Diodes (QLED) and 3D hologram laser technologies together project the movie content in the room using a cloud of pixels capturing all human senses (visual, audio, touch, emotions, even smell) and hence almost creating a parallel world in which the viewer can be a part of the movie. While on the move, the nano-electronics inside his active contact lenses receives video streams and displays images directly onto the retina.

Nanotechnology - Quantum Light Emitting Diodes (QLED)

The video display technology available today is Organic Light Emitting Diode(OLED), but they are limited to small screen sizes and are very expensive. QLED's will allow designers to make ultrathin, flexible, and even transparent video displays that are not possible with existing technologies. QLED's will deliver 30 – 40% luminance (brightness) efficiency advantage over OLED technology at the same colour point. They are more efficient and cost effective compared to OLEDs.

Artificial intelligence

Artificial Intelligence (AI) is the area of computer science focusing on creating machines that can engage on behaviors which humans consider intelligent. Researchers are creating systems which can mimic human thought, an intelligent system which perceives its environment and takes actions that maximize its chances of success using cybernetics, brain simulation and computational intelligence.

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When Diamonds Are No Longer Precious

Diamonds are precious stones, but this may end within the decade. Synthetic diamonds have been around since the 1950s, but have always been very small—far too small to be gemstones in jewellery. Instead they found countless uses in industry such as for abrasives, cutting edges and as heat sinks for high-power semiconductor lasers. New techniques in recent years, however, are making synthetic diamonds bigger. In some cases, a lot bigger. And they are making them quickly. Chemical & Engineering News reported in its February 2, 2004 issue that a company named Gemesis in Sarasota, Florida USA, can grow a synthetic diamond of 2.8 carats in less than four days

The World Future Society, in its publication Twenty Forecasts for 2011-2025, wrote: "Breakthrough processes are creating laboratory-grown diamonds that are molecularly identical to natural diamonds, yet a fraction of the cost. As large inexpensive luxury diamonds become commonplace, consumers may turn to other things with more cachet."

One of the earliest public warnings of this trend appeared in Wired Magazine back in 2003. The article titled The New Diamond Age, written by Joshua Davis, was subtitled: "Armed with inexpensive, mass-produced gems, two startups are launching an assault on the De Beers cartel." This article opened with Mister Davis travelling to Antwerp Belgium and handing a gem dealer a synthetic diamond grown by Gemesis for appraisal. It cost Gemesis about a thousand dollars to make it. The dealer, who was not told its origin, valued it between ten and fifteen thousand dollars.

Manufacturing jewellery-sized diamonds at ever decreasing prices is a trend driven by two powerful forces: technological innovation and the desire to make money by undercutting the competition. Two forces which are unlikely to vanish.

The largest supplier of natural diamonds on earth, the De Beers cartel, is so frightened by this that they have spent a great deal of money to develop devices which can tell a natural diamond from a synthetic diamond, and are offering these devices to large gemological labs at no cost. But the devices, DiamondView and DiamondSure, have shown themselves unreliable in independent testing such as that done by Marty Haske, president of Adamas Gemological Laboratories, and by the Gemological Institute of America.

This lack of reliability should not be surprising since synthetic diamonds are composed of the same substance as natural diamonds: carbon atoms arranged in a type of cubic lattice called diamond cubic. This is why natural diamonds are not called "real" diamonds. They can't be. They are no more real than those grown synthetically. To make such a claim would be the same as insisting that the ice cubes in your freezer are fake ice and only the ice found naturally frozen outside on a winter's day is real.

Aliese Gregory

Stephen Euin Cobb

Stephen Euin Cobb is an author, futurist and host of the award-winning podcast The Future and You. A columnist and contributing editor for Jim Baen's Universe Magazine, he has written for Robot Magazine, H+ Magazine, Grim Couture Magazine and Space And Time Magazine. He is also an artist, essayist, and is on the Advisory Board of The Lifeboat Foundation.

Retailers and wholesalers in every phase of the natural diamond supply chain understand the danger synthetic diamonds pose to their business. Blue Nile, Inc., for example, the largest online retailer of fine jewelry reported on page 15 of its 2011 annual report: "...attempts have been made to develop and market synthetic stones and gems to compete in the market for diamonds and diamond jewellery. We expect such efforts to continue in the future. If any such efforts are successful in creating widespread demand for alternative diamond products, demand and price levels for our products would decline and our business and results of operations would be substantially harmed."

Already there are online retailers specialising in synthetic diamonds. It's all they sell. And they do not present themselves as cheap diamond discounters, but as a source of high fashion for shoppers of sophistication. They merely offer a more reasonable entry to into the world of high end jewellery.

As the technology of growing synthetic diamonds improves—producing stones both cheaper and larger—the price gap between natural and synthetic diamonds will get progressively wider each year. And as more retailers offer them to consumers, a growing portion of the gem buying public may be lured away. If demand for the far more expensive natural stones declines, so too will their prices.

Whether this financial impact will manifest itself in one year or ten years is uncertain, but in 2007 the Gemological Institute of America began grading synthetic diamonds for carat, colour, clarity and cut—just as they do for natural diamonds—which gives additional validity to synthetic diamonds and the manufacturers which grow them. And in some people's eyes place the synthetic on the same level as the natural.

Individuals who own diamonds today, or who have invested in diamonds hoping that their investments will remain safe or provide a hedge against inflation, need to be aware of these trends and decide if this asset class is right for their future.

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Confounded by Complexity

For decades our output has accelerated in line with our technology. Telephones, computers, robotics, automation, networks, mobiles, laptops, pads, and the internet have played important roles in the advance of science, industry, commerce, and our understanding of the complex world in which we live. However, we have hit a fundamental limit – us! We cannot input, process, and output data any faster, and in many respects we find ourselves confounded by advancing complexity. In short, we need help!

At one level we might see spanners and screwdrivers as muscle amplifiers, and computers as amplifiers of the mind, but computers and their peripherals can be so much more, and for us to access their expanding capabilities we need new interfaces and new ways of working.

Science fiction set public expectation of 'intelligent machines' a long time ago with Arthur C Clarke's 2001 talking computer 'HAL9000' followed by 'Star Trek' and 'Terminator'. These movies reinforced the notion that 'artificial intelligence was in the here and now' – but in reality it was, and still is, coming!

On the face of it conversing with machines ought to be straightforward engineering problem. After all, accurately recognising and synthesising human speech has been a computing reality for over 25 years, but just try it on your mobile phone in a noisy environment! What goes wrong?

Human language and communication is far more complex and subtle that it first appears, and so is the process of cognition. For example; 'let us pray' and 'let us spray' sound the same to you and I and a computer, but we are generally aware of the context, and we have understand that they convey entirely different meanings:

Let us pray – we may be in church

Let us spray – we may be in a paint shop, a garden, or a kitchen...

...doing repairs, watering plants, or cleaning a lettuce

Why don't machines understand? Because we have only recently assembled a sufficient number of 'common sense cases' to afford them some context, and because the computational power required has not been available – but now it is! More importantly, AI is now capable of learning from a vast set of real time inputs in the form of text, audio, video and animations and simulations.

Another subtlety is the lack of sensory devices to give computers continual input and some form of awareness. That too is about to change with the roll out of dedicated sensor networks plus billions of mobile phones equipped with a variety of new capabilities.

So where are we with AI today? The big successes go largely unnoticed and include control systems in industry and aviation, financial trading systems and telecom network control, the design of integrated circuits and complex industrial process and plants. AI systems also populate many engine control systems for our autos, elevators, trains and domestic appliances. On the more esoteric side AI systems now make discoveries in science and invent/innovate in technology and engineering.

Peter Cochrane

Peter Cochrane is a Fellow of the IEE, IEEE, Royal Academy of Engineering, and a Member of the New York Academy of Sciences. He has published and lectured widely on technology and the implications of IT and was awarded an OBE in 1999 for his contribution to international communications, the IEEE Millennium Medal in 2000 and The City & Guilds Prince Philip Medal in 2001. He is known for his virtualised global operation (Cochrane Associates).

And what might we expect soon? For sure voice I/O is going to improve drastically over the next 5 – 10 years, but that HAL9000 style conversation is most likely still 10 – 20 years away. But probably more significantly, the power of search engines will change drastically. Just look at the number of responses I get when I search today:

***AI* = 1,230,000,000**
***Artificial Intelligence* = 13,900,000**
***Artificial Intelligence Voice Recognition* = 3,600,000**
***Artificial Intelligence Voice Recognition Cognition* = 830,000**

All very impressive with response times < 0.2 second, but not a lot of use! I need a system that follows my work, my line of reasoning, and automatically refines searches so that I get the 10 most useful citations. Better still, I need a system that monitors all of my activities and brings relevant documents, messages, calls, history and context to my attention. I also need something anticipatory and relevant to what I am likely to be doing next. But most of all I need a system that can model situations, present me with viable options, and then check out my decisions.

There is one other important feature I am looking forward to – and that is The Truth Engine, The Veracity Checker. So much of the information on the web is wrong or in error. So many times a politician, leader or manager will say something that stretches the bounds of correctness, and an immediate spot check would be all so very powerful.

Science fiction writers mostly predict machines taking over, pushing us aside, and becoming malevolent. My prediction is that we will be happy to let go of a lot of things, like mundane processes and production work, and form a partnership with machines so we can be more creative and productive.

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Intelligent Decisions and the Brain

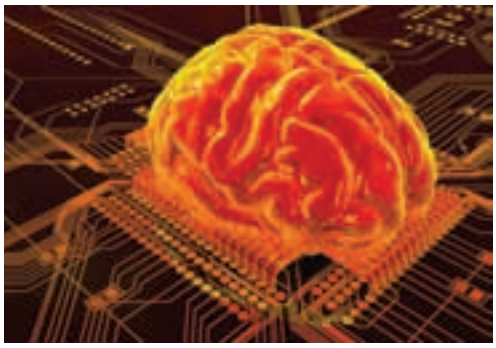
Alan Turing's central insight in suggesting his famous test of intelligence is that it is the nature and quality of the output that matters. Unfortunately, modern versions of this test, e.g., the Loebner prize, nicely prove the maxim that any measurement becomes hopelessly corrupted when used as a metric. To read the transcripts of the conversations between judges, humans and computer programmes is to experience a ratcheting ridiculousness. Programmes produce fatuous utterances in order to be taken for humans, who in turn produce even more preposterous prattle to try to escape. It is a curious irony indeed that intelligence should come to be evaluated according to nonsense.

Much of the problem with Turing's test is that it results in a language game, and it has been known from the days of ELIZA that we have an anthropomorphizing soft spot for semantically vacuous verbals. It would surely be better instead to assess the intelligence of decisions or choices – and indeed this is our starting point. We wish to understand and replicate the capacity to make robust decisions in circumstances of little information and rampant dangers, and to learn and generalize appropriately from success and failure. Fortunately, this capacity plays a key part in a swathe of technical fields, including control theory, economics, machine learning, operations research and particularly reinforcement learning, so we have giants on whose shoulders we can stand.

Another aspect of Turing's agenda is that mechanism does not matter. That is, we can happily ignore the myriad details of how humans actually produce their intelligent decisions. Although the conclusion is formally true, many scholars have pointed out the problems of straying too far from our single best test cases for intelligence. It turns out that we are in a golden age for decision making, with insights and ideas from the technical fields cross-fertilizing seamlessly with psychological data on human and animal behaviour, and neural data on systems and mechanisms.

There are of course many too many topics to cover. However, one primary insight from this convergence is the existence of multiple cooperating and competing decision-making systems. Decision-making is hard since it is typically necessary to worry about whole sequences of choices rather than single ones. An early insight in artificial intelligence from Arthur Samuel is that there are two essentially different computational strategies for assessing the values of actions. One (called model-based control) involves building a search tree of possible options and outcomes. This imposes heavy demands on computation but turns out to be easy to learn. The other (model-free) involves learning how to make predictions about long-run consequences by enforcing consistency between successive estimates. This eliminates errors such as switching from thinking that things are going well to going badly without any apparent reason. Since the predictions are immediately available, without any need to build or evaluate a tree, model-free control is computationally straightforward; but learning is harder.

That these systems operate at different sweet spots of learning and computation implies that having both can be useful. Indeed, there is by now ample psychological evidence that animals and humans do so, and quite some work on the underlying neural systems. By understanding how factors such as differential uncertainties (another notable jewel in our gilded age) influence how their outputs are integrated, we can see how to achieve intelligently adaptive decision-making.



A second primary insight is the importance of nature as well as nurture, i.e., the extensive (evolutionary or Pavlovian) preprogramming about decision-making that we and other animals enjoy. Although these can lead to a panoply of choice 'illusions' when current circumstances vary from ingrained prior assumptions, it is increasingly obvious that there is a wonderfully sophisticated scheme for assessing and reacting to opportunities and threats, which dramatically reduces the load for individual learning. We are just starting to have the tools to understand the nature and scope of this preprogramming, to fathom its mix of fixedness and adaptability, and to realize it in artificial systems.

The blistering pace of development in the area as a whole means that in the next decade or two we can look forward to systems that learn from their experiences to make smart informed decisions about the future. These kinds of systems, inspired by the workings of the brain, will be embedded in every facet of our lives from healthcare to finance to entertainment. These advances will likely render the errant babble of the Loebner prize a noisy sideshow on the path towards true human-level artificial intelligence.

Peter Dayan & Demis Hassabi

Peter Dayan is the director of the Gatsby Computational Neuroscience Unit at the University College London. He is the co-author of 'Theoretical Neuroscience', a leading textbook of computational and mathematical modelling of neural systems.He began his career studying Mathematics at Cambridge followed by a PhD in Artificial Intelligence at Edinburgh. He did his post doctorate at the Massachusetts Institute of Technology in Boston. Demis Hassabi is one of his post-doctoral students.

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The Next Decade in Tech: Context, Ubiquity and the Cloud

It seemed somehow appropriate to be asked to write this column while at the 2011 Korea World IT Show, standing in the shadow of 75-inch smart TVs and bathed in 4G LTE wireless. One thing that seems unlikely to change in the next decade is our mutual obsession with extremes: the biggest TV, the fastest broadband, the slimmest tablet.

Arguably the key theme behind all of those obsessions is how we access information: the speed at which we can do it, the convenience, the context in which it is presented. Futurologists of decades past predicted flying cars, supersonic transport being commonplace and a videophone on every wall and in every pocket. Although that may seem parochial today, at their core such suggestions also deal with the increasing pace of information. A faster car or plane to take you to your face-to-face meetings, a videophone to give the impression of presence when you can't be there yourself.

Their view of the future was colored by their pre-internet lives; our own predictions will perhaps be more accurate, given our place at this digital tipping point. We've taken Facebook and Twitter to heart – we don't need to be in the same room as someone to wish them a happy birthday – and we've already begun to take those social networking services in our pocket. Our phones and tablets allow us a mobile window into our online lifestyles, the gadgets themselves perpetually getting faster, more portable, more feature-rich.

What will change in the coming decade is context. Facebook on your mobile today is the same as on your desktop browser, simply smaller; it takes no account of where you are, or whether your information needs may be different based on the situation you find yourself in. That will require mobile devices with sufficient processing power and bandwidth to crunch hard data like location, time and date, along with fuzzier contexts like who you are with, what form you might want your data presented in, what inferences you might be looking for. Expect phones to create ad-hoc, mesh networks , invisibly communicating with each other so as to educate the context, sharing the masses of data stored no longer on USB drives in our pockets or flash memory in our gadgets, but on wireless storage.

The past ten years have seen greater value placed on "the cloud": pushing our data to communal servers and accessing it via ever-fattening pipes rather than carrying content with us. That's only likely to accelerate, as media costs fall, wireless connections become faster and more ubiquitous, and people begin to expect consistent access to more and more of their files. As that reliance grows, the cloud will increasingly be the backbone to our social lives, the concept of "sharing " spreading to every gadget and service we use.

We're already seeing a backlash against the cloud, however, punctuated with embarrassing mistakes by companies we'd thought would know better. Amazon's EC2 downtime – resulting in irretrievable data loss for some customers – was a wake-up call that, just because a server network is big, it doesn't mean it's infallible. Sony's recent PlayStation Network fiasco, with millions of stolen user records, underscored quite how much we rely on the precautions of others, and that reputation isn't necessarily a cast-iron guarantee that they're doing the right thing with our data.

Those storm clouds are unlikely to be the last, but then neither is the cloud itself going anywhere. The next decade will see remote servers come of age, but so will hard-learned expectations of data responsibility and, most likely, increased liability for those that don't take care of it as they have been charged with. Expect privacy concerns to make headlines again and again, as we attempt to balance our desire to share with our innate caution over our digital identities.

Of course, the one certainty is that ten years from now I'll look back on these predictions and laugh: they'll likely seem as hopelessly naïve as "kitchen of the future" videos from the 1950s, suggesting we'll have robot housemaids. Technology has the capacity to delight and confuse us, reassure and mislead us in equal measure. No matter what the next decade has in store, it won't be dull.

Chris Davies

Writing for R3 Media since 2006, Chris Davies is currently executive editor for SlashGear, PhoneMag and the other network sites. Based in London, UK, he's responsible for SlashGear's editorial decisions, and covers all forms of consumer technology. Dedicated to highlighting the latest and greatest in personal technology, SlashGear covers everything from cutting-edge tech gear to the latest digital lifestyle trend. Distinctive, informative and fresh, Slashgear brings you device information and reviews you can trust as well as thought-provoking commentary.

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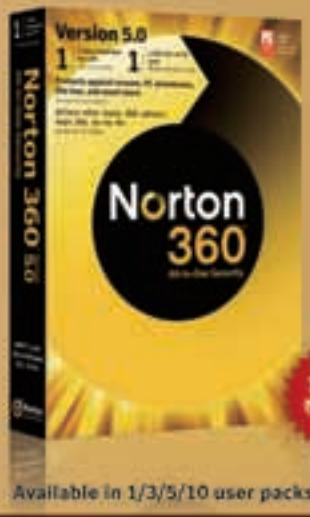

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Potentials of Technology

Hundreds of books and articles address technological change and make predictions. What is usually missing is an explanation of the constraints placed on technological development by the social system in which it occurs.

Today, financial barriers place enormous limitations on the innovation, individual creativity, and incentives, which have the potential to liberate humanity from its most pressing problems. Our existing economic and political structures are no longer able to keep up with changes in technology. Profit, secrecy, and competition hinder its implementation.

We are at a time when the methods of science and technology can provide abundance for all if managed intelligently. It is no longer necessary to consciously withhold efficiency through planned obsolescence and artificial scarcity. Continuing our old monetary system promotes these practices. In our high-energy civilization, rationing resources though monetary manipulation is no longer relevant, but is counter-productive to our survival.

With computers processing trillions of bits of information per second existing technologies far exceed human capacity for making reasonable decisions about the development and distribution of resources. With this processing potential we can surpass the practice of decisions being made on the basis of power and advantage.

Soon most will realize that a cybernated society can benefit humanity more than any other development in history. Here we do not contemplate the use of technology to advance the interests of transnational corporations, but rather to organize a global economy based on human rights and basic needs.

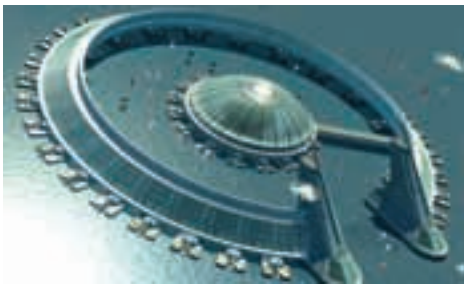
All people, regardless of race, color, or creed, need clean air and water, food, shelter, medical care, and education. Supplying these needs is a technical problem, not a political one.

The Venus Project's solution, a resource-based economy, uses the methods of science to arrive at a sustainable future. All resources are available to everyone without money, barter, credit, debt, or servitude of any kind. Within a resource-based economy, all resources are the common heritage of all people.

This can be achieved with technology and cybernetics if they're used with human and environmental concern to secure, protect, and develop a more humane world for everyone.

To achieve this we must first survey and inventory what we have to work with, namely the resources, technical personnel, manufacturing plants, and the needs of people. Our plans must be doable within the carrying capacity of Earth's resources.

While many urban centers grapple with retrofitting new and more efficient technologies into existing infrastructures, these efforts fall short of the potentials of technology. We must rebuild our physical infrastructures using total city system designs. Industrial plants, waterways, power systems, production and distribution processes, and transportation systems must be reconstructed from the ground up with a total global-systems approach. Only then can technology overcome resource deficiencies and provide universal abundance.



Designed by Jacque Fresco (www.thevenusproject.com)

Jacque Fresco
Director and Founder
of The Venus Project

Mr. Fresco's background includes industrial design and social engineering, as well as being a forerunner in the field of Human Factors. Mr. Fresco has worked as both designer and inventor in a wide range of fields spanning from biomedical innovations to totally integrated social systems. He has authoured books such as Introduction to Sociocyberneering, The Venus Project: The Redesign of a Culture, Designing the Future. He has also produced and filmed The Venus Project, Cities in the Sea, Designing the Future.

Automated control could happen using sensors to monitor the earth's resources from every conceivable location. These could be linked together using a worldwide network of computers. Instead of policing human behavior, these monitors would help us arrive at the most appropriate decisions for humans and the environment. Monitoring personal behavior will be neither necessary nor desirable within a global resource-based economy since everyone will have access to the necessities of life.

If technology were managed intelligently with human and environmental concern, it could overcome scarcity and liberate millions of humans from poverty, hunger, crime, and war. There would then be no limit to human potential.

One purpose of this technology is to free people from dangerous, repetitive, and boring jobs, and allow them to experience the fullness of human relationships, denied to so many for so long. This calls for a basic adjustment in how we think about what it means to be civilized.

Do we have the capacity, the will, and the intelligence to clearly think through and implement changes for our overall benefit, or must we wait for some catastrophic event to direct our future?

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Future trends in technology

The defining feature of the next decade will be the end of Windows' domination of user operating systems. Though Microsoft's brainchild will remain the primary business platform, everyday users will have access to an ever-expanding variety of alternative operating systems. Notably, even now the number of devices accessing the Internet via Windows and nonWindows platforms are almost the same, with the latter even occasionally exceeding their Microsoft counterparts.

The growing number of new operating systems will affect the process of threat creation: cybercriminals will not be able to create malicious code for large numbers of platforms. This leaves them with two options: either target multiple operating systems and have many individual devices under their control, or specialize in Windows-based attacks on corporations. The second variant will probably appeal to them more – by 2020, targeting individual users will become much more complex because the emerging trend of making payments electronically and using online banking will continue, but biometric user identification and payment protection systems will become the norm.

The coming changes in operating systems and their specifications will affect virus writing techniques as these new systems evolve. Many cybercriminals who used to target Windows devices will have to become adept at exploiting the new-generation operating systems. To retain their 'place in the sun', today's cybercriminal will need to enlist the help of members of the younger generation who are capable of writing malicious code for the new platforms. However, this state of the affairs cannot prevail forever and we may well see 'turf wars' between different hackers and hacker groups.

Cybercrime in 2020 will almost assuredly divide into two groups. One group will specialize in attacks on businesses, sometimes to-order. Commercial espionage, database theft and corporate reputation-smearing attacks will be much in demand on the black market. Hackers and corporate IT specialists will confront each other on the virtual battlefield. State anticybercrime agencies will probably be involved in the process too and will have to deal predominantly with Windows platforms, in addition to the latest versions of traditional *nix systems.

The second group of cybercriminals will target those things that influence our everyday lives, such as transport systems and other services. Hacking such systems and stealing from them, making free use of them and the removal and changing of personal data about customers' activities will be the main focus of attention of the new generation of hackers, who will make a living this way.

Eugene Kaspersky

Eugene Kaspersky's love for mathematics determined his "technical" future. One of his hobbies during high school was to solve problems published in mathematical journals. In 1987, Eugene graduated from the Institute of Cryptography, Telecommunications and Computer Science, where he studied mathematics, cryptography and computer technology, majoring in mathematical engineering. In 1997, Eugene and his colleagues decided to establish an independent company, becoming the founders of Kaspersky Lab and in 2007, he was named its CEO.

The trend that has seen the Internet become both a popular resource for communication, entertainment and news, and a specially designed tool for Internet commerce and online payments, etc. will continue. The 'online user-base' will expand to include many mobile and smart devices capable of using the web to exchange or transfer information without the need for human intervention.

Botnets, one of today's most potent IT threats, will evolve dramatically. They will incorporate more and more mobile and Internet-enabled devices, and zombie computers as we know them will become a thing of the past.

The tools and technologies used in the field of communications will undergo massive change. These changes will see greatly increased data transfer rates and enhancements that will make the virtual communication experience much closer to that of real-life: by 2020, communication via the Internet with the help of a keyboard will be the stuff of old movies, meaning spammers will need to seek out new ways of delivering their unwanted correspondence to addressees across the globe. The first step the spammers will take is to change from targeting desktops to mobile devices. The volume of mobile spam will grow exponentially, while the cost of Internetbased communications will shrink due to the intensive development of cellular communication systems. As a result, users will be less likely to worry about unwanted advertising material.

The old adage 'Knowledge is power' will be more relevant than ever before. The struggle for the means to collect, manage, store and use information, about everything and everybody, will define the nature of threats for the next decade. Therefore the problem of privacy protection will be one of the key issues of the decade.

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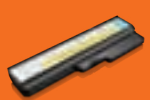
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Cloud boots

A patent filed by Apple entitled "Method and apparatus for administering the operating system of a net-booted environment" talks about how a network computer system comprising a server and various clients. Different clients can receive 'operating system' from the server with the help of one of the clients. Is this the beginning for an era by apple? May be yes. Apple has said that the OS "may also be downloaded as a computer program product, wherein the program may be transferred from a remote computer (e.g., a server) to a requesting computer (e.g., a client) by way of data signals embodied in a carrier wave or other propagation medium via a communication link (e.g., a modem or network connection)."

Operating Systems

The potential of operating systems scaling in the future is huge. Here are some of the most promising technologies that will take OSes to a new level

Vaibhav Kaushal
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By Although it might look like a bit distant, the possibility of every computer being booted over the cloud does not seem to be impossible by any means. A few months ago when Chrome CR-48 notebook was given away by Google for testing, quite a few loved the way everything was saved on the cloud and their android devices could also be used to fetch the same content. Those who unreliable connections faced severe problems with the device and were not-at-all impressed.

Future communication technologies worldwide and availability of service spreading at a rapid rate, it might be someday possible that we would all be booting our machines over a cloud hosted by our ISPs. With Apple featuring OS installation over Wi-Fi on its Macbook Air and Mac Mini product lines (http://bit.ly/DairOS) it would not be a difficult to imagine scenario where your netbook will be able to boot into its (at least, a secondary) operating system using your ISP's Data connection. With Apple recently acquiring patent for netbooting environment, it seems like the war for controlling the user's PC in more ways is going to go up and the day is not far when you would be receiving your OS over a network connection. Certain relief for those of us who have been counting the number of hours wasted for OS installations.

Ever heard of parallel kernels? Lets consider a few facts about GPUs before we proceed. Graphics cards have as many as 1024 processors within them. On certain operations, they can beat CPUs by more than a scale of 20. A lot of algorithms (e.g. encryption algorithms) can run extremely fast on graphics processors when compared to CPU. And lastly a project called KGPU(http://code.google.com/p/kgpu/) is already trying to use CUDA to accelerate a few core parts of Linux kernel.

Taking all those into consideration, it would not be an unimaginable future with supercomputing capabilities in your computers ten years later since now being used every day to make your life isolated from all the hitch and glitch. Ten or fifteen years into the future, we might have our own weather forecaster, health assistant and a complete social planner on our machines, powered by the Operating system itself. By which we mean the 'graphics cards' thanks to parallel kernels.

The world today means 'RAM' when it talks 'memory' and means 'disks' when it talks 'storage'. Well, that might change quite a byte (well, that's 8 times a 'bit') in the coming future.

HP has been successful at creating the first prototype of a

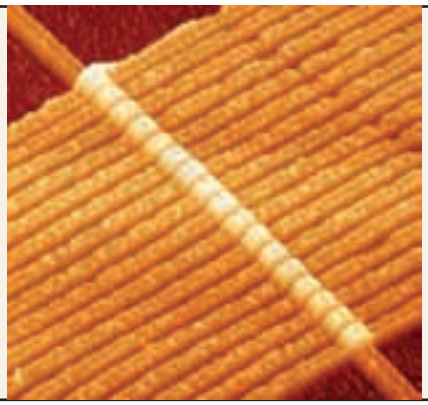
Semantic Desktop

A vision of a desktop which will be able to understand the meaning and importance of files stored on system. It will understand the needs and behaviour of its user and adapt the system accordingly. The operating systems would be able to use the files' data as metadata for search and interlink them with various other objects on the system. They will be able to analyse the behaviour of the user and predict his needs based on it. All this would be tightly integrated into the social and semantic web which would understand and exchange meanings of user's behaviour with desktop.
Quick Links: http://goo.gl/abuKN, http://en.wikipedia.org/wiki/WinFS, http://www.w3.org/2001/sw/SW-FAQ

Memristor

Defined as defined as a "passive two-terminal circuit element in which there is a functional relationship between charge and magnetic flux linkage". Sounds Greek? Well, put simply, a memristor is a type of component which can change its resistance depending on how much of current was made to pass through it. Since it can remember how much current passed through it, information storage is possible. HP has been successful at making storage chips which can have some (real) high storage capacities at 100 Gigabits per cm2 and about 1 petabit per cm3. This technology will bridge the gap between volatile and non-volatile storage.

Quick Links: http://goo.gl/8OpTw , http://goo.gl/XBHsh and http://goo.gl/phEqV



of the Future

working 'memristor'. While the current uses of memristor are quite a few in the industry. It is expected however, that as soon as circuits making use of the new technology, which allows memory chips to retain information is in the main stream market, the software makers will capitalize over it! The very high density storage capacities of chips made with a memristor indicate that the days have come when the hard disk manufacturers will stop thinking of a circular plate that revolves, completely. There may be a new trend where no one thinks of a 'RAM' when the new devices making use of the memristor chips are in market, for they allow greater data density and access speeds similar to DRAM. Since the work is still in progress, we can certainly imagine a highway in this direction.

This will call for some new and pleasant-for-user changes into the OS. With some real huge storage capacities which can act as both RAM and HDDs, changes made to the future operating systems will be difficult for the developers making life smoother for the user. Since you could have both the HDD and RAM in one unit, booting times will be unimaginably short. Hibernation and sleep would be almost instant and may be you would never shutdown your computer! We're talking of a boot time of 0.358 seconds. Savvy?

We've been used to searching the web for quite some time now. Of late Operating Systems have gotten significantly better at it too. But in the future we're likely to have a semantic desktop. One such project which is assumed and declared dead now, WinFS was once said to be the basic pillars of Longhorn.

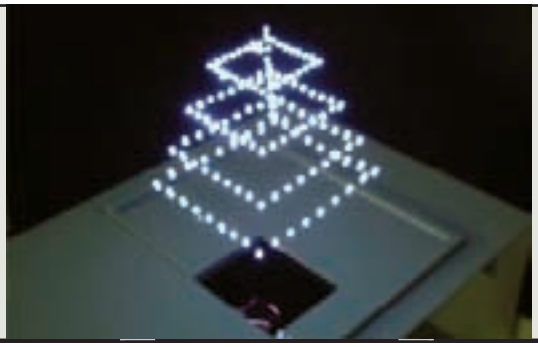
On a day when the desktop will be completely semantic, you would open your calendar to find your best buddy's birthday is today. You would click on an icon with his image you never had seen until now and you will come to know when you last interacted with him via an email, or via a social network (a wall post, a comment or a scrap). Feeling apologetic, you would want to send him a picture slideshow video with both of your pictures with a custom music background. You will click the 'create slide show' button and all those images you both are tagged across all your social networking accounts will be fetched. You would then be presented by a media editing program to get the work done. Would not that be so good when your desktop is able to find out what you want before you actually still realize it?

The next concept in the way operating systems of the future will look could really strain your imagination. (Though it might be simpler if you've seen Iron Man). We're talking about drawing objects in the air. Windows 7 has transparency and flipping, Compiz too had a bit of 3D behaviour of application windows too. Now imagine you sitting at your chair asking your computer to open your photo album and you are shown pictures right in the air, no display attached! The day might not be as far as one would imagine. With a lot of research being done in this field, it might just be the next big thing about computing. You will no more need a virtual 3D experience on your desktop.

Displaying 3D Images in Air i

In this technology, laser produced plasma technology is used to produce flashpoints in the air. Optimizing the laser beams, the brightness, contrast and production distance of such flashpoints can be changed. This technology is capable of producing 3D images in a space where there is nothing but 'air'. One of the first successful project in its field is ongoing at AIST (National Institute of Advanced Industrial Science and Technology), Japan. We know you want to see better images. Just head to the link below:

Quick Links: http://goo.gl/46INU



Virtual Reality

Toshiba developed a Helmet in 2006 which gave the user a 360 degree VR environment for gaming. Virtual Reality works on the principle of "Immersion" where 3D images are made to appear life-sized from the perspective of the user along with audio and haptic feedback. Based on the user's motions, particularly his head and eye movements, the images correspondingly adjust on the user's display to reflect the change in perspective. The computer continuously generates an environment for the user and responds to the users every action.

Interfacing with

Amazing interfaces change the way we use technology. Here's a look at the exciting new ways in which we will be interfacing with technology in the future

Anshuman Sanghvi
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Achal's day began with him checking in on his digital identity. Games like Second Life, had evolved into an entire Digital Universe. He was hooked on to his online avatar, which evolved by itself – the latest fad in the gaming scene. All he had to do was wear motion sensors which tracked his movements and actions, while his online self reflected them in the game. In a sense, the concept of parallel universes was not the stuff of science fiction any more. In fact, in the year 2030, there was no such thing as science fiction, there were only anachronisms - the question is never "if" or "how" a technology is possible but rather when?

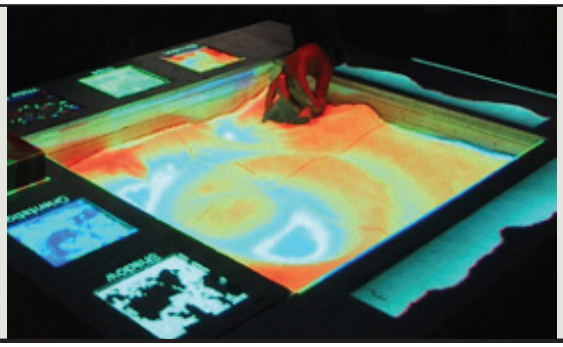
A new school of thought

As the clock struck 10 in the morning, Achal walked in to his classroom, or rather, his classroom came to him. The entire class was a single instance of the same virtual reality environment shared by him and his colleagues around the world. His teacher Mr. Morondo was talking about the second world war as he started changing the scenario from a classroom to a battlefield. Percy, Achal's friend, was interested in primitive weapons and through his hand gestures Percy pointed to various tangible objects in the battlefield and then dragged them to a Wall called the G-Speak.

G-Speak was how everybody computed in the future. Simply put, it was a surface which acted as a base to project a 3D image for the user to manipulate information. He made hand gestures, much like directing an orchestra, to align weapons according to their destructive power in a 3D pyramid, where the bottom layer was constructed of cannonballs made of gunpowder, and at the very top was an atomic bomb. The pyramid was just one among many visualization diagram metaphors that served as a real time representation of data.

At the end of the week, there would of course, be a test (an antique tradition that withstood the test of time). At the day of the test, everybody had to wear devices on their heads that were excruciatingly efficient in what they did – recognising the signals of the brain. An intention to cheat was instantly detected at its inception. His friend Abhishek though, was trying to find some way to work around this little niggle.

Later that day as Achal started walking down the streets. High rise buildings with huge holographic projections rising to the sky from the terrace tops, were telling him to swipe his thumb on his



SandScape

SandScape is a tangible interface developed by the MIT Media Lab, for designing and understanding landscapes through a variety of computational simulations using sand. Users view these simulations as they are projected on the surface of a sand model that represents the terrain. The users can choose from a variety of different simulations that highlight either the height, slope, contours, shadows, drainage or aspect of the landscape model. The users can alter the form of the landscape model by manipulating sand while seeing the resultant effects of computational analysis generated and projected on the surface of sand in real-time.

G-Speak

G-Speak, was developed by John Underkoffler. Underkoffler served as a technical advisor for Steven Spielberg's film "Minority Report" where the system was used by Tom Cruise. Its a system which allows users to navigate and interact with data in an unprecedented, visually rich, natural and responsive manner. It would interpret a user's motion to move through datasets without him or her needing to use a computer mouse or any other physical object to do so. It uses a mounted camera to track the user's gloves as they move in space. It has sub millimeter precision and can handle quick motions and multiple users. It also has an I/O Bulb is based on a traditional light bulb but is able to not only project light, but also collect live video of the objects and surfaces it projects light onto.

FutureTech

wrist piece in a particular pattern to indicate that he wanted to buy their product. Transactions were now simplified down to a swipe. Money was now simply a number associated with a person or institution. As he put on his sun-glasses, the HUD displayed an plethora of information, including the weather, location aware content such as advertisements of beverages as he passed by a pub, online activities of his friends living in the vicinity and reminders of his to-do list at that time.

All of this was powered by his personal computer a chip that was responsible for the processing power of his HUD glasses and his wrist-piece where it was embedded. It was the age where devices were increasingly personal and collaborative at the same time.

The cities were designed using actual miniature models using technologies like Sandscape. With the advent of Sandscape, people was able to use actual sand to model structures and have a computer churn out topographical information, height, drainage, and contours as coloured projections on it.

Nothing like Home

Back at Achal's home, his mother, was trying on dresses in front of the mirror. It displayed information of the cloth and recommended her an attire based on her catalogue, previous preferences and present mood (using technologies such as Q™ Sensor, a wireless, wearable biosensor that measures a key physical component of emotions, developed way back in 2011).

His dad while returning home in the evening, set the temperature of his room remotely courtesy his mobile device and the city wide network grid. As he reached the front door he identified himself to the security system. All he had to do was to wear a headpiece and concentrate on opening the door. Brain Machine Interfacing(BMI) had evolved into an exact science. Simple things like turning on or off the lights, opening or closing the doors and windows, turning devices on or off, moving a wheelchair, assigning commands to a robot etc. was just a matter of thinking that command in your mind. With BMI the way we interface with technology is- no interface at all; it is quite literally, Mind over Matter.

The nanotech enabled house had furniture which remembered every member's ergonomic profiles to shift its shape accordingly. It folded and hid when not in use. The walls changed colour. Every device in the house could communicate with each other. Every house was self sufficient with their own energy producing box. Every object was electronically enabled, that is the dining table was aware of what was placed on it etc.

In the future, broadly, all technology will eventually fall into two categories: network, and interface. One will connect device with device while the other will connect a device with a human. The progress in how humans interface with technology will harbour its deeper integration into our daily lives; and it is this very integration that will lead to technology fulfilling its goal of improving the quality of the human experience for the average joe.

Brain Machine Interfacing

Products like The Intendix from Guger Technologies (g*tec) and EPOC headset have already been able to achieve a non-invasive BMI, that is, there is the sensors dont need to be inside the skull. The EPOC is a streamlined EEG device that translates your thoughts and facial expressions into computer inputs. In BCI systems, electrodes sense the waves of the brain and software interprets it, finally executing that action.

Everything as a service

A consumer in San Francisco hunts for a restaurant's address, a small-business woman in Paris checks textile prices in Bangalore, and a financial services executive in London studies global stock market trends. This insatiable worldwide need for real-time information has been fuelling Hewlett Packard's strategy to converge cloud computing and the connectivity of mobile personal information devices. The result of this decade-long effort is the mobility/cloud ecosystem, which promises to deliver personalised experiences through a scalable and secure information infrastructure.

The research agenda to achieve this goal ultimately aims to deliver:

- Infrastructure as a Service — technologies for servers, storage, networking and IT management
- Platform as a Service — technologies for a shared cloud infrastructure that provides enterprise-grade security, scalability and quality of service
- Software as a Service — novel consumer and enterprise services for the cloud

Bringing this vision to life are modern mobile operating systems like Palm webOS, combined with the ability to deliver secure, scalable computing resources economically and on demand. HP already provides millions of internet users with on-demand publications, thousands of webOS mobile phone applications and more. The next step is to build and expand a secure and scalable cloud infrastructure using servers, storage, networks and client devices such as printers, PCs and mobile phones. This convergence of technology and services will be the basis for the next generation of extremely high performing, low-cost connected devices supporting personalised anytime, anywhere access to information and services.

Infrastructure as a Service

Computing infrastructure is undergoing a revolution, characterised by large-scale data centres with millions of users accessing thousands of servers. Such data centres present unique challenges for server design, the ability to scale server configurations and the need to mitigate enormous capital and operating expenses associated with power and cooling.

As part of our research on exascale data centres, we've developed workloads and metrics to use in building and analysing new system architectures optimised for the cloud. We've optimised our microblade and megaserver architecture for the cloud, and evaluation results show that they could improve energy efficiency by a factor of 4:6 relative to current technology.

Emerging non-volatile memories like memristors combined with advances in photonics and multicore processing offer intriguing opportunities for new system designs, such as nanostores, that could offer significantly better performance and energy efficiency. These improvements in future system architectures will pave the way for applications previously not possible in the cloud, enabling a more sophisticated generation of insights across diverse data sources.

Prith Banerjee

Prith Banerjee is senior vice president of research at HP and director of HP Labs, the company's central research organization. In these roles, he assists the HP executive vice president of strategy and technology in charting technical strategies for the company, and heads HP Labs, which has seven locations worldwide. Most recently, Banerjee was dean of the College of Engineering at the University of Illinois, Chicago. He also is the founder, chairman and chief scientist of BINACHIP Inc., a developer of products and services in electronic design automation.

Platform as a Service

Offering a platform as a service means providing an enterprise-grade cloud computing infrastructure — a service that enforces quality-of-service guarantees over the security, isolation, reliability and performance of the virtualized infrastructures that it generates and manages. Service providers need a platform that can construct multi-tiered, flexible virtual infrastructures providing few restrictions relative to existing physical infrastructures. Cloud services need to be flexible and scalable (though with a limited scope).

To meet service providers' objectives, we took a Cells-as-a-Service approach, introducing a class of virtualized infrastructure services, in which the user declares the desired topology of the virtual machines, virtual block storage and virtual networking. Our research focuses on the requirements for an enterprise-grade cloud computing infrastructure.

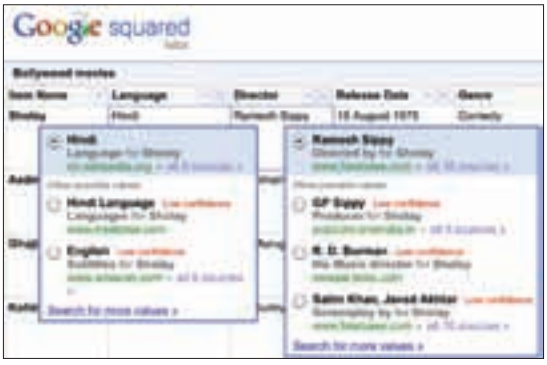
Software as a Service

Web 2.0 and the cloud have given rise to a new class of services that cater to an increasingly connected population. HP aims to create models, methods and technologies to harness the flow of collective attention, supporting a mobile society with context-aware and anticipative solutions. The ultimate goal is to build a fluid enterprise that captures collective intelligence for a variety of uses, from predicting the future to allocating resources. Some of our related research projects include ePrint, i-Catcher and Watercooler.

The convergence of cloud computing and connectivity is a reality. Many challenges remain, however, including securing services, data and the infrastructure from attack, ensuring predictable performance as well as ensuring the privacy of personal data. And a generation of scientists and engineers will be focused on creating and delivering these advances. From San Francisco to Paris to Bangalore to London, HP, our customers and partners are working to open the information economy to more people than ever before.

P. Banerjee, C. Bash, R. Friedrich, P. Goldsack, B. Huberman, J. Manley, C. Patel, P. Ranganathan, and A. Veitch, "Everything as a Service: Powering the New Information Economy," IEEE Computer, March 2011, vol. 44, no. 3, pp. 36-43.

Probabilistic databases



A database is an organised collection of data. Database technology represents a fundamental tool for storing and accessing data in applications ranging from managing customer and employee data in enterprises to managing increasingly larger amounts of measurement readings in scientific experiments. Life without databases seems unimaginable these days. How else could one book flights or hotels, or do business in a large city like London?

Whilst they are clearly useful and ubiquitous, today's database management systems require data to adhere to a rigid and predefined structure and to be complete and trustworthy. Great effort is invested in cleaning enterprise data, a labor-intensive and complex process that accounts for 30 per cent (80 per cent of the development time in a data warehouse project). It is not surprising that this costs US businesses billions of dollars annually.

At the same time, internet applications witness an unprecedented shift towards unstructured and user-generated content. These data come in vast quantities, originate from diverse sources without a common structure, and are often inaccurate and contradictory. Although they do not fit in the rigid frame of traditional databases, these data are valuable. In particular, marrying traditional databases that host accurate and carefully maintained data with the more dynamic and up-to-date Web data is desirable. Consider, for instance, business intelligence (BI), whose goal is to extract and analyse business data by mining a large collection of databases. BI systems can be made more useful by including external data such as twitter feeds, blogs, or email messages, in order to extract valuable business information. By analysing blogs or twitter feeds and joining them with offline databases of products, companies can obtain early feedback about the quality of a new product, or its degree of adoption; such knowledge is very valuable, both for manufacturers and for investors.

Probabilistic Data

Making sense of unstructured and uncertain Web data is not an easy task. Using information extraction techniques, one can give a probabilistic meaning to such data. This is the case for the Never-Ending Language Learning (NELL) system, which extracts triples (Subject, Predicate, Object) from Web data and assigns confidence scores to learned facts. For instance, NELL concludes from some source with 100% condence that Angelina Jolie, is, actor and Angelina Jolie, is, female; however, from a different source it derives with 96.9% confidence that Jolie is actually male (as of May 2011). The reasons for this ambiguity are straightforward: Information extraction from natural language sources is error-prone, and different data sources can convey contradictory information.

The Google Squared service takes this idea one step further: It aggregates web data into uncertain tables that describe a given keyword: The table for the keyword "Bollywood movies" is depicted in the figure. For the movie "Sholay", it proposes Hindi and English as possible languages, and Ramesh Sippy and R. D. Burman as possible directors. Alternative values are annotated with confidence scores: Google's ranking suggests that Sippy is more likely the director than Burman, and that Hindi is more likely the language than English.

Both NELL and Google Squared extract uncertain tables from unstructured web data, which is a first key step to making the data truly accessible to structured query languages like SQL. In both systems, the uncertainty in the data is represented by condence scores. Using probabilistic database management systems, one can join standard or uncertain tables and retrieve the answers ranked according to their likelihood. In our example, we can join the Bollywood movies square with a square Hollywood movies in order to retrieve a list of directors including Shekhar Kapur who have produced both Bollywood and Hollywood movies; or we can find currently popular movies by joining our square with live twitter trends.

Very recent years have witnessed an impressive body of research on managing probabilistic data, early prototype systems, and applications in information extraction, RFID and scientific data management, and financial risk assessment. This is described at length in the first book on this topic.

Dan Olteanu and Robert Fink

Robert Fink is a doctoral student and Dan Olteanu is a University Lecturer, both in the Department of Computer Science at the University of Oxford. Dan's group works on theoretical and system aspects of probabilistic databases, and recently included three bright Indian computer scientists: Smitha Mysore-Shankar, Swaroop Rath and Yuvika Suvarna.

The next 10 years in technology

I've always been interested in technology and am now a full professor for robotics at the University of Manitoba in Winnipeg, Canada. I've been involved in robotics research, competitions and education for more than 15 years now.

I am convinced that the next 10 years will bring the age of personal robotics. Note that I don't mean automation in manufacturing — expensive special purpose machines performing repetitive tasks to build cars and various other products. I'm talking about affordable, flexible, adaptive and intelligent robots that people use in many new and exciting ways that we've not even begun to explore yet.

The robotic age will have an even larger impact on our society than the personal computer (PC) in 1980s, the internet in the 1990s and mobile computing and social media in the 2000s. The PC is only 30 years old, yet there is hardly anyone in the world that has not been affected by its introduction. The PC has fundamentally changed our society —the way we work, play and interact with each other.

So far, though, PCs have been limited to a virtual world. They can fetch data from a database, push numbers around in a spreadsheet or send messages, but can't yet manipulate the physical world at large.

But with personal robotics, these computers can now reach out and touch our physical world. The resulting changes to our society will make the PC revolution look small compared to the tsunami of change that will come with personal robotics.

A glimpse of these exciting new possibilities can be seen at the intelligent robot competitions that have gained great popularity worldwide. For example, the RoboCup competition has the goal of beating the human world champion by the year 2050 [1]. FIRA HuroCup is the toughest challenge for humanoid robots where a single robot has to sprint, run a marathon, traverse an obstacle parcour, lift weights, walk over uneven terrain, play basketball, kick soccer penalties and climb walls [2]. It's refreshing to see that not just top universities from around the world participate in these competitions, but also hobbyists, which shows that average persons are getting involved. Recently, companies such as iRobot have produced successful commercial robots that can vacuum a floor in your house.

From these humble beginnings, I believe that in 10 years you'll have personal robots that monitor your children at home, substitute for teachers in classrooms, act as your avatar while attending a meeting or family gathering half way around the world, drive you to work in your car, wash and fold your clothes, clean up your messy house and rescue people from a burning building.

Jacky Baltes

Jacky Baltes is a Full Professor for Computer Science at the University of Manitoba, Winnipeg, Canada.

His interests are Robotics, Artificial Intelligence, Planning, Machine Learning and Distributed Processing.

Many of the tasks above can already be done by special purpose robots, but those robots are too expensive and require a team of experts to run. There's a lot of work to be done to make these robots personal, i.e. reducing their cost and making them robust enough for peoples' homes and flexible enough to perform many tasks.

The increased use of computers and robotics also means that programming literacy or the ability to program your ever more powerful and complex personal robots will become a crucial element in our education similar to reading, writing and arithmetic.

Some say that those predictions are unrealistic and that it will take much longer, but I'm reminded of the Wright brothers who flew basically a powered kite for a little over 30m in 1903, but less than 50 years later, in 1947 Chuck Yeager broke the sound barrier in a jet plane. Technology is advancing at an incredible rate.

Like any technology, not all uses of robotics will have a positive impact on our society. If you build robotic firemen and rescue workers, then others will turn them into robotic soldiers to kill. Use and abuse of technology, however, is in my view a societal problem and needs to be discussed in this context.

I, therefore, am trying to encourage my and other students of engineering or science to get involved in politics to make sure that their hard work is not being abused. I also believe that sound scientific knowledge is crucial for understanding the most pressing problems of our times, such as sustainable development and climate change.

REFERENCES:

http://www.robocup.org; http://www.fira.tw

How big data will change our future

Data defines our lives in increasingly breathtaking ways. In its raw unorganized form, data is found in the alphabet, numbers and symbols we use daily. Collectively, our data trails reveal our behaviors, purchasing habits and social interactions. Companies wish to harness the expanding clouds of data, attempting to pinpoint us with better products, services and marketing offers. Medical organizations have massive data sets that track health records, population changes and more. Scientists and government officials face this data challenge in climate change, biological research, financial information, national security tracking and other areas.

These data sets have become so unwieldy and awkward that they've earned the term of 'big data'. Big data is an ever-present problem that pushes the limits of current data management tools.

Big data also suggests big impact. In short, companies are now collecting so much information about our activities that companies who can analyze and capitalize on the vast data patterns gain a tremendous market advantage. Wealth management firm Merrill Lynch recently reported that big data would lead the coming decade of revolutionary businesses, services and Wall Street deals.

Frankly, big data is not a new revolution. It has been occurring since the invention of the printing press, which started the first indexing problem. Suddenly, society had to address how a reader could find a specific topic or word within a treasured book. The solution was to assign the task to the most educated humans, who would spend almost their entire lives generating detailed numerical or alphabetical listings.

In more modern times, Yahoo! addressed the early web problem in exactly the same way – it assigned people to generate indices. Then, along came Google with its computer algorithm that could automatically sift through the big data set of web pages. Through multiple iterations, Google discovered how to efficiently map and then monetize the network graph that underlay the world wide web of pages.

We're now witnessing an explosion of social information. The current leader is Facebook, a social networking service that allows over 500 million users to exchange personal information continuously. The unit of big data has shifted from pages to people. People linking to other people, building a new network layer to be analysed and monetised.

A third class of big data is emerging that builds on these networks of pages and people. The new unit is, coarsely, the product.

The different and complex associations between products raise new questions and expectations for big data management. If a person reads a book review online, shouldn't that review automatically find and ideally present the reader with an opportunity to purchase an e-book copy, along with a connection to recent reviews, the author's upcoming book tour and a discussion of the book by a renowned writer? As a business manager plans a trip to London, what if the travel article she's reading also suggests similar articles, automatically extracts the restaurants, hotels and events across the articles (all products), and then helps her assemble those articles into an itinerary? Or, when a couple is enjoying good wine at a restaurant, the bottle can point them to a list of foods typically paired with it, so that they may buy a second bottle for an event next weekend.

These cases foretell a world of big data, in which you can weave your own story, tailor your own collections and become a producer of your life with nothing more than your own ability to curate what you like. As you build your own interconnected world, you'll point to other web pages, people and even products – and they all may link back to you.

This future of big data has already begun, and realistically, the creation of small parts of this data set is being done first by hand. Slowly. And then, more parts will be automated until it seems almost magical, and like other big ideas, you'll wonder how you ever lived without it.

William Cockayne and Tamara Carleton

William Cockayne, PhD, is a seasoned entrepreneur in Silicon Valley and a Consulting Associate Professor at Stanford University.
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Ubiquitous computing through social objects

We're approaching a supposed digital nirvana, an ubiquitous computing environment everywhere you could want it and attuned to our needs. In a sense, it's already here in the form of micro-chipped household appliances and elevators and, of course, smartphones. But the complexity of managing this scattered environment threatens to overwhelm us — imagine the maintenance issues when we have not a handful, but a houseful of computing objects. As embedded computers outnumber the people on Earth, the computers are going to have to self-manage to a greater extent. We need to find a new balance between man and machine.

Open APIs

We could start by networking devices in an open, extensible way. Up to this point, connections between devices are often inflexibly scripted by manufacturers. But real growth will come with open APIs. The author Bruce Sterling argues that future successful products will have public application programming interfaces that allow them to be repurposed by the user in ways that the manufacturer could not foresee. HTTP and HTML produced an explosion of networked computer applications, driven by users wielding the hyperlink. Object-oriented programming created an order-of-magnitude leap in developer productivity. Now we need a higher-level protocol to reduce complexity in large, dynamic networks.

Social objects

We humans already have experience with large, dynamic networks — that's what society is. It's now been packaged in online social networks. Facebook and Twitter are not perfect, but they're good models for managing growing networks of objects. A user can easily broadcast a message, and any object that understands that message might respond — useful when we can't remember the names and abilities of every device in our environment. And more importantly, the objects can talk to each other and back to us. So the next step is to make devices more social — e.g. they should announce everything they're doing, and respond to commands. We'll add apps to this social object network to initiate and oversee tasks on our behalf. These apps would connect groups of objects that complement each others' capabilities to accomplish new tasks together. Consumer electronics devices can be social objects. The MIT Media Lab's CE2.0 consortium, directed by Henry Holtzman and Michael Bove, proposes just this: "...a new generation of consumer electronics that are highly connected, seamlessly interoperable, situation-aware and radically simpler to use." And since this is an open conversation, other objects that we haven't thought of yet will also come up with new uses for that data. The creators of the Web hadn't thought of Amazon or YouTube, either.

Sustainable computing

The materials of electronic objects often go hand-in-hand with the functional life of those objects. The physical objects tend to be cheap and flimsy, and the software becomes obsolete as quickly. If we claim to care about sustainability, the software should age as gracefully as the body. This means openness and upgradability. This is where open APIs could be a competitive advantage to manufacturers. They can gain loyal users (and more of their money) by selling apps that extend their devices' capabilities. An API means that third parties can do part of the work of meeting customer needs (more nimbly than manufacturers can themselves) and build an ecosystem that drives sales.

John Kestner

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Richer interactions

We experience much of the world through computers, largely restricted to our sense of sight. But we've got four other senses! We're covered in a touch sensor that goes ignored by digital interfaces. The flood of information in our lives is too large and varied to be represented in patches of pixels. Physical objects provide a wealth of data that we absorb without thinking — e.g. The heft of coins in our pocket used to indicate how much we could buy, or a grandfather clock giving us information about time, not just in the chimes every quarter hour but also in the pendulum's steady progress. We need interfaces that gracefully combine the plasticity of digital bits with the subtle richness of physical attributes. Holtzman's Information Ecology research group explores just such interfaces. The Proverbial Wallet (a project I worked on) gets harder to open as you approach your monthly budget, leading to an intuitive financial sense. Kairoscope is a timepiece that negotiates your schedule and others' so that you show up at the same time as everyone else. Tastes Like Rain flavours your toothpaste to give you a tingling sense of the weather forecast while you're brushing teeth. Mantis, a sub-$100 home fabricator, makes physical objects that represent data in ways that flat screens cannot.

We count bullet points when shopping for consumer electronics, while we value qualitative experience in most products. Chairs, shoes — they do the same thing, so they compete on emotional qualities. How do those shoes make you feel? Is that chair comfortable and does it look good in the house? Unlike shoes and chairs, we make electronic objects do many things poorly. We need to think more holistically. Strip and polish rough features, and offer what's left to the network. We'll have built a community of objects, each honed for a different purpose, a satisfying functional and emotional extension of ourselves. We'll fulfil Sterling's goal to "design for, not just for objects or for people, but for the technosocial interactions that unite people and objects."

Healing the Future

As technologies such as nano-tech, 3D imaging and genetic engineering become a reality, here's a projection of the future in medical technologies

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HUVRand EWI

HUVR or heads up virtual reality bridges regular visual scans with a haptic feedback device on hand for manipulation. With this medical practitioner can just look at but feel the brain in a regular MRI. Furthermore, researchers from Columbia Engineering school developed a new method to non- invasively map the electrical activation of the heart. The technique, called Electromechanical Wave Imaging (EWI), uses ultrasound waves to detect very small deformations following the electrical activation of the heart. It can be incorporated into most current ultrasound scanners. Previously these measurements were possible only through invasive electrode contact.

Stemcells

Stem cells are primordial cells that divide and turn into other organs. Stem cells have the potential to be turned into any tissue in the body, an ability that has led researchers to believe they could be used to make "spare parts". Along with progress in genetic engineering, the idea of designer babies could eventually become a reality

Lipta woke up with a headache, feeling very uneasy. Thought she didn't know what it was yet, she knew something was wrong. She went to her trusty PDD (Personal Diagnostic Device) which measured her temperature, heart rate, respiration and some other parameters she wasn't even aware of. The measurements were saved on a remote database, and since her heart rate was unusual, her whole medical record was automatically forwarded to her doctor- Dr. Shah

She set up a video conference with her doctor, who prescribed sos medicines available from vending machines, but called her for a check-up later in the day. At her appointment, he studied a 3D visual of her brain scans from the MRI using HUVR. Also, through laser endoscopy, 3D images of the nether organs were obtained and checked for defects. After that, through EWI, her heart was checked for minute deformations.

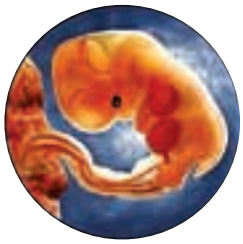
Although it was found later that Lipta was fine, she lived in an age of complex viruses and even more complex cures. Due to easy movements of humans, climate conditions, closer proximity to animal habitats, and evolutions of viruses to develop immunity for certain cures, diseases evolved and spread rapidly. As new cures were found, newer diseases were discovered.

Cures for cancer and AIDS were developed with the help of cloud computing projects like caBIG (Cancer Biomedics Informative Grid). Nanotech devices were released inside the body which could kill of unwanted cancer cells as soon as they grew.

A couple of days later, Lipta was back again, this time with her friend Kavya who was to undergo an operation. Her surgery right form anaesthetising the patient to making incisions was performed by a surgeon sitting in Denmark via human controlled robots. Robotics had come a long way since medical robots like nuvoSurge, Da Vinci and McSleepy were first used in surgery. The surgery was successful and as always 100 per cent accurate.

"Too bad", the doctors discussed amongst themselves, that "people like Lipta and Kavya are not like the transhumans of today who were the benefactors of the progress made in genetic engineering and cyborg search". Today, designer babies were conceived based on the selection of desirable genes, along with customization in gender, skin and colour etc. Movies such as *Gattaca* that predicted such a day were no longer a crazy man's imagination. Genetic engineering as always was subject to a lot of derision and debate, but its advantages were obvious. But still, scientists were able to clone parts of the human body and through stem cell growth, could find viable cures for conditions as diverse as Parkinson's disease, diabetics and spinal cord injury [http://bit.ly/digitstem]

As the definition of human beings expands, medicine will continue to evolve. As new cures and diseases keep being discovered, one trend remains constant, that man has been able to predict his future by actually creating it.



Designer babies

This technology is still far away but basically it implies that some time in the future you could potentially choose the most desirable genes for your offspring thereby increasing resistance, selecting certain traits and much more. One of the small victories in this field comes in the form of a break-through that could have huge implications. British and Canadian scientists have found a way of reprogramming skin cells taken from adults, effectively winding the clock back on the cells until they were in embryonic form.

Robot Surgery

A team of surgeons at McGill University, including the da Vinci robo-surgeon and a robot anaesthesiologist named, McSleey, recently removed a person's prostate during what is being billed as the world's first all-robotic surgery. The device transmits hi-def 3D images to nearby workstation, where it is controlled by surgeons with a precision that cannot be provided by humans alone.

Holographic Displays

Holography gives an illusion of an object being there even when it is not. Holography is not a new technique, a simple optical set up was used to produce a hologram back in 1960s. But while that experiment was done using a real object, the idea today is also about creating a hologram of an object that exists in the 3D modelling software on the designer's computer. Holographic displays must not be confused with 3D displays – an image on these 3D displays actually offers only a single perspective, i.e. Tilting your head to the side wouldn't show you any additional detail. However, in holographic displays, tilting your to one side will show you the other side of the thing on display. That is why many people prefer calling holograms real-3D! Also limiting holographic displays is the enormous amount of diskspace holographic movies will take. Research work is probably being done by every display giant to get out a successful holographic display. German company 'SeeReal' have also shown a prototype of a holographic TV.

Gaming in the future:

The year is 2021 and Pineapple Corp. has launched its latest gaming device – the GameFloor 3! And as always, Digit is here with a first hand review

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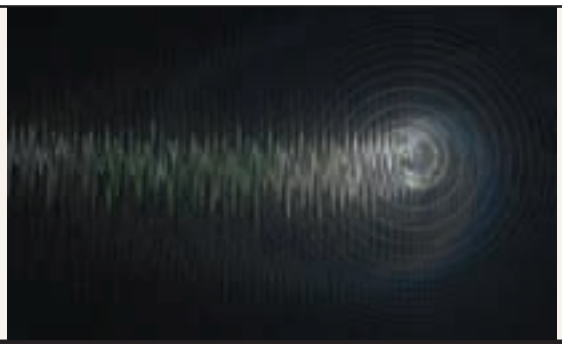
Gaming has advanced a good deal – starting from the very humble 1080p 3D HD a decade ago, we now have one of the most powerful gaming consoles ever. Armed with holographic Retina display, ultrasound-haptic feedback, protected by the new Godzilla Glass™ – the brand new Pineapple™ GameFloor 3! And Digit, as always, is the first one to bring you an in-depth review.

The GameFloor 3, as the name may suggest, is NOT a floor. The console, in fact, brings your floor to life with incredible holographic images. The third iteration of the console would light up as a big a floor as you might possibly have, if there's nothing obstructing the way of the projectors. The package consists of a two fist-sized units, which can be hooked onto any opposing walls for completely immersive holographic experience.

The projectors and sensors on the units are protected by the new Godzilla Glass™, which survives almost anything but a fusion blast in immediate vicinity. We couldn't test the claim for obvious reasons. Once powered up, the Pineapple™ logo immediately pops up mid-air in your room. The detail of the new Retina Holographic-Display is immediately apparent in the vividly coloured peel of the fruit. In the new version, even the logo has been made touchable, and the wonderful imitation of the surface is immediately apparent. We found it hard to distinguish one pixel on the surface from other, even as we nearly bent close enough to get poked by the Pineapple logo.

The GameFloor 3 took no time to hook to the cloud; a quick retinal-authentication and we were logged in and set to go. The console comes with a 3 month subscription to 'Crysis X' and 'Robo Soccer 2021'. A very thoughtful addition of the showcase games. As we started the console, the fluidity was immediately apparent. The Pineapple cloud servers returned very good processing rates, even at peak hours. Remember, this is essential for the cloud to run these genormously processor-heavy games. The animations were smooth, and the data connection showed no lag. Couple this processing power with lowest rates per gigaflop, and the company has a solid cloud backend for its amazing hardware.

We were surprised by the sheer detail as we started 'Crysis X', the insane resolution eliminating any need of what was once known as 'anti-aliasing'. The stereoscopic cameras detected every movement of our body – it required the tiniest indication to pull the trigger of the virtual M-16 rifle in our hands for



Directional Sound

Directional sound is to audio, what lasers are to light – point-to-point travel of wave without dispersion; with the implementation just being that much more difficult. Practically, even very large speakers don't give the required levels of directivity. Coming to the rescue again are ultrasound waves – these waves are sent into space, and they in-turn, vibrate the neighbouring air particles for highly directional sound. They effectively act as a very large speaker. Wonderful things, these ultrasound waves! Where's the 'Like' button? Holosonics is a company that already develops directional sound systems for outdoor use, especially in selective advertisement space. But this technology still requires evolution to produce the fidelity required for those boom-boom gunshots.

Ultrasound Haptic Feedback

Recently, a team of researchers at University of Tokyo have created a system which can give you the sensation of touch in mid-air. The system consist of cameras which track the motion of your hand, and as you approach this virtual object in midair, a focussed ultrasound wave hits your hand to impart the sensation of touch. Well, for now, these object can only be soft, as the intensity of these ultrasound waves is low – to prevent them from destroying your precious eardrums. Currently, these waves can impart the feeling of only a plain solid surface. However, researchers say that they can be manipulated to give sensation of different curvatures. Should be just in time for GameFloor 3!

Redifined

the perfect headshot. The bullet left a perfect, Bollywood-style smoke trail, and pwned the enemy for a splatter of holographic blood all over the floor. We even felt the weight of the virtual gun through the elaborate haptic feedback system of the GameFloor. Moreover, the new directional sound system of GameFloor 3 will make sure that the clatter of guns does not wake up neighbours in the middle of the night. The latest version of the consoles even ensures that each player gets his individual audio spotlight. Soon, a few friends joined in the fun our holographically present mates from our US office teamed up for a game of Soccer 2021. The new version of the console allows up to ten of your friends to be transported virtually to the confines of your room. The new feedback system makes the ball feel as good as real on your feet. But the best thing about the new GameFloor – if you are tired, pick up the controller and enjoy the game from the sofa without ever needing to pause; your place in the game is now taken by your customisable virtual avatar.

The excellent display and CIA-esque tracking takes the GameFloor to a whole new level. All this makes this new gaming device a must have for any avid gamer. Thinking back to the old days of gaming either on a regular PC or one of those early motion gaming consoles gives us that warm fuzzy feeling inside, but no matter how old school we are, the new redefined experience with the GameFloor3 was something we will remember for a long time.

Cloud computing

The Cloud is already hovering over us. In the simplest of words, cloud computing means shifting some part of your computing devices to a server. This is nothing new, as internet drives have existed for about a decade now. However, the cloud will evolve to take up a greater fraction of the duties – till the only thing on your side of the channel will be a display, and your input devices. What is most important is that the device at your end could be anything from a laptop to a tiny phone, and it will still compute in seconds!

One case of cloud computing, very similar to what we have envisioned here, is OnLive. It is an on-demand cloud gaming server, where your network speed is the only limit. So given the right bandwidth, you could get Crysis 2 running flawlessly on a Pentium 4! With sophisticated stream compression techniques at work, OnLive plans to invade all your devices with games and other computationally intensive applications like 3D modelling and animation.

Final piece in the cloud puzzle: Homomorphic Encryption – One reason why major corporations don't want to adopt the cloud is the lack of security: Although data can be encrypted when sent to the cloud server, it cannot process the data in its encrypted form, and thus will have to decrypt it to process it – a proposition that companies are not very comfortable with. So, what was needed was an encryption standard which would allow the server to manipulate the data in its encrypted form. When the resultant is decrypted on client side, it gives the required result. This Homomorphic Encryption could finally lead to mass adoption of cloud tech.

Motion sensing

Who hasn't heard of Kinect by now. Microsoft's motion sensing attachment for Xbox 360 used capture technology from Israeli firm PrimeSense. Kinect works by creating a 3D model of the room, and the people inside it, using depth sensing cameras and infrared sensors. This model is then analysed by the software part of Kinect to associate body gestures with commands. A completely natural interface, motion sensing is going to be huge in future. Gaming will probably gain the most from further sophistication of motion sensing. The challenges ahead lie in the form of more accurate recognition of more subtle body movements, and doing so while the user is standing or sitting – a position that Kinect does not permit as of now.

Transitioning to the next level

In the next decade, personal transportation will be complemented by a whole new approach to getting from 'A' to 'B.' The compressed air-powered car from Tata Group and other short trip vehicular variants will dominate the world market for urban mobility as an adjunct to built-in architectural features such as escalators, moving walkways and large lift platform areas. In my latest collection, Sentury II I've included several pictures of the Hypervan, a luxury, high-speed intercity transporter that represents the persistence of private transport. New materials and miniaturized electronics will furnish even bottom market vehicles with state-of-the-art personal media devices and electronic links to the vehicle's operation. There'll be a proliferation of various wearable-wheeled devices that will offer mobility for those with a good sense of balance. Right now, half of the world's population lives in cities and the proliferation of large enclosed architectural enclaves will continue. The advent of powered exo-skeletal devices will allow mobility for the elderly and the heretofore mobility challenged. These will range from prosthetic limbs to full exo-frames activated by EKG waves linking the device directly to the brain. Organs will be 'grown' using one's own DNA print, a technique already on its way to accomplishment. Nano-engineered contact lens derivatives will 'float' information overlaid at will onto one's field of vision.

Illustrating the Future

As a designer I can illustrate my ideas. In my latest book, Sentury II, there are several examples of imaginative personal devices that combine the traditional functions of a PDA with cartridge-based aromas and stimulants making the product a cross-over between media functions and personal preference functions. Other illustrations that combine design with the ability to visualize and illustrate are a 'monster' gyro racing bike/vehicle, a luxury inter-galactic liner and future architecture as done for Qatar Steel's look at Doha. I designed a product for the movie Mission Impossible III called the Mask Maker. It combined the ability to design a fictitious product with the conviction of a believable finished device.

The production of illustrative material will benefit from direct brain linkage to rapid prototype devices and the creation of scenario production by literally thinking about it. I can visualize the imagination favoured with unlimited resources of data and visual information.

There are, in my mind, caveats. With the brain now linked into a saturated visual and data rich world, when will one know the difference between 'real' and actual physical reality? Our dreams are the ultimate submersion into scenario with the complete range of sensory duplication we experience when we're awake. We'll certainly achieve that ability to duplicate reality to such an extent that it will be indistinguishable from, well, the touch and feel of the 'real' world.

Creating with Unlimited Information

If I could visualize in my mind marvellous scenarios and by triggering a learned response see my visions displayed on a

wall screen or on my nano-scaled lenses, I'd still be the judgemental monitor of result, picking and choosing iterations, shifting colour and altering scenic content. It would still be my individual motivation, sensibility, taste and sense of visual result. I could enlist endless access to pictorial reference and other data formats that would enrich my imaginative creation. Link this visualization ability to three-dimensional production and you'd have the incredible ability to literally create artifact by just visualizing the end result. You would watch your creation take form as a 3-D image, revolve the image, make adjustments based on design judgement and 'send' the data to a prototyping device or indeed anywhere in the world via global communication networks. The creative impetus would still be individual but vastly enhanced by technology now being proposed and experimented with. It's going to be a thrilling ride.

I'm fascinated by the promise of linkage to database, but on a need-to-know demand basis. I don't favor submersion into a constant deluge of sensation and information enabled by an implant. Our brains and vision field management parameters now sort through and present relevant sensory response as needed as we navigate our daily lives.

The world as we know it today will be strangely familiar but with a profound overlay of induced reality. The professional, social and governmental arenas will be forever altered and we'll be living in a download world that enables advantage not dreamed of today. As citizens of whatever society we are part of, our critically important responsibility is to blunt the role of restrictive government and reinforce individual access and beneficial utilization of techniques that will evolve.

Syd Mead

He graduated from the Art Center School in Los Angeles (now the Art Center College of Design in Pasadena, California with a degree in Transportation/Product design, augmented by the designation 'great distinction.' His work has involved illustrating and designing high-end publications for major U.S. industrial corporations.

Big Bang Matters

In the early days, Mega Science was defined as 'big money, big machines' and was used to refer mainly to unique experimental apparatus like particle accelerators, ground or space telescopes like the Hubble Space Telescope, and Space Exploration (ESA and ISS). However, this definition has evolved since and now applies to complex research where not only very large sums of money, necessitating partnerships between different countries, are a requirement but also large teams of competent researchers, thus needing cross-border co-operations between countries and participating institutes often over long periods of time. Consequently an efficient technical coordination and streamlined resource management becomes mandatory over the project duration. The evolution of cross-disciplinary competence is a natural outcome throughout the life of such a Mega Project.

A pioneering example is the European Laboratory for Particle Physics (CERN), in Geneva, Switzerland. India's role in the Large Hadron Collider experimental program at CERN showed the entire world that we can participate in giant endeavours spanning the globe and have the technological wherewithal in both, hardware and software technologies. Nonetheless, no country can keep its progress at par with international standards without the assistance of other countries.

As Betrand Russel once said: "almost everything that distinguishes the modern world from earlier centuries is attributable to the progress in science". This desire to extend our knowledge and go beyond the present limits is part of our heritage and cultural life. Benefits follow naturally.

A mega project provides opportunities and platforms to work together, facilitating first-hand experience of work ethic and scientific and technological developments in other countries. By allowing access to sophisticated research facilities, it permits an interaction between colleagues at all levels thus filling the lacuna of know-how and knowledge resulting in an accelerated pace of development.

Coming to the point of education and outreach, nothing can beat the 'Black Hole' phenomena that suddenly glamorized particle physics all over the world, particularly in India. This is one example where a mega science project caught the imagination (remember the imaginary end of the world on September 10, 2008?) and popularised science in the country. A little known CERN Laboratory in Geneva became the buzzword. Several institutes, students and teaching staff from remote corners of the country became interested in forging partnerships, interning and becoming a part of the phenomena.

We need to continue and take these partnerships to another dimension; namely, by bringing the large science into each classroom and into the common man's life.

What are commercial benefits from mega science projects?

As an incubator for invention and for the development of new products, services, ideas and organizations, cross-disciplinary frontier research results in ambitious initiatives. Did anyone predict the colossal impact of the World Wide Web, developed at CERN for sharing scientific data among collaborators? To propose and defend a bold idea is only possible within a framework of like-minded competent people which is provided by a mega project.

Archana Sharma

Archana Sharma is an Indian experimental physicist and a staff member of CERN European Organization for Nuclear Research. She has been working there since 1987 and is presently working on the Compact Muon Solenoid (CMS) experiment at the Large Hadron Collider (LHC) project in Geneva, Switzerland.

The list of spin-offs is endless. The internet provides seamless access to information that is stored in many different geographical locations. The Grid is an infrastructure that provides seamless access to computing power and data storage capacity distributed over the globe. The weather Grid system comprises thousands of interlinked computers helping to process complex weather data to improve forecasting. Money and human lives can, and are, being saved using accurate weather forecasting.

In a nutshell, significant returns on financial investments are made in mega projects. Financial multipliers in the order of 2.7 for ESA and 3.7 for CERN clearly indicate that money invested in mega science generates two- to four-fold returns for the investors and industry at large.

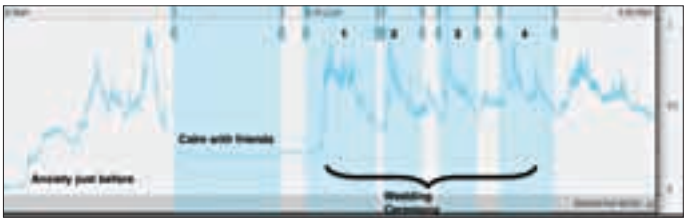
International collaborations at CERN for example, have been very successful in technology transfer, where research developments have led to applications in other fields. A pioneering study carried out at CERN into the effect of the experience that technological and industrial partners gain through working in the arena of mega science revealed a variety of outcomes which included technological learning, the development of new products and markets and impact on the firm's organization. Together, these findings implied ways in which CERN and by implication other mega science centres and projects - could further boost technology transfer into spill-over benefits for industrial knowledge and enhance their contribution to industrial R&D and innovation.

We look forward to unlocking answers to basic questions on origins of the universe and the technological fallout in the years to come.

Emotions: shaping the future of everyday technology

A Hindu bride, beautifully adorned before her wedding, recently did something no other bride has ever done in India: Just before the ceremony, she chose to slip a small "Q sensor" on her leg, just above the ankle, hidden under her dress. The sensor recorded a signal known as skin conductance, an electrical measure on the surface of the skin that changes when innervations are received under the skin from the sympathetic nervous system. This system activates with emotional events, and such events were about to happen. The bride showed us her Q data leading up to the wedding: peaks when she was stressed (who wouldn't be?) followed by a valley when her friends were chilling with her. The four biggest peaks came during the biggest emotional moments of the ceremony: First, during the solemn vows; second, when she moved to the right of the groom; third, when the groom tied the mangalsutra; and fourth, when they were declared husband and wife.

Creating technology to collect spontaneous emotional data, and to respond with sensitivity and respect to emotional events in the real world is a focus of my team's research at MIT, and also now of a spinout company, Affectiva. The sensor worn by the bride is able to be used by scientists, doctors, and teachers for understanding and communicating stress – for example, in a boy who is autistic and non-speaking, who might experience hyper-sensitivity to sounds, lights or smells and be unable to describe this in words. When the boy wears the sensor and shows you his data, and you see it escalate with a particular sensory input, then you can debug what might be bothering him. Emotions are not always communicated accurately through face or voice. New emotion technology will enable better understanding. This same sensor, worn on the wrist, has sensitive responses to seizures, and to many medications, and in some cases it might have a characteristic response to a drug craving or to a panic attack. In the near future your cell phone will analyze patterns in signals from your body that you want to detect, and respond to those with customized support. It might bring you encouraging messages if you are struggling with stress-related overeating and if your sensor signals heightened stress. It could alert nearby people if you are having a seizure. It might crowd-source you an empathetic message when you're feeling down and need to feel hope restored.



When we set out to measure emotion, with engineering precision, we discovered that we were measuring physiological systems where changes in functioning almost always signaled something important. In the future, small sensors like the bride chose to wear will be part of everyday life for people who wish to better understand and manage stress and medical conditions that are exacerbated by stress. The sensors will get smaller and cheaper and more fashionable with design. But the future of emotion technology is even greater.

Rosalind W. Picard
Professor, MIT Media Laboratory and Chief Scientist, Co-founder, and Chairman, Affectiva Inc.

How often have you been frustrated using technology, and when the next version comes out you learn they added a lot of features but did not fix the most frustrating parts of the experience? Did you make a facial expression of annoyance at that pop-up ad? But it was ignored. What if you actually liked an ad and smiled with delight after clicking on it, instead of looking bored? What if technology could see when it pleased or displeased users, transmitting only the anonymous expression if privacy is a concern, and let its creators know which parts were most frustrating? This "real world" feedback is starting to be part of our future: new software is enabling facial expressions to be communicated online, empowering users to send nonverbal messages to big companies, showing them exactly when customers are confused, upset, displeased, angry, annoyed, or interested and delighted. Affdex online software by Affectiva is the first new step in this direction. Power to the people is coming in the online world – and companies are going to need to pay attention to this, just like they pay attention to you and your expressed emotions if you communicate face-to-face in their store. In the future, people will expect smart phones, tablets, online services, kiosks, computers, and robots, all to show respect for human feelings.

Learn more about the Sensor/Facial Emotion Recognition technology: www.affectiva.com

Reading/Writing 2.0

Much learning and recreation today is still in the form of the written word, to be imbibed by reading. We take a peek into the future to see how human kind would eventually consume. Won't we read anymore?

Electronic Paper

Electronic paper is a display technology which gives the appearance of ordinary ink on paper. It's more readable, than LCDs, in sunlight. Also it can display a stable image continuously without consuming electricity thereby drastically reducing the power consumption. It only needs external power to change the image being displayed. The Dutch company iRex has designed the reader iLiad which allows the readers to write on e-paper with a stylus. Ongoing research will soon equip e-paper to have full colour display and capable of displaying videos which is not possible due to current frame refresh rates nearing a second. Mirasol Displays by Qualcom is huge a step towards this. Read more: http://bit.ly/Dmirasol

Rolling Paper Like Displays

Sony has demonstrated a flexible colour display which can be wrapped around a pencil. The screen, although crude in quality currently, are able to display colour and video without being affected by the rolling. It uses organic thin film transistors for its circuits which can be fabricated on a flexible substrate thus eliminating the need for rigid chips.

Being a fiction writer is not as easy as one may think, especially in today's day and age. Kamal had been working on a new concept for a science fiction series for quite some time now and was contemplating options. The story's central theme was a new kind of a polygraph (or lie-detector) being invented which interfaced directly with the nervous system and was a hundred percent accurate. The plot mostly dealt with the socio-political storm such an invention would kick up. However, Kamal's concerns weren't so much about the creative direction that the book would take but rather the publishing options.

In the new age, one would expect that the new technologies, wider audiences and unlimited outreach would make writing easier and more enriching. However, as it turned out, it only complicated matters. Kamal had to look into the suitability of the story for the traditional paper medium and also the electronic medium. The traditional paper medium was well within his comfort zone but the advent of 3D augmented reality books had made it quite scary. In order to write a commercially successful book one also needed to incorporate special 3D and AR features to enhance the reading experience. Like special effects in the movies, Kamal have to tweak his story line to incorporate breath-taking animations and complicated 3D illustrations to attract more readers.

As if this alone wasn't enough, the publishing house puts e-book readers in his kitty too. These days, any new book had to be appealing to the new age e-book readers. They were simple electronic paper readers which were quite primitive and did not require any special effort from the author's side but one still needed to write a demo chapter with enhanced media.

Rigid e-paper readers were quite out of fashion now and new age rolling e-paper readers came equipped with 3D and AR capabilities. One would think that handling 3D and AR content in electronic medium would not require any extra effort over the 3D paper medium. But, one couldn't be more wrong to expect that. For a while 3D was an enhancment for story telling, but nowadays mere 3D sells stories.

And finally, the biggest niggle was that, the new age e-reader interfaces and software come in to make one's life difficult. They enabled collaborative book reviews, personal book clubs and what not. Hence, Kamal need to appease this community of new age social readers too.

And so he was left with the most Herculean task of his life – that of appealing to all the myriad mindsets and reading aficionados out there at the same time. Though he envisioned the future, Kamal bet H.G. Wells never had to deal with such complexities! Dealing with the future is quite different from thinking about it.

3D Augmented Reality Books

South Korea's Gwangju Institute animated two Korean folklore children's books using 3D software. One can see animation associated with certain images of the book with the assistance of 3D glasses. Similarly, Metaio has developed an augmented reality technology which superimposes 3D objects on a book through camera recognition software. The user can download the software and use it on any windows PC equipped with a modern webcam. The image processing software identifies the book using a webcam and no glasses are required.

Future E-reader Interfaces

Future interfaces will enable e-readers to have additional content provided by users. Users will be able to append informational layers, background details etc. and debate on the content developing the augmented text collaboratively. The software will enable networking with like-minded readers. With content being developed specially for the electronic medium, one can expect stories developing based on reader's input. Readers may communicate with the characters using their communication devices, discover hidden chapters and plot twists after solving certain clues hidden within the text and explore non-linear storylines via real time input.

"Mr Watson, come here. I want you to see this!"

When asked to write this guest column, I was asked to predict where the mobile industry was going to be 10 years from now. Predicting this is akin to asking to guess if we'll have flying cars or if we'd have finally put a person on the surface of Mars, to be honest. In the last five years, the mobile technology space has evolved faster than the traditional computer industry has in the last 15. This is thanks to Apple, Google, Nokia, Facebook and countless others who've realised how important it is to invest time, resources and imagination into the mobile technology industry, I can now securely say that a person in Rural India with a smartphone has more access to immediate information, breaking news, multimedia content and over 600 million people (thanks to Facebook for being the King of Time Killers) than the Former American President Clinton did during his eight-year administration.

According to a recent report, there are around 5.5 billion mobile devices in the world. Of them, 2.3 are in the Asian/Pacific region alone. Emerging markets that didn't have internet four years ago are now awash with Android devices that are allowing people to finally communicate with the outside world without the need of trekking for miles to find an expensive cyber café. Mobile technology is finally uniting the planet into one cohesive group of bloggers, tweeters, photo and video creators and people just communicating with each other. Look what happened recently with the democratic upheaval in Egypt. Hundreds of thousands of people, fed up with their world, flooded the streets of their country and, with the help of their friends and their mobile phones, showed the world their struggle. "Social Media and Twitter/Facebook was the catalyst for the revolution" many said. It wasn't social media that did it, it was the people. People who now have the technology to show the world what was immediately going on in their lives with the help of technology they didn't have 10 years ago.

Now, I know this was a long rambling to possibly answer the question posed to me – "Where is Mobile Technology going to be in 10 years?", but I have a point to all of this. It's not the technology that is going to be evolved, it's going to be what we do with it that is going to be evolved. When I first started out in the mobile industry a little over seven years ago, the most advanced mobile device was the Blackberry. Now, we have dual core (and some rumors of a quad core later next year) powered, GPS-enabled multimedia communication devices that feel like a Playstation 3 and a modern desktop computer had a lovechild that I can put in my front pocket. Tablets of 10.1 inches, like the iPad and the flood of Android-powered tablets are eroding and killing off the ultra-portable netbooks just as Android-powered mobile phones have handed down the death sentence to the feature phones from only five years ago. But what does this mean to the kid in Rural India or the techie sitting in his garage in San Francisco?

Jason Ling

Jason has been a pioneer in the Social Media and Mobile/Web 2.0 Industry for many years and frequently speaks about the future of Mobile Technology as it pertains to social interaction and is an up-and-coming futurist. He currently resides in San Francisco.

Ten-inch Super AMOLED Screens with dual core processors connected to some sort of cloud-based server systems that allow me to access all of my music, videos and friends and whatever I want to know about on the internet at the touch of an icon is a nice thing, but it's just describing the tool that has taken a population of nearly seven billion people and moved them closer to each other. The technology has finally caught up to what the idea of mobility has always been – connecting people and information where ever they are and whatever it may be.

So, I'm sorry if this isn't exactly what you were expecting when it comes to a bit of technology crystal ball gazing of the future. But the truth is, the important thing to really keep in the back of your head isn't what's the new toy going to be in 2016 or what's going to be the new media service that some tech company that no one has heard of today is going to be rolling out on mobile devices in 2021...it's what we are going to do with it. For those of you who remember your history, when Alexander Bell first shouted "Watson, come here! I want to see you!", he set in motion the process of connecting the world. As the technology becomes more available, all of us will be connected...regardless of distance, gender, age, beliefs or interests. That is what I predict will be the world in 10 years.

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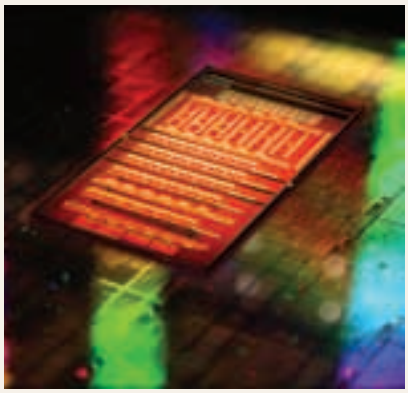


System integration Silicon Photonics

The basic idea behind Silicon photonics is to replace electricity as the medium of data transfer components on a board, with light. As fiber optics have revolutionised our long distance communication, efforts are on now to bring that efficiency over very short distances. This will be especially important as more and more components will be integrated on the same chip. It will rid us of the bottleneck that is set to develop during inter-component communication as the processing power increases. The best part is that these Silicon photonic devices will use the same fabrication technology that we have been using till now. Thus, there will be no loss of density when shifting to these Silicon photonic devices.

The PC is still here

After many predictions over the years of its imminent demise, the PC is still alive and kicking. Check out the modern day PC in its new avatar

Harmanpreet Singh
readersletters@thinkdigit.com

Human beings love to predict the demise of things. Besides their own race, I have been the second most popular item on the 'things-that'll-be-in-hell-soon' list. But Rapture '11 and Doomsday '12 came and went by; the human race is still here. So am I.

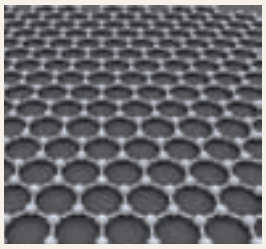
There are many reasons I still exist – the primary one being the human race's love for continually evolving bigger better things that the smaller mobiles and tablets have never been able to catch up with. When I was playing 720p video, these devices were on VGA. When I was pwning 1080p, they barely started chewing on the 720p. Even when they started catching up, the people who developed these high quality videos and games couldn't do it on mobiles, or even tablets (sorry iMovie, you're amateur). 1080p to 3D, and then on to holographic videos – people couldn't get enough of pixels, and so I lived on. RayWJ has been using me for the past 2 decades. I am indispensable!

The insides have been changing at a fast pace. I have a 120-core processor, and they are doubling that number in a couple of years. Those who are interested to know – yes, the damned Moore's Law is still holding: The beast

NVRAM

One thing that irks almost everyone is the booting up time of sophisticated computer devices – well, at least we hate it. This is because while you are using the computer, your 'session' is stored in the RAM, which is a volatile memory, i.e. it loses all its data as soon as it stops receiving power. In the future however, we are set to get what is called non-volatile RAM. In fact, a type of NVRAM is already available: SSDs! These flash memory chips are a type of NVRAM because they give you random access any of the data stored anywhere on drive can be accessed in equal time. This gives them excellent read times, but they don't have good enough write times, or reliability to replace your RAM. By reliability, we mean that this flash memory has a limited number of write/erase cycles. FeRAM (ferroelectric RAM) and MRAM (Magnetoresistive RAM) are two of the most promising NVRAM technologies coming up. The milipede memory technique developed by IBM is another innovative solution, which uses the age-old punch card technique, but at the nanometre scale!

Super-fast communication using Graphene based optical modulator



Graphene is a single atom layer of Carbon atoms. Layers of Graphene are what ultimately gives us graphite. The fermi level of electrons in a sheet can be manipulated using voltage. While Graphene is naturally opaque to near-infrared light used in optical networks, it becomes transparent with a negative or positive voltage applied to it. Using this properly a team of researchers, led by UC Berkley Engineering professor Xiang Zhang, have developed an optical modulator with potential frequencies of up to 500 GHz, which is ten times faster than the current technologies. Now, an optical modulator is the major workhorse in an optical network, and the time in which it can switch between on and off is what generally decides the speed of operation of the network. An optical modulator of such high frequency of operation might just be perfect companion for Silicon photonics and our ultra-fast hard-drives. And since the internet also relies on an optical network, expect some glitch-free streaming of superHD content soon.

inside me has about 46 billion transistors – all of them three dimensional. Silicon was getting too hot with these many transistors – so I was outfitted with Graphene-based transistors instead. They are cool, literally.

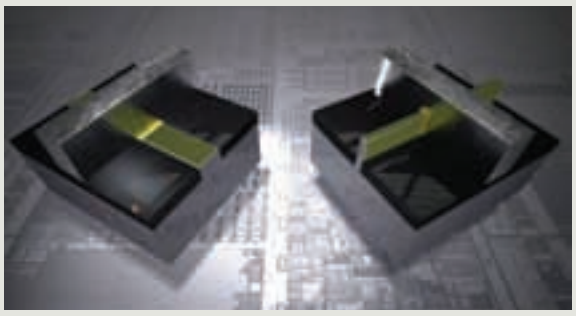
Everything besides the CPU is also closer to it. Like everything else, the PCs come in a neat package. Over the last decade, everything started entering this 'package', and now we have the CPU, GPU and RAM all bunched together like a cool family – literally again. Also, they don't communicate with each other through electrical signals. When the internals are so fast, the electrical signals were no longer feasible while switching, so they were replaced by the fastest signal known to man: Light. And the wonder substance of our generation, Graphene, is involved again. Which also means that it's been some five years since they stopped manufacturing the platter based hard drives, which were too slow. As spinning the platter any faster would have brought the world to an end, they were permanently replaced with solid state drives. Inside me, there is not even a port to plug-in those ancient hard drives. The Non-Volatile nature of the NVRAM also ensures that I boot-up immediately. What's the use of being super-fast if I take 100 seconds to get out of bed?

The communication with the outside components also happens with the same light based technology. You see, they weren't kidding when they said the future is bright #CoolPCJoke.

The peripherals outside the box are equally impressive – the display is a high-res holographic projection system which the GPU works hard to power. The make of the GPU? Well, Nvidia and AMD have still got their horns locked.

Unlike the rest of the world, the mouse and keyboard are still very much the same. Changing it in anyway would have led to a major decrease in the average WPM rates and a major economic decline, so the keyboard was left untouched for the general good of humanity. The mouse looks the same, but works on anything now – you can run it over water too. Even if you don't need to.

3D Transistors



While everything is running off into the third dimension why should our beloved transistor be confined to a two dimensional existence. Intel recently announced the 3D transistor, which really is a fancy name for a tri-gate transistor. The raised fin (see figure) allows better control over current flow by having three contact surfaces with gate. This ensures that the current flow is high in 'ON' state and nearly zero in 'OFF' state. This better contact also ensures that the switching between these two states is fast. The good news is that this isn't a concept technology like most. This technology uses 22 nanometer manufacturing process, and will be used in 2012 processor range 'Ivy Bridge'. Look out for better efficiency, performance and low power requirements. Also expect Intel to try and wrestle the share in handheld market with this technology, where it has lost quite a lot of ground to ARM.

TRENDS & TECHNOLOGY TIMELINE 2010+

A roadmap for the exploration of current & future trends
(+ some predictions to stir things up. More at nowandnext.com)

TIME ZONES

- ZONE 1: 2010-2015
- ZONE 2: 2015-2020
- ZONE 3: 2020-2025
- ZONE 4: 2025-2035
- ZONE 5: 2035-2050

Notes on time travel

This map is a broad representation of some of the trends and technologies currently visible. Improvement works are carried out at weekends and travellers should check to see whether lines are still operable before commencing any journeys. Helpful suggestions concerning new routes and excursions are always welcome.

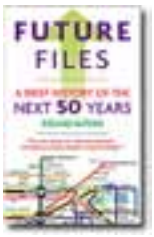
If you wish to travel outside of Zone 1 you are advised to bring comfy shoes and a camera. Travellers are also advised to bring their own supplies of food and water although weapons are unnecessary if you keep to well trodden paths. Also note that travel into Zone 5 is not available for people aged over 75 years of age.

A3 and A2 Prints of this map

Full colour prints of this map are available to anyone that asks nicely. A small charge is levied to cover print and postage costs only. Contact <richard@nowandnext.com> stating whether you'd like A3 or A2 size and saying which country the map is to be delivered to. Delivery is available to anywhere in the world. Alternatively, just print this out yourself (A3 minimum recommended)

Sourced

Material for this map has been soured from a number of publications including Future Files and What's Next



www.futuretrendsbook.com

What'sNext
www.nowandnext.com

Acknowledgements

This map was conceived and created by Richard Watson at Nowandnext.com with some help from Benjamin Frazer at Snap. Also thanks to Oliver Freeman, Mike Jackson and Scott Martin.

Convergence of healthcare and financial planning
Contents of British Library available on a postage stamp-sized chip
Digital cash widely embedded in clothing
Digital cash widely embedded in human body
Single global e-currency
Animals suing humans
Baby licences
Growth of 'Tech-No' movement
Desire for control
Culture
Global population hits 9 billion
Most people have multiple presences
Online funerals
Search for meaning (Mondays to Fridays only)
Digital celebrities
Brain drain from hedge funds to scientific R&D (energy #1 priority)
Wealth asylum seekers
Calorie taxes
Food passports
10-mile diets
Convenience
Well-being
Provenance
Indulgence
Authenticity
Rise of N11 countries
Rising levels of autocracy
Growth of micro-insurance
Business sustainability largest determinant of stock price
Whole life financial planning linked to whole family model
Government e-services
Growth of state contro
First Internet court
Power shift Eastwards
Emergence of Gross National Happiness metrics
Online communities start physical communities
Genetically enhanced pets
Emergence of Gross National Happiness metrics
Growth of bartering
Speech recog
75-year mortgages
Pre-pay currency cards
Micro-finance
Monolines
EDLP
Retirement
Last CD is published
Paper statements & bills
Widespread cuts in public services
Figurative revolution in the arts as neoclassicism returns
e-ink comes of age
Face recognition
Free-tailing
Bionic Olympics
A graphic novel wins the Booker Prize
Acute labour shortages in aged-care sector
Conspicuous non-consumption
women behav
Infrastructure under-investmen
Synthetic biology
Life story labelling
Nuclear p
Move to global pricing of consumer goods (driven by shopbots)
Just-in-time shopping
Too much choice
Blurring of sectors
Sensory experiences
Urbanisation
Disappearance of checkouts
Robocops in shopping malls
Local shopping
Price polarisation (High / Low)
Localism
Virtual libraries
Device convergence
Increasing interest rates
Stored value car
Blurring of scientific disciplines
Malicious intent detectors
Pets outnumber people globally
Online micro-payments
Digital mirrors
Basic forms of AI
Growth of security algorithms
Micro-finance
Robot population surpasses human population
High Street Internet addiction clinic
Mind control toys
Personalisation
Use of fake information as a weapon
P2P len
Average lifespan 100 years
Unexpected increase in fertility rates
Death of distance
Health & safety hysteria
Information pandemics
Mobile payn
Empathy
'Spinning disk' memory devices
Home/work convergence
Basic forms of AI
Web 2.0
Volatility
Societal feminisation
Simplicity
Unsupe
Home swap holidays
Full concentration
Machines that can judge emotional state of user
Cloud storage
T.I.M
Devices re-programming themselves in light of experience
Increasing regulation & compliance
25% of company HQs now virtual
Widespread use of brain scans in job interviews
Single person households
Tightening security
Contactless payments
Online video
Micro-blogging
Digitalisation
Binge drin
Physical newspapers become luxury items
Near extinction of quality journalism spawns philanthropic funding
Digital diets
Growth in passenger numbers
Constant digital distraction
Prediction markets
Telepresence
Virtual currencie
Domestic tourism
Online medical records
Green IT
Voluntourism
Childcare robots
Face recognition doors
Quiet paint
4 billion mobile phone subscribers
Medical tourism
Intelligent packaging
Sustainability
Fair trade
Wireless re-charge
Low-cost competition
Shifting centres of economic activity
Cyber-pet vets
Video wallpaper
Aged care robots
Holographic storage
Wind power
Outsourcing backlash
Space tourism
Dining Rooms
Computers with moving parts
Modesty
Green cities
Slow food
Consumer e-health
Cautious optimism
Verbal search
Ocean dead zones
Green buildings
Comfort foods
CHIME liquidity
Affective computing
Sustainable tourism
Ubiquitous computing
Nano-solar
Global hospital brands
End of low-cost inputs
Eco-cynics
Gen X start to outlive their offspring
Most people have 2+
Fuel-cell phones
Augmented reality contact lenses
Phone spam
Wearable computers
Human organ farms
Skills shortages bi
Resources increasingly acquired on a no questions asked basis
DNA computing
Global sensor network
Urban (vertical) farming
Male birth control pill
Digital nomads
Focus on hardware reduces as services more distributed and interoperable
Rise of the vegetarians
Creation of new arable lands as planet warms up
Plastic bones
Artificial livers
Quantum computing
Declining water quality
No more anonymous email addresses (one email address per person)
Peak water
Genetic diets
Privacy
All babies implanted with GPS & ID chips
80%
Global migration drift to warming parts of the northern hemisphere
Individual energy/carbon monitoring leads to allowances and/or tiered costing based on system akin to personal
Food allergies eliminated
Micro-scale health-bots
Space solar power
Meditation/holistic services bundled with medical procedures
Spray on surgical glo
Creation of Department of alcohol, firearms, soft drinks and confectionary (mandatory health warnings on all alcohol, junk food and candy)
Russia (demographically)
Optimism about the future

Global risks*

* Low probability/high impact events that could derail any of the above trends and predictions

- Commodity price spikes
- Raw materials shortages
- Mass migration of population
- Nuclear terrorism
- Internet brownouts
- Electricity shortages
- Rapid increase in cyber crime
- Critical infrastructure attack
- Rogue stakeholder
- WMD Proliferation
- Green energy bubble
- Genetic terrorism
- Collapse of US dollar
- Global supply chain disruptio
- Terrorist attack on urban wat

gy bubble
rorism
US dollar
ly chain disruption
ack on urban water supply

▲ US/China conflict
▲ Israel/Iran conflict
▲ Bisphenol A link to cancer
▲ Geographical expansion of Russia
▲ Major earthquake in mega city

▲ Global pandemic
▲ Conflict with North Korea
▲ Political disintegration of Saudi Arabia
▲ Systemic failure of financial system
▲ Fundamentalist takeover in Pakistan

▲ Middle class revolution
▲ Collapse of China
▲ Mobile phone link to cancer
▲ Credit Default Swaps
▲ Rogue asteroid

▲ Major nano-tech accident
▲ Space weather disruption to comms
▲ Aliens visit earth
▲ Return of the Messiah
▲ People taking trend maps too seriously

Microsoft Office add-ins

An Add-in for Microsoft Office is a special software program written with the purpose of extending the capabilities of its core software. These are generally used to help in automating or simplifying your work. Microsoft Office is one of the most popular office management software out there; despite this, office still has certain limitations which make it a perfect candidate for add-ins. Much of the add-ins are provided by Microsoft itself, but there are also other third-party add-ins available online. Some of them are free while you'll have to pay for the rest.

Lookeen for Outlook

The Lookeen search tool is an add-in for Outlook 2003 and 2007 that integrates into your system and lets you search all your Outlook folders, including archived folders. You can search your mail, attachments, appointments, tasks, notes, and contacts, all at the same time as if you were searching for a file on your computer.

Search commands

Many times, because of the fact that office software has become so robust and vast these days, it's not very easy to keep track of all the different commands and features in office software. You can solve this problem by installing Search Commands on your local system. The Search Commands add-in drops in a new tab that lets users enter their own words or description to find the command they're looking for.

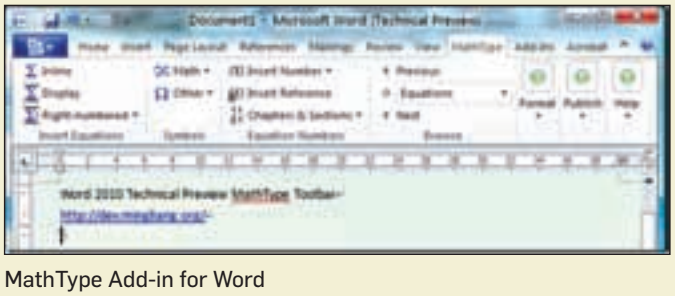
Save as or print to PDF or XPS

Without a doubt, one of the most frequently used format for sharing any type of document these days is a PDF. After making an access report, an excel spreadsheet, a word document or simply a powerpoint presentation, you may want to publish it as a pdf to share with others. Because of its flexibility and universal appeal, pdf is now an open standard. XML Paper Specification (XPS) is an XML-based specification developed by Microsoft that supports device and resolution independence. These formats are extremely powerful and as of Office 2010 you can directly save files in these formats from the 'Save As' menu but for Office 2007 Microsoft offers a free Save as PDF or XPS add-in for Microsoft 2007. Other add-ins that do the same include PDF995, CutePDFWriter and PrimoPDF.

Save as PDF or XPS

MathType add-in for Word

Sometimes it gets very difficult to type technical information in Microsoft Office. This is where MathType comes in. It is an interactive equation editor that allows you to add mathematical notations in Word. It's very flexible and capable of handling Web pages, desktop publishing tools, PowerPoint presentations and much more. It's an absolute necessity for anyone writing scientific, engineering, and mathematical papers. Microsoft also offers the Microsoft Math add-in that eases the task of creating graphs, performs calculations and solves variables in Word 2007.



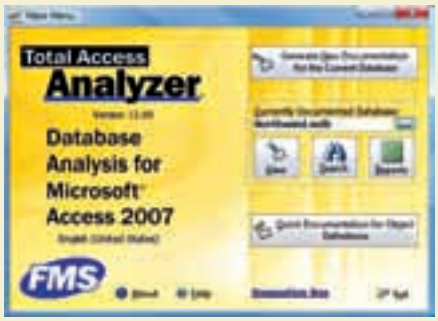
MathType Add-in for Word

Lookeen for Outlook

MZ-Tools

MZ-Tools

In case you're a developer who writes your own VBA solutions, you'll definitely be happy to use MZ-Tools. MZ Tools is a



Total Access Analyzer

customisable add-in for Office that has numerous features to reduce the time you spend on coding and makes the development workflow more productive and efficient. You can write more efficient code and also search through existing code faster. You can also apply default properties with a single click and quickly document code by inserting custom headers into modules. It also has features which automatically add in line numbers and error handlers to procedures.

Total Access Analyzer

Total Access Analyser is an add-in that analyses your Access database objects and shows you hidden problems, forgotten objects and much more which help you sort out the critical issues in your database. It can also cross-reference objects and create data flow diagrams for visual representation. You can use this add-in to document your code, find missing objects and variables and uncover scoping issues. Total Access Analyzer finds errors, suggests changes, and offers tips for improving performance. It's a paid add-in though, but developers who've used it say it's worth its cost.

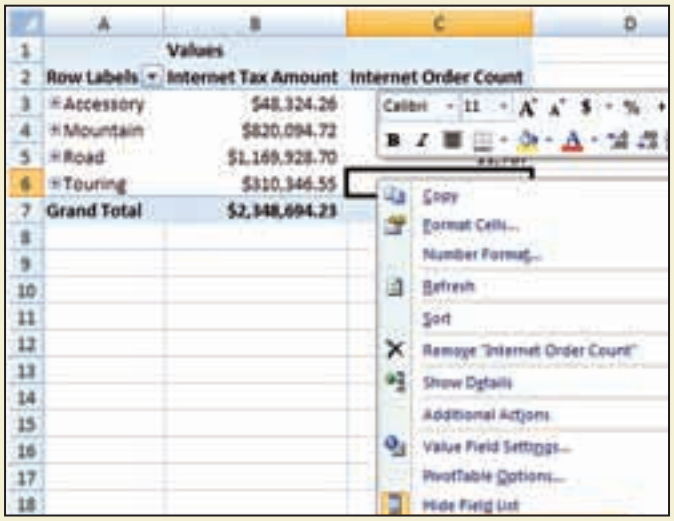
SimplyVBA Global Error Handler

SimplyVBA Global Error Handler is an add-in that checks and displays important information about every error in your VBA code. It also shows the procedure and module where the error occurred and a traceable iteration through the call stack to the error. VBA developers will definitely appreciate this add-in's effective error handling features.

Office Live

Office Live lets you open as well as save documents in the Office Live Workspace directly from Word, Excel and PowerPoint. Basically it lets you store your files on the cloud and

Office Live — Workspace and Small Business



OLAP Extension for Excel 2007

is an alternative to Google Docs. Unlike Internet Explorer, Firefox users will need an additional plug-in to access it.

Personal Folders Backup

Outlook, by default, stores all your mail, calendar items, contacts and other information in a native PST file. If this file were to go corrupt or get deleted, you would lose all of your correspondence, tasks, appointments and contact information. Hence, backing up this file is a very important part of any system maintenance routine. Personal Folders Backup is an add-in that backs up PST files at regular intervals automatically without manual intervention.

Mail Merge Toolkit

Merging documents is an age-old and very important feature, but has a few limitations. The Mail Merge Toolkit add-in extends the already existing merge capabilities in Outlook, Word and Publisher and lets you personalize the subject, attach files to messages, send HTML or RTF messages, regardless of security settings and lets you send messages from Publisher in a gif format.

Mail Merge for PowerPoint

It's hard to grasp the concept of merging a PowerPoint presentation, but there are sometimes situations where you would have to do exactly that. If you've ever come across such a situation you'll definitely appreciate PPTools Merge. This add-in merges data from any Excel file or a comma delimited file into the PowerPoint text boxes, pictures, notes and hyperlinks. You can use it to merge data, pictures, movies, sounds and external text files as well. For instance, you could use this add-in to print award certificates for members of your audience at the end of your program instead of printing and mailing them later to participants by having a default template and their names listed in a spread sheet.

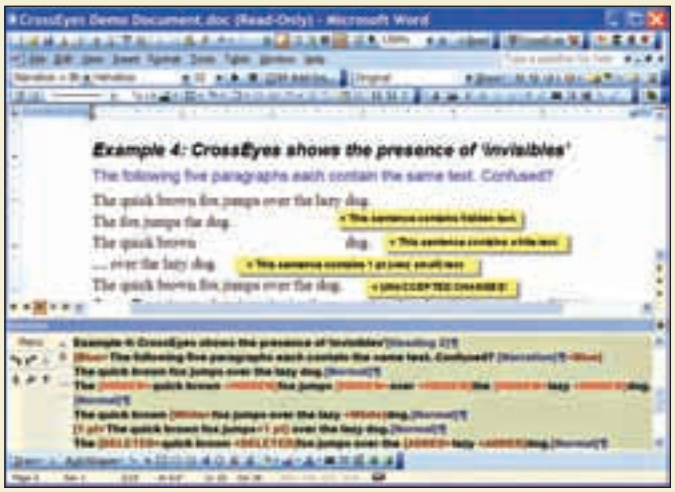
Mail Merge

Narration Timing Tweaker

PowerPoint lets you record an audio narration to add to your slideshow. However, it's a one -time record feature. If an event needs slight editing, you have to start from scratch and it's difficult to get it right. Narration Timing Tweaker has many features that allow you to fine-tune the narration portion of a slideshow.

OLAP PivotTable Extensions for Excel 2007

Excel 2007's PivotTables feature is a lot more robust than it originally seems. This add-in extends the OLAP PivotTable Extensions to the point of including Analysis Services cubes. It doesn't exactly offer additional functionality but it provides an interface to use what's already there.



CrossEyes shows hidden errors in Word docs

Access 2007 Developer Extensions and Runtime

The Access 2007 Developer Extensions and Runtime add-in can be developers' solution to market. This add-in supplies tools for packaging, deployment, licensing and distribution agreements.

Blueprint for Outlook

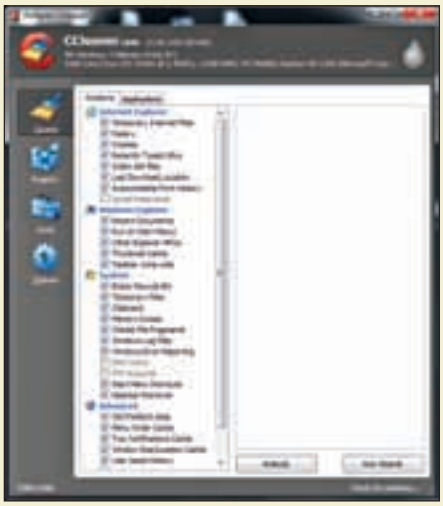
The ability to print is slightly limited in Outlook, even in the newer versions. Blueprint for Outlook adds a few printing features that Outlook should offer by default but doesn't. You can use it to print a single page or selected text and quickly automate a custom print task, or simply print an attachment directly from the file.

CrossEyes for Word

In case you're used to working with lengthy documents, you know that formatting can take up more than half of your time in finalizing the document. CrossEyes demystifies Word's formatting codes for you so that you can easily identify problems and resolve them.

Microsoft Outlook SMS

Microsoft Outlook SMS helps you send custom SMS text messages through most of the GSM mobile phones, connected to a PC which can be linked to Outlook 2003 or Outlook 2007. You can directly enter the message in an Outlook type message form and then use the add-in to send that message to a mobile phone without any third-party software or a subscription to a mobile network service if you have a phone connected to the PC.



CCleaner Window

AddInSpy

AddInSpy is an amazing add-in which can be used to develop new add-ins of your own for office and also to troubleshoot existing office add-ins. Although this is a free download offered by Microsoft through the Microsoft Developers Network (MSDN), Microsoft doesn't support it.

CCleaner

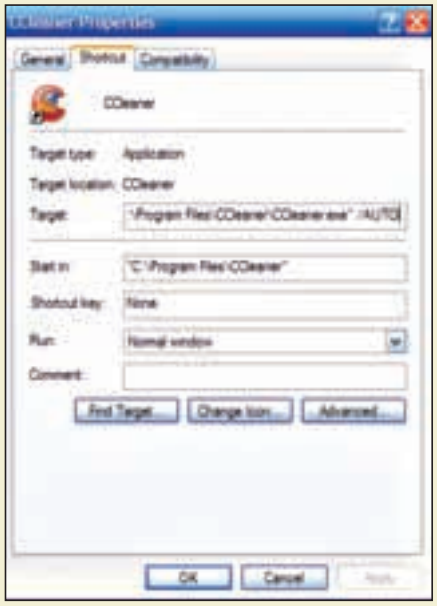
CCleaner is a freeware, which can be used for system and privacy optimization and also to clean your disk. It helps in removing unused files from your system, therefore allowing Windows to run faster and freeing up valuable disk space. It also helps in erasing traces of your online activities including your Internet usage history. CCleaner contains a fully featured registry cleaner. But the best part is that it is extremely fast and functional. It can be used to clean Internet Explorer, Firefox, Google Chrome, Opera, Safari, Recycle Bin, Recent Documents, Temporary files, Log files, Registry and even other third-party applications.

1. There are a lot of customizations and settings you would have set into your CCleaner options because of the variety of options available. Installing a newer version of CCleaner without uninstalling the old version of CCleaner actually lets you keep and import all of your previous settings and customizations from the previous version to the new version.
2. Using CCleaner you can print a list of all the programs that have been installed on your computer. This would not have been possible as easily otherwise. This is an excellent feature in CCleaner but unfortunately even regular users fail to notice it. After opening CCleaner, go to the 'Tools' menu by clicking on the Tools button on the left panel and under the 'Uninstall' entry tab you'll find a list of all the programs installed on your computer. You can save this list into a text file by clicking on the 'Save to text file' button at the bottom-right of the menu.
3. You can schedule CCleaner to close after it completes its analysis and clean up the computer instead of you having to wait for it to complete and close it manually. You can set CCleaner to stay open or close after it finishes cleaning. In CCleaner, go to 'Options' and click on the 'Advanced' tab and then select or enable 'Close program after cleaning'.
4. In certain situations, cleaning your system might actually cause your system to act up because certain important files might have been removed as well. The automatic Backup and Restore of the registry before cleaning Registry with CCleaner is possible to counter this problem. CCleaner cleans the registry by scanning for issues; you can back up the registry before fixing the selected issues. And later, you can restore that backup registry file by

'Save to text file..,' lets you save a list of all installed software on your computer

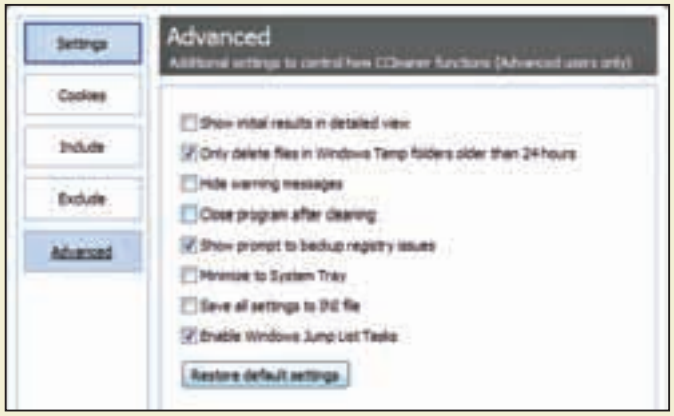
right-clicking on it and selecting 'Merge'.

5. You can make use of the Portable CCleaner version if you want to avoid the annoying banner ad toolbars which come with the installer version of CCleaner. Also consider the fact that the portable version can be taken on a USB Drive and used on any computer in which it is plugged into without it being installed. Despite this, the advantage of the installed version is that you can directly right click on the Recycle Bin icon on your desktop and analyse or clean your system from the drop-down menu.



Add /AUTO to the target path

6. You can also set CCleaner to automatically run every time your computer starts. This lets you set CCleaner to run and clean without having to require any intervention from your side. You can also set the clean-up to run at a specified time using the Scheduled tasks option. You can do this by creating a shortcut for it by using CCleaner.exe/Auto and dragging it into the the startup folder. The simpler way of doing it would be to go to the 'Options' menu in CCleaner and select 'Settings' and then check the 'Run CCleaner whenever computer starts' option. You can even set your computer to shut down after cleaning with CCleaner is complete, by adding the parameters after the target path CCleaner.exe/AUTO/SHUTDOWN

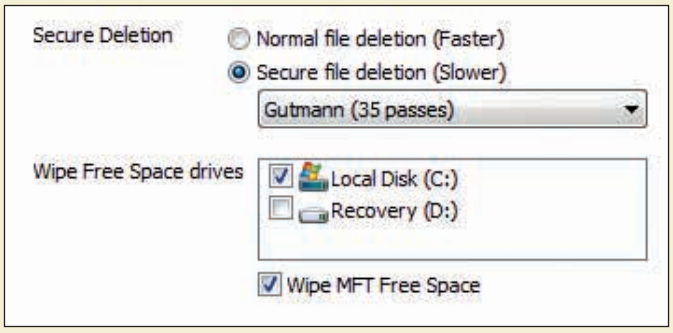


Different Advanced options in CCleaner

7. The AUTO parameter lets you run CCleaner to clean up pre-defined areas silently and automatically. The SHUTDOWN parameter commands the computer to shut down after the clean-up process is complete. Suppose you want to clean your system after startup, you can drag the shortcut (with AUTO parameter ONLY) to 'Startup' in Windows Start Menu. If you want to do the job before system shutting down, just double-click the shortcut (with AUTO and SHUTDOWN parameter).
8. You can do much more than simply deleting junk with CCleaner. You can wipe traces and history of files from your computer as well. First, switch to 'Settings' under the 'Options' tab, then select 'Secure file deletion' and the erase method, the larger number the better, but higher value will consume plenty of time. For example, 'Gutmann (35 passes)' means 35 times of data rewriting. So the data cannot be recovered are retrieved using any undelete programs. Another thing CCleaner can be used for is to specify files and folders to wipe out, in addition to pre-defined systems or application areas after analysis is done. You can also include custom paths to be wiped out. You can check all the items that you want to clear in the 'Custom Files and Folders' and 'Wipe Free Space' boxes.

Registry Cleaner in CCleaner

9. Many of you may like to manage system startup items with Microsoft Windows MSConfig utility. However, sometimes even if you've uninstalled a software application, the program's startup item in MSConfig still exists. CCleaner can completely delete these used MSConfig startup items. Just switch to 'Startup' in 'Tools' tab, select the specific startup programs, and then click 'Delete'.



Gutmann (35 passes)

worldview

OUR PICK OF THE BEST TECH ARTICLES FROM AROUND THE GLOBE

(MUST READS)

MEDICAL FUTURE NOW

University of British Columbia research teams have come out with a Phone Oximeter device that hooks up to a smartphone and monitors a patients vitals like blood, oxygen level, heart and respiratory rates etc. The readings are transmitted to the hospital

http://engt.co/digit6206

IN CONVERSATION WITH DR. STEPHEN HAWKING

Even when suffering from the deadly disease A.L.S, Dr. Stephen Hawking went on to produce some of the most important cosmological findings of his time. In a rare interview, you get a glimpse of what the great mind thinks about - from the L.H.C to Aliens.

http://nyti.ms/digit6112

HOW MUCH FUN CAN YOU HAVE IN 5MB?

Lots, according to these guys. The article presents you with 21 fantastic games under 5MB that can give you barrels of fun for hours. Discovering this almost made us miss our deadlines.

http://bit.ly/digit6201

13 TECHNOLOGIES THAT NEED AN IMMEDIATE UPGRADE

This article takes a step back to observe some technologies in desperate need for reform, replacement or upgrade. We have everything from internal combustion engines to laptop cooling. Read more:

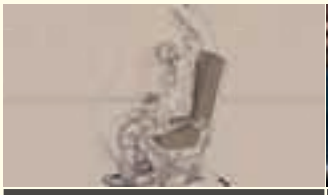
http://gizmo.do/digit6200

(PopSci Corner)

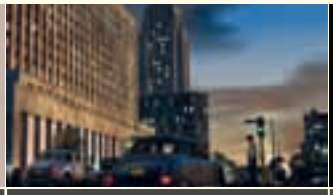
POPULAR SCIENCE'S INVENTION AWARDS SHOWCASE SOME FASCINATING INVENTIONS

Check out some of the most remarkable things to come out of people's garages. Some are designed to treat the sick or save the planet. Others are simply fun to play with. But no matter what the purpose, the brilliance is inspiring.

http://bit.ly/digit6207



Human limits of future travel
The vehicles we will invent will be able to achieve fantastic speeds and manoeuvrability but can our fragile bodies take it? This article explores the very limits of what the human body can endure and how engineering can tackle super-speed.
http://bit.ly/digit6203



The real L.A Noire
The upcoming game's carefully constructed landscape is based on real photographs taken by Robert Spence, who photographed Los Angeles while leaning out of a biplane with a 46-pound camera in the 1920s. A must see gallery.
http://bit.ly/digit6204

Ignored elements to the rescue
Lithium, Cobalt, Tellurium, Neodymium and 25 other rare elements have now come under the spotlight as engines that could make or break the clean-energy revolution. Learn some fascinating facts about these often ignored elements.
http://bit.ly/digit6205

SHORTS

WHERE IS WIKIPEDIA EDITED?

Ever wondered where in the world most of the Wikipedia editing is done. This simple visualization breaks down the geographical areas from where most of the editing is contributed to the website. See it here
http://rww.to/l5mv79

MICROSOFT INVESTMENTS INFOGRAPH

A cool infographic depicting Microsoft's acquisitions and investments over the years. It's done in a subway map style detailing the company's expenditure from as early as 1989 to the very recent 2011 Skype buyout. See it here
http://bit.ly/kE2W9x

NIGHTSHIRT MONITORS SLEEP PATTERNS

A new startup company by the name of Nyx Devices has developed a special kind of night wear. It has fabric electronics embedded into it which monitor your breathing patterns. A small chip then processes this data to determine sleep phase. Read more on:
http://bit.ly/iniQri

SOCIAL LOCATION APPS INFOGRAPH

Want to get the inside scoop behind location based apps? Then this infograph might help clear your doubts. It points out an interesting lag between what people are saying on the Internet and how they perceive such services. View it here
http://bit.ly/kZTlLM

Why Thunderbolt is Dead in the Water

- By Sebastian Anthony

Intel kowtowed to Apple and created a new socket that only a tiny fraction of Mac OS X users will actually use

In 2009, Intel demonstrated the first ever optical interconnect for computer peripherals: Light Peak. It promised speeds of 10Gbps symmetrically — 20Gbps in total — over a single 30-meter-long fiber optic cable. Light Peak was low-power, and it used clever multiplexing to run multiple protocols over a single 62.5-micron fiber. Better yet, Light Peak could even piggyback on top of USB cables, providing socket backwards compatibility — and to top it off, Intel said that 10Gbps was just the beginning: 100Gbps would be possible in the next decade! Light Peak, in short, delivered a delicious hint of what a fast, flexible, and future-proof interconnect could do. Then Apple came along and ruined everything.

To be fair, there was never really any chance of Light Peak, in its original form, being built into Apple's latest products. Optical switching and interconnects are only found in enterprise-level routers for a reason: playing with light is expensive. Light Peak was summarily binned and Thunderbolt was born. Thunderbolt is a copper wire version of Light Peak — it uses much of the same technology, but it does away with the optical/electrical interface. Apple wanted to include a next-generation technology to rival or even beat USB 3.0, and a cut-down version of Light Peak was the only real option. In the same way that Apple championed FireWire for the replacement of parallel SCSI, Thunderbolt is meant as the next big thing in video and audio peripheral interfaces.

Just like FireWire, though, Thunderbolt is off to a slow start. Even in its non-optical, crippled copper state, Thunderbolt is prohibitively expensive. USB 3.0 controllers cost just a few dollars, while Thunderbolt hardware, we've been told, cost no less than $90. Matrox's new line of Thunderbolt-enabled products are $200-300 more than the eSATA or USB equivalent! As a result — and FireWire had the same problem — we will only see Thunderbolt-enabled devices where the price of the controller can be transparently absorbed by a high list price: video cameras, high-end audio gear, and so on.

Then there's the matter of whether Thunderbolt is actually necessary, or just a sexy-sounding marketing slogan that can be slathered over the Apple website — it sounds pretty awesome when you say it aloud, too. When Apple extolled the virtues of FireWire, it filled a gap — USB just wasn't fast enough for professional applications — but the landscape is entirely different today. Over 6 billion USB devices have been sold to date, and support for the standard is as close to ubiquitous as we'll ever get. USB 3.0 is already in the market — HP, the world's largest PC manufacturer, opted for USB over Thunderbolt — and it's backwards compatible with every USB device ever made. Most importantly, though, USB 3.0 is more than fast enough for current and near-future applications. There are some latency issues that make Thunderbolt more attractive for professional video and audio work, but as soon as Intel and AMD build USB 3.0 support into the chipset, the difference between the technologies will be negligible.

The final piece of delicious irony, though, is that Light Peak was originally designed to accommodate both optical fiber and copper wires in the same cable. Light Peak, in its first incarnation, was socket compatible with USB, providing a perfect upgrade path from USB 2.0, to 3, and eventually to an optical Light Peak 10Gbps interconnect. You could buy an external USB 3 hard drive, and plug it into a Light Peak socket — and you could plug an external monitor into your other Light Peak socket without issues. Instead of ushering in a beautiful, cross-platform, next-generation interface that could revolutionize the pain of peripherals, Intel kowtowed to Apple and created a new socket that only a tiny fraction of Mac OS X users will actually use. Instead of sticking to its guns with the Light Peak fiber-and-wire dream combo and slowly weaning the world off USB, we get a toothless and useless Thunderbolt.

But hey, Intel won't have given up its optical interconnect entirely -- and with the recent invention of cheap and fast graphene optical modulators, who knows what's around the corner?

I SWEAR OFFICER, THERE'S NO BLOOD IN MY ALCOHOL STREAM!

A collection of interesting studies which exonerate booze in favour of high testosterone levels for driving accidents. Hick!
http://bit.ly/digit6211

ARM NOT AFRAID OF INTEL

The latest battle in the mobile space is going to be one based on architectures. While intel talked of x86 phones, ARM mobile strategist James Bruce claims that Intel has miles to go in the mobile space. Know more:w
http://bit.ly/digit6212

GADGET GYAN YOU OUGHT TO KNOW

Technology knowledge is a funny thing. Some just pick up and discover things along the way while some find it a little difficult. In this article, David Pogue from the New York Times tells us about some of the most basic things in tech that'll make you go, "I didn't know that!".
http://nyti.ms/digit6213

GRAPHENE 101

You'll find Graphene being mentioned as a wonder material several times in this issue, especially in the future tech section. If you're still clueless about what exactly it is and what all the fuss is about, be sure to check out this wonderful explanatory article from physorg:
http://bit.ly/digit6214

Consider an SSD as a Secondary Drive

- By Sal Cangeloso

Most high performance rig-builders use an SSD for installing the OS. Here's a twist to that concept.

For some time now technology enthusiasts have understood the value of solid-state drives. Their excellent speed has largely outweighed their limited capacity and high per-gigabyte pricing, making them a easy choice for many. That is to say that SSDs have been an easy choice for use as a primary drive—where your operating system and most of your programs live. This, after all, is how you can get the most impact out of one of these newfangled storage devices.

The problem with this is that you'll want to get a high quality drive (and new one at that), but how do you reap the benefits of an SSD when using a smaller or older model? Your main drive won't be the best choice as space will be cramped and you might be missing important features, like TRIM support. You might want to consider using your SSD as a secondary drive.

The key here is understanding that the benefits will not be as big as moving your primary hard drive to an SSD... but that's both a pain and an expensive proposition. Adding in a secondary drive is a 10 minute job and reasonably sized (say, 32GB) SSDs start at under $100. If you are into building computers, you might even have one lying around. Most early consumer SSDs didn't perform all that well and so this is an ideal use for them.

If your OS won't be on the drive, then what are some good uses for that SSD? Basically any instance in which you could benefit from quick storage will work, but some of the best I've found include:

Adobe Photoshop scratch disk (this shouldn't be your boot drive anyway)

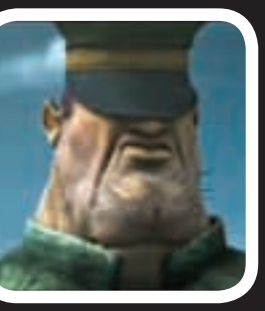
- Adobe Lightroom catalog
- Storage of virtual machines
- Holding place to dump images and videos from a DSLR or other imaging device
- For installation of applications you'd like to load quickly
- Windows page file
- Linux /swap

You'll have to find which ideas work best for you, and individual needs may vary greatly based on the applications you use and how they work with your computers. The options above work great for me—an SSD speeds up the opening and closing of my virtual machines and Lightroom catalog/image previews. I don't have a lot of space on the SSD but it works well when called upon. (Note that those last two choices above could impact the life of the drive, but if you have it and it's not of much value to you, why not take full advantage of it?)

Are these applications, let's call them intermediate operations, alone worth the purchase of an SSD? Perhaps not, but with today's solid-state drives outshining older models it's clear that using a non-primary drive SSD can be a great way to shave seconds off certain operations.

Whether you want to quickly open huge PSD files or open up a virtual machine in the blink of an eye, a secondary SSD is a quick fix that can make your computer feel a lot faster for very targeted operations. It'll add some complexity to your backup scheme and you'll have to keep an eye on the available storage, but it's an upgrade worth considering and a step towards much faster storage.

(worldview)



This is an award winning short film by Polish director Tomek Baginski. It's a satirical take on how low the value of human life has fallen. Dark and thought provoking Fallen Art mocks at the nature of our existence and how far a few deranged people can go to satiate their insanity. A must watch.
http://bit.ly/15tt7f

DO YOU LIKE THE WORLD VIEW SECTION?

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

Send in your feedback to
editor@thinkdigit.com

(QR Code)

To find all the links featured in this world view section simply point your smart phone to this QR Code or just enter this link in your browser:

http://bit.ly/Digit10yrs2

(PRODUCT LAUNCHES)

ALIENWARE M18X

The specs on this mean machine are enough to blow your mind away: Intel Core i7 2920XM Overclocked Turbo Boost to 4.0GHz (8MB Cache) 32GB Dual Channel DDR3 at 1333MHz, Dual 1.5GB GTX 460M in Sli or Dual 2GB HD 6970M in CrossFireX, 18.4 inch full HD display. Price? $1999. What did you expect?

TOUCHSMART 610

The all-in-one has now started shipping with new Core i5 and i7 Sandybridge processors. The 1080p display on the device can slide down to a near-flat 60 degree angle. 16GB of RAM, 2TB of storage, and 2GB of NVIDIA / ATI Graphics memory round off the other features. Starting at $1,100

WIRELESS RING MOUSE

Genius has never really had products featured here, but this wireless thumb cursor controlled Ring Mouse seems quite nifty. It has a sensitivity of a 1000dpi and can last a month between recharges. It can work up to a distance of 10 meters. The device retails for approximately US$69.99

CROSSWORD

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

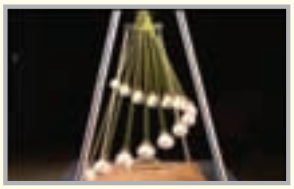
Believe it or not there are 20 Tech related words in the jumble. They may be diagonal, vertical, horizontal, and even backwards. How many can you spot?

ABSOLUTE TIMEPASS

Top 3 YouTube Picks

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

http://bit.ly/digit6202
Duration: 1 min 32 sec
Forgive us, for there is nothing "Tech" about this video, but we just couldn't resist sharing it. It's cats being gansta for god's sake!



http://bit.ly/digit6208
Duration: 1 min 46 sec
This video should be called pendulum pron and once you see it you'll know why. Physics can be so beautiful.

http://bit.ly/lwY6h6
Duration: 1 min 12 sec
Did you see the new white iPhone commercial? If not then head over to the link. Beware this is a hilarious spoof.

CRACK THE CODE

Find the droid that is fluent in over six million forms of communication. Digitize the answer, then add to it the page number from which you came and put it in the url: www.thinkdigit.com/ctclII/<result>.html

Hint: A is 1. B is 2. Feel free to google all the clues.

Future tech

Here's the Unwind dose of future tech we'd love to see soon, very soon. We've shortlisted the top six technology inventions we can't wait to get our hands on. Here they are, in no particular order.

Quantum Teleporter

Teleporting yourself to the middle of no where might not be the brightest idea, but just imagine the potential this technology holds! It'll be just awesome to travel via a teleporter. No more commuting hours and chaos at busy signals. Just press a button and you're there.

Lightsabers

No future tech list is complete without including the Lightsaber! That's what we're talking about. This weapon of the future will be a blend of a laser and a sword, slicing through the hardest of objects. Want to get your very own saber? Then go here http://amzn.to/ljUgyJ

Holographic displays

This is the future of communication. We won't be speaking on our phones or emailing each other instead we'll be using holographic interference patterns to talk. This reminds us of the 90's movie Total Recall where this technology was exploited to its fullest.

Flying saucer

To truly envision ourselves in the future flying saucers are the way to go! We just have to let go of the current boring shapes of our flying machines and get these in. That's travelling in style in the future. Brit drone company Aesir thinks it's very much possible. Killer!

Jetpack

If flying saucers are the way to travel publically then jetpacks are your personal vehicle for a trip to your favourite joint. Although we've seen quite a few prototypes of these, a fully operational and commercial version is yet to hit the stores. Someone please make one already!

Military exoskeleton

With it's ability to punch a hole through walls this would transform you into a superhuman. There is a combat variant under development for the US army. Watch out terrorist groups, even walls can't stop them now.

digit DIARY

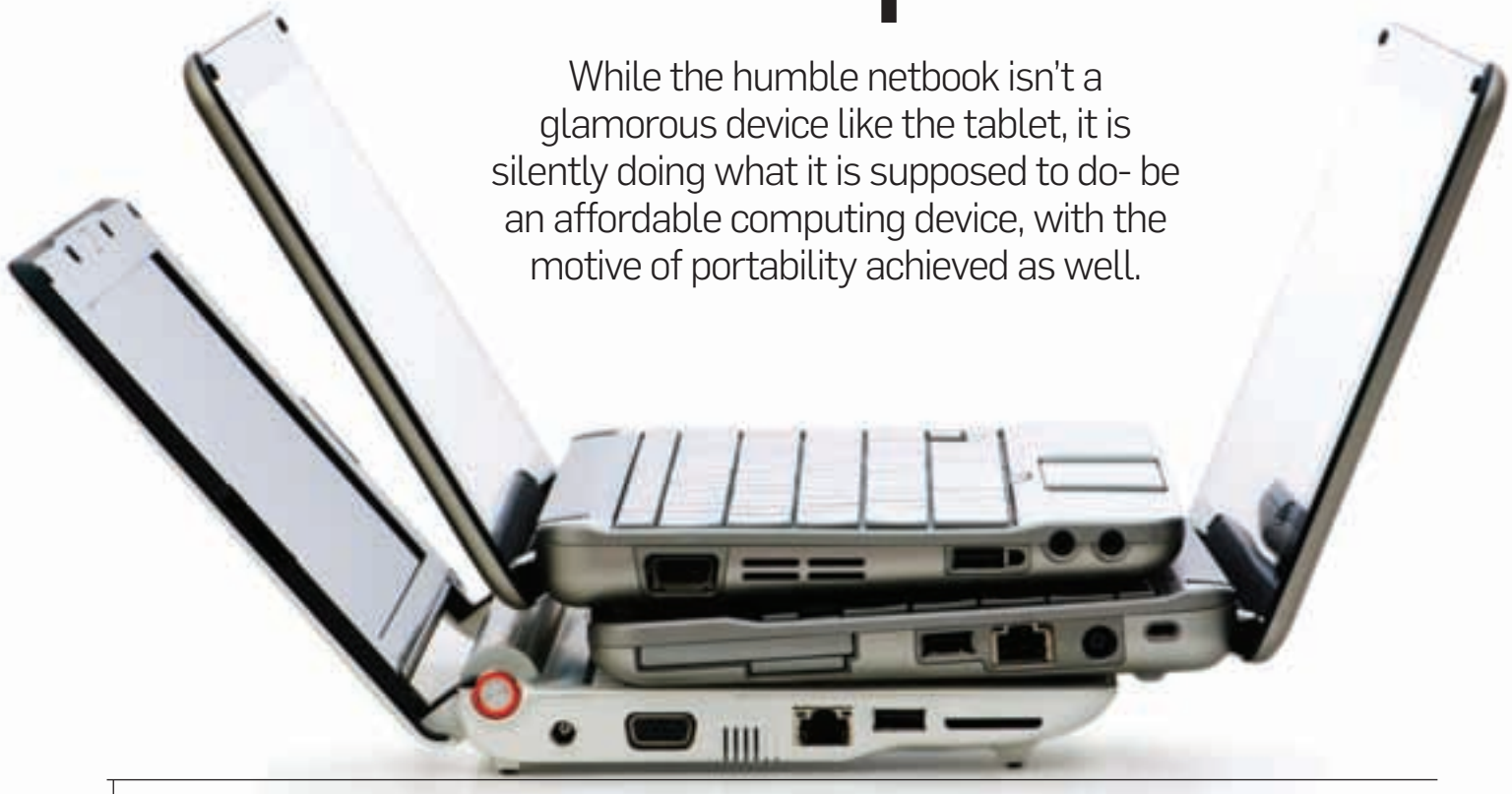
We can't even begin to tell you about this month, especially about the hectic shifts all of us have been keeping to ensure that the issue closes on time. So let's not get into that, but then this space would go empty as pretty much all we did this month was work and more work. Good news in the midst of chaos is that a Subway outlet just got opened below our office, so the luxury of breaks we allowed ourselves were spent there. In other announcements, Jayesh and Infancia have joined our team, big shouts to them – hope you guys blend in here quickly. You can imagine the magnitude of work we had this month by simply knowing the fact that people came from America to help close the issue. Yeah folks, Vijay is back for his vacation which coincided with this issue, so we roped him in and he was more than happy to help. Robert has struck a century as he completes his hundredth issue this month. He waves his bat to the crowd in acknowledgement!

E outsells paper
Amazon reports that they are selling 105 e-books for every 100 paper books

Tablets galore
Intel: To unveil more than 10 Tablets with partners at Computex - May 2011

Survivors or superceded?

While the humble netbook isn't a glamorous device like the tablet, it is silently doing what it is supposed to do- be an affordable computing device, with the motive of portability achieved as well.



By Vishal Mathur & Vinod Yalburgi
vishal.mathur@thinkdigit.com
vinod.yalburgi@thinkdigit.com

Netbooks have survived the onslaught of compact, frugal notebooks, but a bigger threat looms tablets. For many people, netbooks were a niche that emerged to create a category of user and now that other potential replacements are around the corner, should be allowed to die a gradual death. Netbook manufacturers do not think so, if the models we've received are any indication.

Our take is that netbooks will eventually evolve into something else, as improvements in technology bring more power to a smaller form factor.

Looks

With all the netbooks lined up together, it isn't very hard to see that the Asus Eee PC 1008P is the best looking of the lot. Also known as the Eee PC Seashell, this one is the designer Karim Rashid special edition. The machine we received for review was glossy hot pink and extremely shiny. The "Digi-wave" design makes the lid stand out, in the midst of otherwise similar looking ones. All ports are concealed.

The Eee PC 1015PW comes with a wave imprint design on the lid. The matte finish makes this less shiny, and makes the netbook feel chunkier than it usually is. Is available in three colours- Purple, Golden and what Asus calls the "Skin" colour.

The HP Mini and the Samsung NF210 have the understated elegance about them, and multiple colour options to select from. The NF210 also has an elevated curved edge on either side of the keypad. However, we do not like the Acer Aspire One for the fact that it has a very glossy finish. You will be carrying around a fingerprint, dust and scratch magnet. The Champion WBook 10160 is the fattest of the entire bunch, and needless to say, the heaviest too.

Features, build and usability

The 10.1-inch screen limitation is visible across the devices. None of the displays offer the best multimedia viewing experience, and the primary criteria here is to ensure that the eye strain is the least while working on these smallish screens. The displays on the Asus Eee PC 1008P Karim Rashid edition and the Asus Eee PC 1015P are visibly sharper than the others. However, the colour depth is lacking, no matter what the brightness level. The Samsung NF210 offers disappointing viewing on low brightness levels, but does very well once the brightness level is beyond 50percent. The HP Mini's display offers excellent viewing even on brightness levels as low

Samsung NF210

as 30percent, which is crucial if you want to increase battery life on the move. Surprisingly, the Champion WBook's screen is possibly the best of the lot. While the top end brightness level may not match those of the Acer Aspire One or the Asus Eee PC 1018P, the WBook's colours are much softer and the display causes least eye strain even after long hours of use.

Netbooks have a size limitation in terms of width, and the keyboard does tend to be smaller as a result, at least when compared to the keyboard on a full-fledged laptop. Immediately noticeable is the lack of a dedicated number pad. Secondly, the space between the keys is reduced. The most popular keyboard style doing rounds is the chiclet-styled one. The Samsung NF210 a well spaced out keyboard, which is the closest you will feel to the keyboard of a full-fledged laptop. The Asus Eee PC netbooks 1008P (Karim Rashid edition), the 1018P and the 1015PW have the most comfortable keyboards, with a nice amount of travel and a solid feel. The HP Mini's keyboard however is extremely disappointing. It has a distinctly plasticy feel, the key response isn't very consistent and can be extremely noisy if typing fast. Some don't have the chiclet-styled keyboard, though. Acer Aspire One's Island style keyboard feels extremely comfortable to use, and despite the lack of space between the keys, the fingers don't feel cramped, owing to the really large keys. The Champion WBook has a completely different keyboard style. Neither Chiclet nor Island, this keyboard is the one we saw on the previous generation of notebooks. The keys are much chunkier, stand at a slightly higher elevation than the Chiclet styled one and offer a lot more travel too. While the key press response is consistent, it takes some time to get used to the extra key travel.

Asus Eee PC 1008P Karim Rashid Edition

HOW WE TESTED

To avoid fragmenting the netbooks into unnecessary categories, we have not divided them into any categories. Simply because the price bracket all of these fall in is relatively narrow. Secondly, the basic specifications are very similar across the models we have tested.

Readying the machine

To ensure a level testing platform across all machines, there are certain steps that we followed before the benchmarking began. First, all third party applications and software were uninstalled. The motive behind this is to ensure that no services/tasks are not running in the background and eating up precious system resources. The second reason is that while particular software may be installed in one netbook, it isn't necessary that another netbook may have that on board. Testing without cleaning up the system would have created an uneven platform for comparing. Once the applications have been uninstalled, the registry is cleaned using the CCleaner software. This to ensure any elements/broken entries etc. that an uninstalled app may have left behind is cleaned up.

After this, the power settings were set at a standard level across all machines. Power plan was set to "High Performance", and automatic stand-by and hibernate modes were disabled, and select the battery to shutdown when it drains out. Processor clock speeds were set to 100%.

The hard drive was defragmented as well, to ensure that the files are placed uniformly across the drives, in all netbooks. Disk fragmentation seriously compromises system performance. The virtual memory across netbooks is set to 2048MB, manually.

Battery life is an extremely critical element of the overall performance offered by a netbook. To ensure the most accurate test results, the battery in all netbooks is fully charged (exact 100%, nothing less), before the battery test is started.

Testing the performance

The performance of the netbooks is tested in two separate ways- straightforward benchmarking and real-world tests. For Benchmarking, the PC Mark 2005 is used to derive scores for the CPU, memory and the hard drive. Straightforward scores offered here tend to give an idea of which machine has more raw power. 3D Mark 06 is used in laptops to test the graphics capabilities. Since netbooks do not usually come with powerful graphics solutions, these scores tend to be very low- indicating very basic (too harsh to call it mediocre?) performance.

Once the benchmarks are done with, the real world tests come into play. Build quality and ergonomics are rated here, on a scale of 10. HD video playback, speaker volume and clarity, file transfer between partitions and the wireless connectivity speeds are tested.

Brand	Acer	ASUS	ASUS	ASUS	Champion	HP	Samsung
Model	Aspire One 522	Eee PC 1015PW	Eee PC 1008P	Eee PC 1018P	Wbook 10160	Mini 110	NF210
Price (₹)	18203	23600	26999	20100	16500	20980	22990
Performance (out of 50)	28.82	28.26	23.63	28.00	18.47	25.49	27.45
Features (out of 30)	18.27	18.68	18.26	16.64	14.71	17.76	15.55
Design (out of 20)	13.50	13.50	15.00	14.00	13.00	14.50	13.50
Total (out of 100)	61	60	57	59	46	58	57
Features							
Component Specifications							
Processor Model No	AMD C-50 Dual-core	Intel Atom N550	Intel Atom N450	Intel Atom N550	Intel Atom N270	Intel Atom N570	Intel Atom N455
Processor Speed (MHz)	1000	1500	1660	1500	1600	1660	1500
Memory (GB)	2048	2048	2048	2048	1024	2048	1024
RAM Type	DDR3	DDR3	DDR2 SDRAM	DDR3	DDR2	DDR3	DDR3
Memory Speed (MHz)	667	667	667	667	667	667	667
Chipset	AMD SB800	Intel NM10 Express	Intel NM10 Express	Intel NM10 Express	Intel 945GC	Intel NM10 Express	Intel NM10 Express
Graphics Solution	AMD Radeon HD	Intel GMA 3150	Intel GMA 3150	Intel GMA 3150	Intel GMA 950	Intel GMA3150	Intel GMA3150
Dedicated Video Memory (Y / N)	Y	N	N	N	N	N	N
Dedicated Video Memory Size (in MB)	256	N/A	N/A	N/A	N/A	N/A	N/A
Audio chipset	Conexant High Definition Audio	Realtek High Definition Audio	Realtek High Definition Audio	Realtek High Definition Audio	Realtek High Definition Audio	IDT High Definition Audio	Realtek High Definition Audio
Drive type / capacity (GB)	HDD / 320	HDD / 320	HDD / 320	HDD / 320	HDD / 160	HDD / 320	HDD / 250
Bundled OS	Windows 7 Starter	Windows 7 Starter	Windows 7 Home	Windows 7 Starter	Windows 7 Starter	Windows 7 Starter	Windows 7 Starter
Battery Capacity	4400mAh	6000mAh	2900mAh	4400mAh	2200mAh	4910mAh	6600mAh
Characteristics							
Screen Size (Inches)	10.1	10.1	10.1	10.1	10.1	10.1	10.1
Screen Resolution (Pixels)	1280 x 720	1024 x 600 (WSVGA)	1024 x 600 (WSVGA)	1024 x 600 (WSVGA)	1024 x 600 (WSVGA)	1024 x 600 (WSVGA)	1024 x 600 (WSVGA)
Weight (kg)	1.3	1.09	1.09	1.25	1.2	1.2	1.3
No of Ports (USB/Firewire)	3/None	3/None	2/None	3/None	3/None	3/None	3/None
USB 3.0 (Y/N)	N	N	N	Y	N	N	N
Connectivity (LAN / Bluetooth / Wi-Fi)	Y/Y/Y	Y/Y/Y	Y/Y/Y	Y/Y/Y	Y/Y/Y	Y/Y/Y	Y/Y/Y
E-Sata (Y/N)	N	N	N	N	N	N	N
Display output (VGA/DVI/HDMI/Display Port)	Y/N/Y/N	Y/N/N/N	Y/N/N/N	Y/N/N/N	Y/N/N/N	Y/N/N/N	Y/N/N/N
Memory Card Reader (Y/N)	Y	Y	Y	Y	Y	Y	Y
Type of Memory Cards Supported	SD,MMC,MS,MS Pro,XD	MMC, SD, SDHC	MMC, SD, SDHC	MMC, SD, SDHC	SD,MS,MMC,MS Pro	SD,MMC,MS,MS Pro	SD, SDHC, SDXC, MMC
Inbuilt Webcam (Y/N)	Y	Y	Y	Y	Y	Y	Y
Webcamera resolution (in megapixels)	0.3	0.3	1.3	0.3	0.3	0.3	0.3
Performance (Synthetic Scores)							
PC Mark 2005							
CPU Score	1797	1442	1789	1804	1375	1985	1792
Memory Score	1508	2537	2306	2328	1790	2446	1866
HDD	4288	5051	5060	4848	4060	5116	4784
3D Mark 2006							
CPU Score	652	738	488	752	467	826	747
Overall Score	167	147	156	152	139	159	148
Maxxon Cinebench R11.5 (CPU Score)	0.4	0.47	0.26	0.48	0.24	0.42	0.48
Battery Life (hrs:mins:sec)	3hrs 24mins	2hrs 42mins	1hrs 45mins	2hrs 37mins	1hr 13mins	1hr 38mins	2hrs 35mins
Performance (Real World Tests)							
Build Quality (So 10)	7	6.5	7.5	7	6	7.5	7.5
Ergonomics (So 10)	6.5	7	7.5	7	7	7	6
Audio Test Speakers (So 10)							
Volume	6.5	5	6	5.5	5	6.5	5.5
Clarity	6.5	6	7	6.5	5.5	7	6.5
HD video playback test (So 10)	4	5	6.5	4	4	7.5	6
WinRAR 3.9 (Compression / Decompression)	360	476	382	479	357	488	463
1GB partition to partition file copy (secs)	38	35	39	37	61	48	44
100 MB File Conversion (VOB-to-DivX) (secs)	314	290	284	282	330	264	291
Passmark wirelessmon signal strength (in %)	40	21	43	42	41	46	53
Passmark wirelessmon bandwidth (in Mbps)	54	99	54	99	54	99	99
Passmark Wi-Fi performance test (in Mbps)	15.5	13.88	12.68	18.68	9.86	21.8	20.5

CRACK THE CODE

Find a number's factorial that is closest to this page number. Subtract the answer to the first clue from this factorial-result. Add 1, divide the result by 4 gives you the page to the next clue. Answer is the page number of your next clue. Go!
Hint: factorials: Factorial of 1 is 1, Factorial of 2 is 2, Factorial of 3 is 6...

Despite the small form factor, netbook manufacturers have realized the importance of the USB ports. Which is why, most netbooks have been packed in with three, except the designer netbook among them all! The Asus 1008P Karim Rashid edition, in the midst of all the style and colour attempts to get away with only two.

Performance

Some netbooks now have dual core processors, thanks to Intel's latest generation Atom N550 processor. What we witness in the shootout is that there are a variety of processors available in the netbooks. Intel Atom N270, N450, N455, N550 and N570 are spread across the models. Out of all these offerings from Intel, the N550 and the N570 Atom processors are the dual core type.

The Asus Eee PC 1018P is powered by Intel's Atom N550, clocking at 1.5 GHz with 2 GB DDR3 RAM @ 667 MHz. The Champion WBook got the lowest score 1375. This is because of the Atom N270 processor and 1GB DDR2 RAM @667MHz. AMD's only flag bearer, the Acer Aspire One clocked an impressive score of 1797 which puts it in a very strong midfield position, despite having a much slower clock speed (1 GHz), than the rivals.

Graphics performance has never been the strong point o for netbooks. And we can see why, since none except one, has a dedicated graphics solution on offer. The Acer Aspire One 522 comes with the ATI Radeon HD6250 graphics, with 256 MB dedicated video RAM.

Asus Eee PC 1015PW

And it isn't surprising that this machine tops the score sheet of the 3D Mark 06 scores. The score of 167 puts it in pole position, but what is a surprise is that despite this, it isn't beating its rivals hands down. The HP Mini with a score of 159 and the Asus Karim Rashid netbook with a score of 156 run it close. However, if you want a netbook that you can connect to the flat panel television via HDMI, then the Acer Aspire One is the only option among all these.

Battery Life

Since netbooks put most of their eggs in the better battery life basket, it will be interesting to see how they fare here. Not only against each other, but how much advantage do they really have over the full-fledged notebooks. The results were pretty disappointing.

The Acer Aspire One, the only AMD powered machine here, wins this battle hands down. The tested battery life of 3 hours and 24 minutes is leaps and bounds ahead of all competitors, with the 4400mAh battery. The second placed Asus 1015PW runs out of juice in 2 hours 42 minutes, despite having a significantly bigger 6000mAh battery. The Champion WBook has the worst battery life of the lot 1 hour and 13 minutes, and not surprising since it has the smallest battery among all the rivals 2,200 mAh.

The battery test does throw up some damning statistics. The netbooks may claim that the tiny size, lesser power consumption and the smaller display helps them offer better battery life than the notebooks. However, the truth is that most laptops offer this much battery life, and then some. Not that big a selling point eh?

The Winners

It was a pretty close run thing, at the end of it all. The scores were neck and neck, and on paper, it looked like no single netbook has a clear advantage over the rivals. In terms of performance, the Acer Aspire One 522 finished ahead of the Asus Eee PC 1015PW, but just about. The better battery life offered by the Aspire One helped it take the top step. When we looks at features individually, the Asus 1015PW was the clear winner, thanks to the combination of a very high capacity battery (at least on paper) and a weight of just above 1kg.

HP Mini 210

Acer Aspire One 522

When it came to rating the good looks, it really wasn't a surprise that the Asus Eee PC 1008P Karim Rashid edition was the winner, with the HP Mini in second place.

However, we believe that the Acer Aspire One 522 offers the best performance and best value for money, while the HP Mini 110 is definitely worth a consider, if you are out to buy a netbook.

Better colour e-paper
Ricoh has announced colour electronic paper, which it claims is 2.5 times brighter than that of its competitors. It uses lamination techniques layering three strips of electrochromic material between two substrates.

Only 1.6 million?
Gartner states that Microsoft has sold 1.6 million units of the new Windows Phone 7 based smartphones, from among 3.6 million smartphones running the Windows operating system.

Apple iPad 2

The king of tablets

After creating a product that spawned an entire generation of mediocre clones, a second coming only expected. In fact, some are already talking about an iPad 3.0! However, for the moment, let's bask in the warm afterglow of an enjoyable product that is elegantly designed and effortlessly usable. The iPad 2 is slighty slimmer and lighter than its predecessor but sports the same display and resolution, and the brushed aluminium unibody. It's clear that buttons and keys on the body have seen minor adjustments, probably based on feedback. Under the hood, however, things could not be any more different, for the iPad 2 sports a dual core processor clocked at 1 GHz and a new graphic solution that Apple claims is at least 3 times more powerful. The SoC is called the A5, and whether or not it's identical to the Samsung Exynos, Apple blokes will not say.

While tablets are a whole lot of fun to play around with, they remain just that – gimmicky. It's not really for those who want to get work done. Nothing has changed here, although with the faster hardware, movie editing and running the likes of Garage Band becomes possible. But, you can't create 3D games on it – remember we said it's for consumption, not production. Physically on account of the slimmer profile, the iPad 2 feels sturdier, and we like the perforations in the body that serve as the loudspeaker vent.

The cover fits magnetically to the iPad. The display on the iPad 2 looks slightly sharper than the previous one, and we're sure this difference is because of the smaller gap between the LCD and outer glass and the IPS panel used is the same one.

It is rigid with folds and these folds can be used to prop up the iPad in a number of ways. The iPad 2 has two cameras, a front -facing one for Facetime, and a rear one that boasts of HD video recording. Unfortunately, the resolution of the rear camera is no more for still images too, and the quality is quite basic – lots of grain and loss of detail, however, this inclusion is a plus for those looking out for 3G plans. During testing, many complained about the lack of a better camera, like the one on the iPhone 5. Well, Apple wants you to wait for an iPad 3 and possibly a fourth version. Can't put all your apples in one basket, right?

We tried the HDMI out accessory, but the video quality was a bit disappointing – the iPad 2 doesn't upscale well, and the picture was a bit snowy (faces and expressions were not detailed). We're hoping patches solve this. The keypad on the iPad 2 is very sensitive and usable, the only problem is it's too big to be used like a PDA, and a bit too compact to be used as a notebook keypad; still we tried our hand at typing a couple of 300 word emails with no issues.

In terms of performance, none of the apps and games we played felt jerky; Infinity Blade that had the occasional jerk on the iPad works creamily smooth. Aside from the accelerometer, the iPad 2 introduces a 3-direction gyro sensor that allows sensing of lateral and vertical movement for example, panning the tablet around. There will be quite a few games that could utilise this extra bit of control. We tested the music playback, and found the iPad 2 a little less warm than the original iPad, in which if you recall, we found a deviation from neutral. Thankfully, this one is much closer. The loudspeaker is around 15 percent louder.Tested battery life is actually very good – at least on par with the original iPad, and during gaming, we actually got an extra 30 minutes playing Plants And Zombies.

Criticism against the iPad 2 is scarce, other than a couple of nits. It's a great product, albeit not as revolutionary as its predecessor. Other than the hardware, and some minor cosmetic changes, very little has changed, leading us to one conclusion – this product refresh was 70 percent marketing strategy and 30 per cent about serving consumers. At an MRP ranging from ₹29,500 for the 16 GB model, to ₹46,900 for the 64 GB model with 3G support, the iPad 2 is only slightly costlier than its predecessor, but more expensive than any other tablet on the market. However, it's leagues ahead of the mob too, and makes a great, (if expensive), addition to your gadget collection.

Michael Browne

Specifications

Display: 9.7-inches, 1024 x 768 pixels; SoC: Apple A5 dual core 1 GHz; Storage: 64 GB; weight: 613 grams

Contact

Apple India
Phone: +91-80-2574 4646
Email: indiasales@mac.com
Web site: www.apple.com
Price: ₹46,900 (MRP, 64 GB)

7.5/10

Features	7.5
Performance	8.0
Build Quality	8.5
Value for money	6.5

Devices will soon heal themselves.
A team of scientists have invented a polymer that heals itself of scratches when exposed to UV light. Imagine, scratch free phones.

Fedora 15 high on security
Fedora 15 gets a new dynamic firewall which is a departure from its IP tables static firewall approach.

HP Pavilion dm4 1203TU

Customize your desktop with fences

The Pavilion 1203TU is a mid-range multimedia laptop from the dm4 series. It's not as stylish as the Envy 14 and Envy 17, but still packs a punch with a powerful configuration and solid build quality. The lid is coated in matte grey with a braid-like textured design adding a touch of class and style.

The keypad layout implements a flat-key design with good spacing between the keys. However, the keys aren't responsive enough and lack tactile feedback. The special character keys ('@' and ") are wrongly placed,

The unique feature on the dm4 1203TU is the fences app. The fences app creates shaded areas on the desktop which allow the user to easily customise and organize desktop icons by categories. In addition, the user can customise the fences by creating, labelling, renaming, resizing and moving a fence. The user can take daily snapshots of the customised fences and icons on the desktop to restore the previous snapshot or delete the existing snapshot.

The dm4 1203TU secured average scores across most of the synthetic and real-world benchmarks, while seriously lagging behind in the game benchmarks. We feel that the lack of a dedicated graphics card is a major chink in such a powerful configuration. However, the excellent battery-life (three and half hours) in the video-playback test is its major strength. Overall, the dm4 1203TU is an average performer and doesn't qualify even for casual gaming.

Vinod Yalburgi

Specifications

Processor: Intel Core i5 - M480; Memory: 3GB DDR3 1066MHz; Chipset: Intel HM55 Express; Graphics: Intel HD Graphics; Hard drive: 320GB; Display: 14-inch 720p HD LED, Screen resolution: 1366 x 768; Weight: 2 kg

Contact

Hewlett Packard India Pvt. Ltd.
Phone: 1800 425 4999
Web site: www8.hp.com/in/en/home.html
Price: ₹39,990

6.0/10

Features	6.5
Performance	6.0
Build Quality	6.5
Value for money	6.0

Coolermaster HAF 912 Advanced

A worthy investment to house your components

The latest Mid Tower release from Cooler Master looks impressive to say the least, but only when you start installing your components do you realise some of the customisation options and features this black beauty offers. When it comes to industrial design, there's often a tussle between form and function. The HAF 912 Advanced doesn't seem to compromise on either. For instance, it can even fit really long GPUs thanks to the removable HDD cage, while maintaining a compact overall footprint. The bundle includes converters for installing a 2.5-inch HDD in the 3.5-inch slots and likewise for those GB hungry enthusiasts to install a 3.5-inch HDD in one of the 5.25-inch bays. Good cable management behind the side panel, thumb screws, and snap-on screwless HDD slots, and USB 3.0 round up some of the features that make assembling, re-assembling and tweaking internals a breeze.

Speaking of breeze, the case isn't exactly a wind tunnel but provides sufficient air flow via its two 200 mm and one 120mm fans. If we were to talk of negatives it would have to be the one solitary sharp edge that nearly nicked the reviewer. Under load, CPU temperature on our i7 965 refused to cross 65 degrees and ambient temperatures never went above 50 degrees. Good performance for a case costing ₹6,400. Recommended.

Siddharth Parwatay

Specifications

Weight: 8.7 kg
M/B Type: Micro-ATX / ATX
5.25" Drive Bay: 4 Exposed
3.5" Drive Bay: 6 regular / 1 converted
Fans: 2 x 200 mm 700RPM fans, 1 x 120 mm 1200 RPM

Contact

Cooler Master India
Email: sanket_naik@coolermaster.com
Web site: www.coolermaster.com
Price: ₹6,400

7.0/10

Features	8.0
Performance	7.0
Build Quality	7.0
Value for money	7.0

85-percent boost
That is the percent by which smartphone sales have improved this year as compared to last year, with Nokia topping with 30 percent share

Social Search on Google
Google has announced plans to roll out social search features, which involve mixing regular search with publicly available data on your friend's social streams

Audio-Technica M50

One of our favourites so far

The Audio-Technica M50 was launched ages ago but is still one of the most talked about headphones in the world. So naturally we were eager to put it through an aural examination of our own.

Right from the outset they remind you of the Sennheiser HD 280 Pros; whether it's the foldable design or the coiled cable. Where they differ is the build, look and feel and sound quality, with the M50s raging past the 280 Pros.

The headphones seems to be well built and very neutral indeed, in terms of audio quality. By and large, headphones cannot come close to the experience offered by good quality reference speakers, but the Audio-Technica M50s came comfortably in the vicinity of the sound signature of the Genelecs we had with us sometime back.

All frequencies were rendered true to recording, we would place it more towards the brighter side of sound colouration. On a few tracks we could even make out clipping at low volumes. To maintain a high quality source we tested these cans on the Asus Xonar Essence STX sound card. They are very unforgiving on low quality audio. Lower bit rates will be as apparent as Justin Bieber at a death metal concert. A funny inconsistency is that while the seal offered by the pads was quite tight, we noticed a disturbance if you happened to sit right in front of an air-conditioner's draft. At a suggested price of ₹7,700 they come recommended to anyone who wants to listen to true-to-source audio.

Siddharth Parwatay

Specifications

Type: Closed-back dynamic earpads; Driver: 45 mm Neodymium; Frequency Response: 15-28,000 Hz; Sensitivity: 99 dB; Impedance: 38 ohms Weight: 284 g

Contact

Pristine Note
Phone: +91-22-6578 3862
Email: support@pristinenote.com
Web site: www.pristinenote.com
Price: ₹7,700

7.5/10

Features	7.0
Performance	7.5
Build Quality	7.5
Value for money	7.0

Samsung Nexus S

The tie that didn't quite bind

Specifications

Display: 4-inch, 480 x 800 pixels, S-LCD; OS: Android 2.3; camera: 5 MP; Storage: 16 GB; battery: 1,500 mAh; Weight: 129 grams

Contact

Samsung India
Phone: 1800 3000 8282
Web site: www.in.samsung.com
Price: ₹29,590

6.5/10

Features	7.0
Performance	6.5
Build Quality	6.5
Value for money	6.0

The Nexus S requires no introduction, and is quite a revered device and now that we've tested it, we're still scratching our heads over what the fuss was about. The Nexus S is typical Samsung – piano black, with a flat front and a contoured battery cover. Although lighter than the Incredible S, it feels heavier and is thicker and longer.

Right away, the S-LCD is inferior to the display on the Incredible S – it's not as bright, and neither does it have as good colours. Incidentally, the FB app is quirky - we noticed comments posted weren't available even on refreshing. We had issues with calls on two occasions, despite at least eight attempts, the capacitive display wouldn't register a swipe to accept an incoming call. The on-screen keypad is decent – certainly at par with the Sony Ericsson Xperia Arc, although we made more mistakes than on the Incredible S.

Performance in-call was good, although the weak ringer and weaker vibration leaves a lot to be desired and resulted in 11 missed calls in three days. Music quality on the Nexus S is pretty good with good bass and a pleasing mid-range.

At a price of ₹29,590, the Nexus S is a little too expensive. We're sorry to break it to you, but while patches might be very frequent, this will only satisfy geeks wanting a device to tinker with, and not people wanting a good "phone". It's not a bad handset, but there are better ones around for less.

Michael Browne

TDK ST-800

That good old feeling

The ST-800 is certainly a nice looking device with liberal use of high quality leather every where. The retro-cum-contemporary styling is quite eye catching while the soft padding on the cups as well as headband gives enough comfort for extended listening sessions.

The headphones feature an in-line (on the wire) equaliser that lets you control bass and treble levels. The volume is controlled by an on-ear dial (the back panels of the cups turn). These are high-impedance, normal-sensitivity headphones, which means driving them using ordinary sources could be a problem. However when you switch on the in-line equaliser, the signal is amped for considerable gain (two AAA batteries go into one of the cups).

These are certainly not neutral headphones. It couldn't handle our 30 Hz sample too well and we noticed a definitely warm mid range. Take for instance, vocal rendition; we listened to Deep Winter Blues by Chris Rea and while his voice sounds velvety smooth, that husky edge is lost. While mastering music, you know how levels are adjusted to make things sound pleasant - rounding off harsh peaks and such? These headphones seem to do that quite a bit. Your music will certainly sound nice and the headphones will let you prolong audio fatigue. On Therion's O'Fortuna, we found that the instrument separation could've been better.

To sum it up there is nothing really bad about these cans in terms of sound quality but we doubt everyone will like that mellow somewhat over-processed sound. Switching between the M50 and these cans definitely didn't help its score and at a price of ₹9,000 they don't really make for an optimal purchase, unless you want the look and feel.

Siddharth Parwatay

Specifications

Driver size: 50mm
Driver type: Dynamic
Frequency response: 20 - 20,000 Hz
Sensitivity: 104 +/- 3dB
Impedance: 200 Ohms +/- 10%
Cord Length: 1.22m (4 ft)
Battery: 2xAAA - included

Contact

Imation India Pvt Ltd
Phone: 91- 22-67215161/2/3/4/5
Email: sphalak@imation.com
Web site: www.imation-southasia.com/
Price: ₹9,000

6.5/10

Features	6.5
Performance	6.5
Build Quality	7.0
Value for money	5.5

HP Pavilion g6

Multimedia and gaming on a budget

Specifications

Processor: Intel Core i5 - M480; Memory: 3GB DDR3 667 MHz; Chipset: Intel HM55 Express; Graphics: HD 6470M; Hard drive: 610.5 GB; Display: 15.6 LED, Screen resolution: 1366 x 768 pixels; Weight: 2.55 Kilograms;

Contact

Hewlett Packard, India
Phone: 1800 425 4999
Web site: http://www8.hp.com/in/en/home.html
Price: ₹45,000

7.0/10

Features	7.0
Performance	7.0
Build Quality	7.0
Value for money	7.0

Of late, we have seen an uninhibited growth in the number of mid-range multimedia laptops that are capitalizing on the demand for budget laptops in the market. The HP Pavilion g6 pits itself against the level headed rivals MSI FX600, Acer Aspire 5740 and the popular Dell Inspiron 15R series with Intel Core i5 processor configuration within the ₹ 45,000 price range.

The Pavilion g6 comes with a glossy charcoal-grey finish on the lid, with a predominant HP logo etched on it. The glossy black finish on the keypad and the body contours surrounding it, adds a nice contrast with the charcoal grey finish on the areas engulfing the palm-rest and the contours of the keypad. The lack of dedicated numpad keys is a major flaw.

The Pavilion g6 ships with some interesting apps like with Magic Desktop software, which will allow you to work on another virtual desktop, where you can lock access to your files and settings by assigning a master password. The HP Pavilion g6 is a strong performer in the sub ₹45,000 price category. A decent gaming performance across Doom 3 and Far Cry 2 benchmarks and coupled with the feature-rich configuration, it makes a strong statement. The g6 is aimed at the casual gamer, who needs a decent multimedia laptop under ₹45,000 -- but it's unsuitable for high-end gamers.

Vinod Yalburgi

Bazaar mini

QUICK INSIGHTS FROM INDEPTH TESTS

The Digit Test Centre receives hundreds of products every month. Each of these products is put through a series of tests, and are finally given a verdict. The final score is arrived at after considering a number of factors and evaluating them in terms of features, performance, value for money, build quality, and in the case of software, even ease of use.

For better understanding of our ratings, here's a quick guide to our overall score

1.0 - 3.0 - Extremely poor product. Keep away!
3.5 - 5.0 - Strictly OK. Not recommended
5.5 - 6.5 - Decent product. Go for it, but there may be better products.
7.0 - 8.5 - Very good product. Highly recommended.
9.0-10.0 - Ground-breaking product. We've never seen anything like it before. A definite must buy!

Run Linux on a browser

Try out some Linux commands on your favourite web browser
http://bit.ly/izgxsc

MOTHERBOARD

ECS HDC-I2

Price: ₹5,900

Zotac H67-ITX

Price: ₹7,200

SPECIFICATIONS

	ECS HDC-I2	Zotac H67-ITX
Form Factor	Mini-ITX	Mini-ITX
CPU	AMD E350 1.6-GHz	
GPU	ATI Radeon HD6310	
RAM Support	DDR3 800/1066MHz	
Socket		LGA1155
Max RAM Supported		16 GB
RAM Speed		1333 MHz

TEST CENTRE RATINGS (All scores out of 10)

Features 6.5
The ECS HDC-I2 isn't feature-rich -- takes care of the basics, but nothing out of the box.

Performance 6.5
The board's performance can be summed up as average. Its PC Mark Vantage score of 2,542 isn't much different.

Build quality 6.0
Ordinary build quality, typical ports placement, nothing great to talk about here.

Value for money 7.5
The HDC-I2 is a good bargain for a basic HTPC board with a compact form factor.

Features 8.5
For a mini-ITX board, the Zotac H67 packs in virtually every connectivity feature imaginable.

Performance 7.5
The Zotac H67-ITX board performed at par with previously tested H67 ATX boards. Crysis played well at medium settings.

Build quality 7.0
Nothing much to complain here. The Zotac H67 has well designed, well laid out circuits.

Value for money 7.0
The Zotac H67-ITX is priced similar to most Intel H67 boards available in the market.

WE SAY

6.5

The ECS HDC-I2 is a basic mini-ITX board sporting an AMD Brazos E-350 APU with onboard DX11 graphics, making it an HTPC contender for your home. The board isn't in the class of the ASUS E35M1-I Deluxe we reviewed last month, in terms of features and build quality. The HDC-I2 doesn't have a Wi-Fi adapter, no HDMI port and concentrates solely on striking a balance between price and performance for a budget-conscious HTPC user.

7.0

A mini-ITX motherboard, the ZOTAC H67-ITX is a pint-sized warrior, giving its larger ATX-sized counterparts a good run for their money. It comes with an impressive array of features: Wi-Fi 802.11n, DVI, HDMI, eSATA, USB 3.0, USB 2.0, SATA III, SATA II, Display Port and other connectivity ports. Expansion slots are a problem because of the form factor rather than anything else. We liked the board's performance overall. It is priced well and recommended for usage, ranging from a basic HTPC to a mid-range media rig – albeit with a small size.

Smaller SIM card

Apple has proposed a smaller SIM card which has been sent for approval to European Telecoms Standards Institute (ETSI)

Camera on iPod Nano 7th gen?

According to rumours and some images leaked on the net, the 7th gen Apple iPod Nano will sport a camera.

BLUETOOTH HEADSET

Plantronics Discovery 975
Price : ₹5,490

SPECIFICATIONS

Dual Mic AudioIQ and WindSmart technology, Carry case with charging capability, Pairs with any Bluetooth phone

TEST CENTRE RATINGS (All Scores out of 10)

Features	7.5
Performance	6.5
Build Quality	7.0
Value for money	5.5

WE SAY

6.5

For a Bluetooth headset, the Plantronics Discovery 975 packs in a lot of features and snazzy looks. The pairing process is a bit tricky, but the performance on offer is good. The charging case is like a charger on the move to keep the 975 topped up. A bit pricey though.

CELL PHONE

G'Five Projector Phone
Price : ₹7,499

SPECIFICATIONS

Dual-Sim GSM phone, 2.4-inch display, 240x320 resolution, 2MP camera, microSD card slot (up to 8GB), FM Radio, Bluetooth

TEST CENTRE RATINGS (All Scores out of 10)

Features	6.5
Performance	6.0
Build Quality	6.5
Value for money	5.5

WE SAY

6.0

The phone offers a built-in projector, which means that the form factor is slightly bulky. The projector offers very basic performance. The keypad has a slightly weird design, with the number keys above the navigation keys. This makes the phone a tad uncomfortable to use at first.

Intex IN4400
Price : ₹2,650

SPECIFICATIONS

SIM (GSM+GSM); Display: 2.2-inches; Memory: microSD expandable up to 8GB; Battery: 1400 mAh, Talk-time: up to 5 hours; Dimensions: 110x48x13 mm

TEST CENTRE RATINGS (All Scores out of 10)

Features	6.5
Performance	5.5
Build Quality	6.0
Value for money	7.0

WE SAY

6.0

The Intex IN4400 is focused at the budget buyers. If you can forgive the weak camera, you should consider buying this phone, as we've not seen a phone with better feature set in this price bracket. Go for Intex IN2060 for a better camera.

KEYBOARD

Logitech Wireless Solar Keyboard K750
Price : ₹5,995

SPECIFICATIONS

Wireless keyboard. Thin design, Lightweight, No Li-Ion batteries, Only charges through solar cells

TEST CENTRE RATINGS (All Scores out of 10)

Features	6.0
Performance	7.5
Build Quality	8.0
Value for money	7.5

WE SAY

7.5

It can charge off any ambient light source and offers very good battery life. A battery level monitor app is available for download. It functions well within a 20 feet range with hardly any lag. The deck sports scalloped, chiclet keys which are nice to type on. Worth it if you can afford the price.

GRAPHICS CARD

Asus GTX 550 Ti
Price : ₹10,500

SPECIFICATIONS

Core Clock: 910 MHz, Shader Clock: 1,820 MHz, Memory Interface: 192-bit, Display Ports: 1xHDMI, 1xVGA, 1xDVI

TEST CENTRE RATINGS (All Scores out of 10)

Features	6.5
Performance	6.5
Build Quality	7.0
Value for money	5.5

WE SAY

6.0

It's slower than ZOTAC GTX550Ti AMP Edition, MSI N550GTX and Palit GTX 550Ti Sonic, and yet priced much higher. The only good aspect about the card is the cool performance under load. We find it hard to recommend at over 10k.

XFX HD6850
Price : ₹14,250

SPECIFICATIONS

Core clock: 775 MHz; Memory Type: GDDR5; Memory interface: 256-bit; VRAM: 1,024 MB

TEST CENTRE RATINGS (All Scores out of 10)

Features	6.5
Performance	6.5
Build Quality	6.0
Value for money	3.0

WE SAY

5.0

Its performance is similar to the reference AMD HD6850. 3D Mark Vantage: 14686; Crysis Warhead (1680x1050, Very High): 28 FPS; FarCry2 (1680x1050, Ultra, 4xAA): 71 FPS. There are much better options available at the price of ₹14,000. Makes sense under 10k.

LAPTOP

Acer Aspire One
Price : ₹16,999

SPECIFICATIONS

Intel Atom N455; Memory: 1GB DDR3 667MHz; Chipset: Intel NM10; Graphics: Intel Graphics Media Accelerator 3150; Hard drive: 320GB

TEST CENTRE RATINGS (All Scores out of 10)

Features	6.0
Performance	5.0
Build Quality	6.0
Value for money	7.0

WE SAY

6.0

It comes pre-loaded with the Android OS. It delivered mediocre scores across most of the synthetic benchmark tests. Gaming frame rates are barely playable. The long battery-life (250 minutes) is its major strength and aptly fits the bill for a low-end netbook.

LAPTOP HDD

Hitachi H2T750854S
Price : ₹6,000

SPECIFICATIONS

Capacity: 750GB; Interface: SATA 3 Gbps; Cache Buffer: 8 MB; Rotational Speed: 5,400 RPM

TEST CENTRE RATINGS (All Scores out of 10)

Features	4.0
Performance	5.0
Build Quality	7.0
Value for money	3.0

WE SAY

5.0

Sequential Read/Write (MB/s): 84.45/85.33 and Assorted Read/Write (MB/s): 66.06/42.01.Intra-drive transfer speeds are around 25MB/s. At ₹6,000 we find the Hitachi drive hard to recommend as Samsung HM100UI 1 TB drive with better performance, is for ₹3,500.

PenTile LCD
Samsung has demoed an LCD display with RGBCW or 4 primary colours (including white) with 2D RGB local dimming – is this the future?

LGs 2011 LEDs
LGs new Smart LED LCDs have 3D and local dimming – features not seen previously

Highly Desirable

HDTVs are better in just about better in every way to their predecessors. The time seems ripe for a foray, or if you were an early adopter, for a significant upgrade. We've tested some select models from a variety of brands and bring you every juicy titbit of our encounter...

By Michael Browne
michael.browne@thinkdigit.com

We don't have to be your "technology navigator" to recommend an HDTV. Heck! Ask your autowallah or neighbourhood chaiwallah and there's a good chance he'll tell you to buy one. While HDTVs are still relatively rare in Indian households, there are a fairly high number of adopters and this number has steadily been on the rise.

As for this test, as usual, for every two or three brands that participate one does not. This time round, the shocker was Panasonic – a very well respected brand for plasma TVs who chose simply to not participate by giving us the silent treatment despite repeated correspondence from our side. Videocon, who has their own range and markets Philips displays could not send us TVs due to some internal shuffling. MoserBaer opted out as well, reasons unknown.

32-inch TVs: starters

This size category consists of both full HD displays and HD ready ones. If you're shopping for a TV, you should look at only full HD ones, unless of course, you're going to watch non-HD content 80 per cent of the time. The price difference between full HD and other displays is not a lot, to the tune of ₹6,000 or so. One thing to remember is that this size is considered small by manufacturers and advanced features are usually introduced in the larger size categories, so you may need

to do without a couple of extra HDMI ports, or fewer options in the settings menu.

Build, ergonomics and features:

We got 4 TVs, three from Onida and one from Akai. The Akai looked nice with very solid plastics used, and a nice silver finish that has been made to look like wood grain with a lacquer coating.

Of the three Onidas, two were LCD, and had very solid plastics used, on account of which they were quite heavy. Onida has a very neat menu layout buttons are intuitively placed and colour coded.

While the Onida LCO32MMS had a large stand, the LCD32DRT has a smaller oval stand that feels too light for the TV and it doesn't swivel well. The Onida LEO32HMS was LED, like the Akai, and while the stand unit looked attractive, we couldn't figure how to fit it together securely. The glass base has an oval-shaped hole that is meant to hold the neck of the top of the stand but there was no fastening mechanism.

Onida LCO32MMS

Performance

Despite the Akai having the best contrast ratio as per our Spyder 3 Elite, the cheapest TV here, the Onida LCO32MMS was the most impressive in the movie tests. This was because the Akai LED32D20 had a problem with overbearing greens, and this couldn't be adjusted in the TV menu, meaning the colour green dominated every single image. In Avatar, where there was jungle and foliage with dappled sunlight, the sunlight had a greenish tinge to it as well.

Among the Onida TVs, the costlier LEO32HMS performed the worst. For starters, text wasn't sharp, and we had some image scaling issues. Movies lacked colour depth, and backlight response time was mediocre. The Onida LCO32MMS looked quite good, with good colour, and a really nice contrast. Where this display lost out was in DVD scaling, where artifacts were noticeable in fast moving scenes, hair, as well as dim colours.

Winners

The Onida LCO32MMS walks home with our *Digit Best Buy* award thanks to its excellent mix of price and performance. Its rare to see the cheapest anything also perform the best in a group, and if you're looking for a great 32-inch TV, this is one that we can certify. The Onida LCD32DRT also makes a decent buy but it's slightly costlier than a model that is no worse of in any of the tests, save for sound performance.

HOW WE TESTED

We divided the HDTVs into categories based on size. To test them, we used a test notebook with a GeForce GT555 graphics card and an HDMI out via a good quality HDMI 1.4a cable with noise filters. Additionally, we hooked up each HDTV to an LG BD550 Blu-Ray player via the same HDMI cable.

To gauge menus and such we played around with the settings. After this we calibrated each display using the Spyder 3 Elite. Before calibration settings were set to 50 per cent values, i.e. brightness, contrast, backlight and such were set to 50 per cent. There has been internal debate about which settings to use, whether a median value of 50 per cent or a value at which each display gives its best performance. Finally, in order to avoid subjectivity that arises from different reviewers, we chose the former method. All extra settings such as noise reduction, motion-related processing, dynamic contrast etc., were disabled. Post calibration we recorded brightness values, contrast values then ran our tests.

The 1080p test consisted of 3 files – Blu-Ray disc of *Avatar*, 1080p .MKV file of *Avatar*, and a 1080p .MKV file of *Robin Hood*. The 720p video test consisted of 3 files and we didn't use a Blu-Ray player for this. The movies used were *Clash Of The Titans*, *The Fast And The Furious*, *Ironman 2*. Finally our DVD movie was a .VOB file and we used *The Bank Job*.

We rated the TVs on their ability to display native 1080p content, as well as work with lower resolution content i.e. upscale. Particularly the DVD movie gives us an idea how the display will perform with really low resolution content. We judged the videos on the basis of overall image quality that is a function of colour purity, contrast, per pixel detail, absence of noise, and of course upscaling performance. For text sharpness we looked at icons on the Windows desktop as well as a .doc file. We also checked the USB functionality with both a flash drive and external HDD. We played back .DivX files encoded from .VOB, and MP4 files encoded from the .MKV format at 720p.

10 inch retina tablet display
Samsung has announced a 10-inch retina (300 dpi or higher) display for tablets based on their PenTile technology

iPad 3 display rumours
Samsung is reportedly developing a 2048x1536 pixel display. Could this be Retina for the iPad 3?

40/42-inch TVs: where the real fun begins

If you're an HDTV owner, or are waiting to hop aboard the bandwagon, you might be wanting to watch a lot of HD content on your TV, or even convert a part of your home into a little cinema theatre. For such purposes the bigger the better, and there's nothing like a screen that fills your vision with its image. However, you're also one who doesn't want to part with a lot of liquidity. The 40/42-inch size class of TVs has seen a lot of price drops happening, as well as the influx of new models.

Build, ergonomics and features

The Sharp Aquos LE820 was a real beast – heavy, and well built, in fact the heaviest of the LED displays in this lot. The LG 42LV3730 was the lightest of the displays, and had a nice glossy black finish. Of all these displays, only LG uses a metal rear, the other three were plastic. The Onida LEO40HMS was the heaviest of the bunch, mainly owing to the massively thick plastic panel on its rear. The LG LFLV3730 had the slimmest bezel among these TVs. The Hitachi LE42T05A is well built, although the stand doesn't swivel well and the bezel is a bit too wide. We also found the bright blue power light a little obtrusive. The menu is sparse, some options were there, but they were greyed out. Incidentally, this was the only TV with USB that didn't read our thumb drive, nor our external HDD with .DivX files.

The LG LFLV3730 had the deepest menu system, very detailed with a wealth of settings. Incidentally, this LG TV has a semi-gloss display, that while not matte like some of the other panels, wasn't glossy like the larger Samsung UA46D6600WR. The Sharp Aquos LE820 also had detailed settings, but we feel the naming convention needs to be simplified for home users, as it is, it seems designed for engineers with the terms used.

Performance

At the very outset, the Sharp Aquos LE820 blew the competition out of the water. Well, not price wise any ways, for it was also close to double the price of the other TVs in this group, but in terms of sheer performance. While the difference isn't night and day, it is definitely visible, and those purists who seek that extra bit of colour depth, and that extra blackness level and contrast will surely find it. The Aquos LE820 performed marvellously in our movie tests – in *Avatar* the foliage literally comes to life and the specular effects of dappled sunlight are very realistic. There is also a lot of sharpness in the image, without any sort of graininess. It also handles 720p content well, and in *Ironman 2* the electricity effects on Whiplash's suit, and the explosions are really cinematic. Sharp uses a different panel, with 4 colour elements i.e. RGYB colour gamut instead of RGB as there is a yellow component as well.

Sharp Aquos LE820

The LG 42LV3730 doesn't even come close to the Sharp Aquos LE820, but it does handle the tests fairly well despite a fairly mediocre static contrast ratio of 346:1. We felt this TV "masks" its shortcomings really well, and while colours lack that extra bit of reality and appear a little muted sometimes, the greenery and animal skins in *Avatar* look very nice, and there's a fair bit of punch to the brighter scenes with weapon effects and such looking pretty good. In shadowy regions, and darker scenes, the LG loses out and banding is plainly visible.

The Hitachi LE42T05A suffers from mediocre colour and contrast, and everything looks a little muted and lacking in detail as a result. It is about at par with the Onida LEO40HMS.

Winners

It wasn't one of the larger TVs than won the best performance award. Rather it was the Sharp Aquos LE820 that impressed beyond even the larger 46 inch - 55 inch displays. For its razor-sharp image, colours and a whopping contrast of 1096:1 as per the Spyder, it wins our Best Performance award. LGs 42LV3730 bagged our Best Buy award, and if you're shopping for a good 42-inch TV, for ₹68,490, this one makes a pretty good deal.

LG 42LV3730

46-inch TVs: Home cinema starts here

This is an interesting category because TVs of this size were priced above ₹1,00,000 last year, but owing to demand and a shift in preference of consumers towards larger displays, prices have fallen. Other than the Vu LC-46V86P, the other three models here are LED-backlit LCDs.

Build, ergonomics and features

Samsung's UA46D6600WR was definitely one of the sleekest displays we've seen with a bezel that is slim enough to give LCD monitors a major inferiority complex. It's also a very light display, one of the lightest in this comparison. The Hitachi LE46T05A was rather nondescript looking, but the stand despite looking identical to the smaller Hitachi display and was more stable and permitted easier swivel.

Vu's LC-46V86P is a bulky LCD that is heavy, but when Vu says "Intelligent" they mean computer and this display houses a full fledged PC inside its shell. We were impressed to see a Pentium Dual Core E5800 (3.2 GHz), 2 GB of RAM and a 500 GB notebook hard drive (Western Digital WD5000BEVT). The graphics solution was an Intel G41, and this configuration runs 1080p content well, while being overkill for surfing and such.

Sony's KDL-46EX720 is another good looking offering, second only to the Samsung UA46D6600WR. It has the best looking remote unit of all with a sliding cover housing the batteries although the menu buttons are too close to each other and this causes some ergonomics issues when using them.

Buying Guide		
Budget	**Needs**	**Recommendations**
Erm, I'm willing to spend, but I want the best. OK, up to ₹1,50,000	The best possible quality from a TV, price no bar, size variable between 40 and 50-inches	Sharp Aquos LE820 40" (could also check the 46" version), the colour and contrast is truly amazing
Up to ₹35,000	I'm not cheap, but I want a basic TV as am upgrading from a fat old CRT.	Onida LCO32MMS, at Rs. 27,990 it's a very good buy and a good performer to boot
Up to ₹70,000	An LED TV, a cheap one that is a good performer, my wife wants something slim to match her living room	LG 42LV3730 - a nice looking, sleek TV that is also a pretty good performer and comes with a lot of features including built in Internet
Up to ₹1,50,000	The biggest display for the budget	Vu LED-55T28R - a great LED TV - good colours, decent contrast, totally cinematic. You could also check some larger plasma TVs
Up to ₹80,000	A TV and PC in one	Vu LC-46V86P - browse as you watch TV...it's a good performer too

Performance

Sadly, two of the biggest names here failed to impress. Both the Samsung and Sony models are based on S-PVA panels, and frankly, we found the Samsung UA46D6600WR abysmal at our 50 per cent brightness and contrast settings. Increase the backlight and the contrast to 75, and the contrast ratio rises to 185:1 from a measly 30:1, which is still on the lower side. The best figure we got was on Samsung's own "Vivid" setting – 254:1. Even at this setting, colours, while bright, appeared artificial, especially in *Avatar*.

The second disappointment although due to very contrasting reasons was the Sony. While the contrast here was better, the KDL-46EX720 suffers from a noisy output. Even with native 1080p content, the picture is noisy and this makes the forest in *Avatar* lose its verdant green and look a generic green instead with some botches in certain areas. Faces in *Ironman 2* look so noisy it appears Gwyneth Paltrow has triple the freckles. The Hitachi LE46T05A is better than its smaller sibling in every way – better colour, higher and better controlled brightness. However, the contrast in darker scenes is still poor, and the display suffers from highlight clipping.

The Vu LC-46V86P was the only LCD in this group and it gave good scores. The only aspect worthy of complaint is a mediocre contrast ratio and the lack of a really wide colour gamut. Greens and reds have some banding, and this is worse than the blue banding we see in some displays. However, this was only visible some of the time, and the picture quality on the whole pretty nice.

55-inch: Vu LED-55T28R – bring home the action!

Vu sent us the only 55-inch TV in this comparison, so naturally it had no competitors, although neither does it stand a chance to get awarded, for battles are hard fought and to get a trophy at Digit, you need to get into the trenches and slug it out.

VU LC-46V86P

Winner

For the second time in this shootout, the cheapest TV won. The Vu LC-46V86P wins our Best Buy award, not only is it a good TV, it has a built in PC too, which makes it just too good to resist.

	BEST BUY digit JUNE 2011						BEST BUY digit JUNE 2011	BEST PERFORMER digit JUNE 2011	
Brand	**Onida**	**Onida**	**Akai**	**Onida**	**Hitachi**	**Onida**	**LG**	**Sharp**	
Model No	**LCO32MMS**	**LCD32DRT**	**LED32D20**	**LEO32HMS**	**LE42T05A**	**LEO40HMS**	**42LV3730**	**Aquos LE820**	
Price ₹	**27,990**	**29,990**	**39,990**	**40,990**	**65,900**	**65,990**	**68,490**	**1,19,000**	
Features (Out of 24)	**6.19**	**6.10**	**7.87**	**6.96**	**7.30**	**6.96**	**10.66**	**11.62**	
Usability And Ergonomics (Out of 12)	**6.36**	**6.29**	**6.32**	**6.28**	**6.43**	**6.28**	**7.64**	**7.36**	
Performance (Out of 64)	**37.19**	**37.01**	**36.58**	**35.02**	**35.33**	**35.16**	**38.88**	**44.47**	
Grand Totals (Out of 100)	**49.74**	**49.40**	**50.78**	**48.26**	**48.39**	**49.05**	**57.17**	**63.44**	
Plus (+)	**Good performer**	**Good performer**	**Looks different**	**Very solid build**	**Decent value**	**Very solid build**	**Good performer, rich menus**	**Excellent performance and contrast, great blacks**	
Minus (-)	Menus not detailed	Menus not detailed	Slightly expensive for performance	Mediocre performer, poor stand	Mediocre performance	Mediocre performer, poor stand	Lacks a bit of contrast	Very expensive	
Features									
Screen Size (Diagonal, in inches)	32	32	32	32	42	40	42	40	
Resolution (in pixels, L x H)	1366 x 768	1280 x 720	1366 x 768	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080	
Connectivity									
Number of HDMI ports	2	2	2	2	3	2	3	4	
Number of Component / Composite connects	1 / 2	2 / 4	1 / 4	1 / 2	1 / 3	1 / 2	1 / 2	1 / 0	
Number of USB ports	2	1	2	2	1	2	1	1	
Number of Display Port /D-Sub / DVI connects	0 / 1 / 0	0 / 1 / 0	0 / 1 / 0	0 / 1 / 0	0 / 1 / 0	0 / 1 / 0	0 / 1 / 0	0 / 1 / 0	
Digital Audio out (Y / N)	N	N	Y (coaxial)	N	N	N	Y (optical)	Y (optical)	
RJ45 (LAN) / Wireless LAN (Y/N)	N / N	N / N	N / N	N / N	N / N	N / N	Y / N	Y / N	
Usability And Ergonomics									
Placement of buttons on unit (So 10)	6.5	7.25	6.75	6.5	6.75	6.5	6.5	6.75	
Menu Intuitiveness (So 10)	7.25	7	6.5	7	7	7	7.25	7	
Options Available (So 10)	6	6	6	6.25	6	6.25	8	7.5	
Remote Control Unit (So 10)	6.5	6.5	6	6.5	6.5	6.5	7.5	7.5	
Wall Mounting (Y / N)	Y	Y	Y	Y	Y	Y	Y	Y	
Stability of Stand (So 10)	6	5.75	6	5.5	6.75	5.5	8	7.75	
Swivel Base (So 10)	5.5	5	6.75	5.5	5	5.5	7.75	7	
Performance									
Inbuilt Speakers (volume, clarity) (So 10)	**6.5**	**6.75**	**6**	**6.75**	**5.75**	**6.75**	**6.75**	**6.25**	
Spyder 3 Elite									
Whiteness Level	185.2	176.5	92.8	161.6	203	152.1	114.2	98.7	
Blackness Level	0.32	0.35	0.11	0.32	0.44	0.29	0.33	0.09	
Contrast Ratio	578.8	504.3	843.6	505	461.4	524.5	346.1	1096.7	
Gamma (Target / Calibrated)	2.2 / 2.21	2.2 / 2.23	2.2 / 2.17	2.2 / 2.3	2.2 / 2.25	2.2 / 2.3	2.2 / 2.17	2.2 / 2.5	
HD Movie and Video Tests (So 10)									
1080p Clip	7	6.75	6	6.25	6.5	6.25	7.75	8.25	
720p Clip	7	7	6.25	6.25	6.25	6.5	7.25	8	
DVD Movie	6.25	6.5	6.5	6.5	6.5	6.25	7.25	7.25	
Text/Presentation Sharpness Test (So 10)	**6.5**	**6.75**	**6.75**	**6.25**	**7.25**	**6.25**	**7.75**	**7.25**	

However, we reward efforts as well, and the LED-55T28R is all about making a splash. It's quite slim, even for an LED, although heavy, even give its prodigious size. 55-inches is a lot, but after a while, the TV really grows on you and we're finding our 32 and 46-inch TVs at home too small – screen real estate really has this way of spoiling your eyes, and once you've seen big, you don't want to settle for less. Surprisingly, it was quite viewable from a distance of even 8 feet, with no noticeable pixellation – kudos to Vu. In terms of image quality, the big Vu is impressive – very good colour, with only minimal loss in darker regions and a contrast ratio that while not great, is easily sufficient for daily viewing. The only issue was a slight bit of lag noticeable in some scenes, although our speedy car chase scenes from *The Fast And The Furious* had no issues. Avatar looked nice and crisp with a lot of punch to the colours, only the Sharp Aquos LE820 looked punchier and the LG 42LV3730 inched ahead on account of a slightly faster backlight response. Even its speakers are pretty decent, though of course, you'll need a nice 5.1 setup for a home theatre system.

BEST BUY digit JUNE 2011

EDITOR'S PICK digit JUNE 2011

	VU	Hitachi	Sony	Samsung	VU
	LC-46V86P	LE46T05A	KDL-46EX720	UA46D6600WR	LED-55T28R
	75,000	89,900	1,03,900	1,39,990	1,40,000
	12.67	7.30	12.84	12.17	14.28
	7.12	6.67	7.05	7.28	7.11
	38.80	39.03	35.42	31.41	40.33
	58.60	53.00	55.31	50.86	61.72
	Good performance, relatively affordable	Very good performer	Good blackness level	Ultimate sleek design	Great all round performer, good colour
	Contrast mediocre, poor blackness levels	Contrast in bright scenes is mediocre	Very grainy image in HD movies	Shockingly poor contrast and performance	Slightly expensive, poor blackness level
	46	46	46	46	55
	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080
	3	3	4	4	4
	1 / 2	1 / 3	1 / 1	0 / 1	1 / 1
	6	1	2	3	8
	0 / 1 / 0	0 / 1 / 0	0 / 1 / 0	0 / 1 / 0	0 / 1 / 0
	Y (coaxial)	N	Y (optical)	Y (optical)	Y (coaxial)
	Y / N	N / N	Y / N	Y / N	Y / N
	6.25	6.75	6.25	6.75	6
	7	7	7.25	6	7
	6.25	6	7.5	7.25	6
	7.25	6.5	7.5	7.75	7.25
	Y	Y	Y	Y	Y
	8.25	7.25	6.5	8	8.5
	7.5	6.25	6.5	7.75	7.75
	6.75	6.5	6.75	6.5	6.75
	327.2	205	39.1	60	251
	1.06	0.36	0.11	1.33	0.53
	308.7	569.4	355.5	30	473.6
	2.2 / 2.34	2.2 / 2.5	2.2 / 2.18	2.2 / 1.85	2.2 / 1.93
	7.25	7	6.25	5.75	7.5
	7.25	6.75	6.25	6	7.5
	7	8	6.25	6.5	7.75
	7.25	7	8	7.5	7

A huge plus, is the inbuilt PC, and unlike its 46-inch sibling, this one has a nicer dual core Intel Core i3 processor, 2 GB of RAM, 500 GB hard drive, and an Intel H55 graphics solution – more than sufficient for most tasks save gaming. What's more, there's a nice Logitech wireless keyboard and mouse combo bundled with it. The price is still a bit steep. Vu gave us a price of ₹1,40,000, although the MRP printed on the box is ₹1,20,000. At anything really close to a lakh, this TV is a steal!

A few of these TVs are 3D ready, but you wouldn't know that from our test. The fact is, we find 3D more of an overhyped feature than one that you can actually use at the moment. Sure, it's great to future proof and such, but there's really no telling how soon 3D content will be available in your local store by the ton. If you're watching TV channels most of the time and the occasional movie, you can ignore the 3D component right away, unless you want to future proof. Besides, 3D is a technology that relies on tricking your eyes, and this needs a large screen to pull off successfully, so that you're totally involved in what you're seeing. This mandates a 55-inch and above display if you really want to make it work convincingly.

Let's look at another aspect of today's TVs – the Internet. Many of these displays come with RJ45 connectivity and support for Youtube, Facebook and so on. This is just the think for the social networking junkie or the compulsive surfer, although there's still a fair way to go with them being used as replacements for laptops and such, maybe another 10-15 years? Or maybe a whole lot sooner... either ways, there is a wealth of features available, and it's good to see some really nice performers as well. Video purists, feature junkies, Internet addicts, or IPL fans – your fix begins here!

VU LED-55T28R

Contact sheet

Brand	Company name	Phone no	E-mail Address	Website
VU	Vu Technologies	022 28377300	info@technologies.vu	www.technologies.vu
Onida	MIRC Electronics Limited	1-800-3009-9000	response@onida.com	www.onida.com
Sony	Sony India	1800-103-7799	sonyindia.care@ap.sony.com	www.sony.co.in
Hitachi	Hitachi India Pvt. Ltd.	011-45515500	Sales@hitachi.co.in	www.hitachiconsumer.com
LG	LG Electronics india Pvt. Ltd.	91-120-2560921/926	NA	www.lg.com
Sharp	Sharp Business Systems (India) Limited	1800-4254-321	response@sharp-oa.com	www.sharpproducts.in
Akai	Akai Sales Pvt Ltd	0124- 4305012	info@gbes.asia	www.gbes.asia
Samsung	Samsung India	1800-3000-8282	NA	www.samsung.com

Windows Azure
Windows Azure is Microsoft's answer to Amazon Web Services for Windows servers

Amazon EC2 collapse
Recently Amazon EC2 suffered an extended outage, reminding people once again, that redundancy is always a good idea

My Wallpaper Contest

These are some of the coolest wallpaper entries we received for our My Wallpaper contest. Congratulations folks! Your gifts will reach you soon.

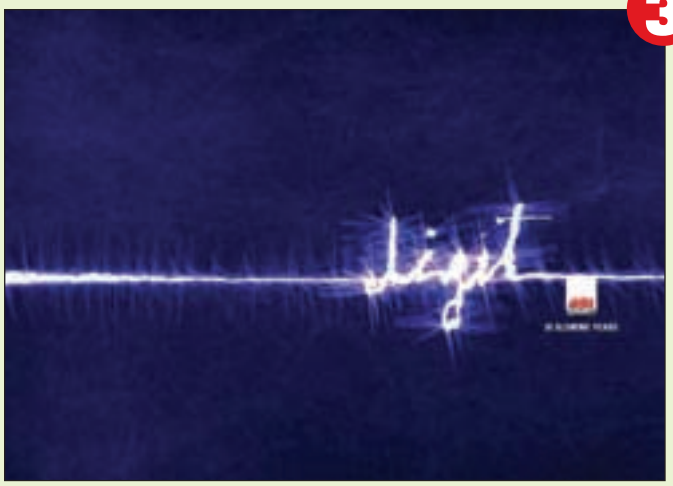
1

Designed by: Abhishek "Tweaked"

2

Designed by: Amit Kulkarni

3



Designed by: Tushar Tajane

4

Designed by: Raju Pandit

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reddot design award winner 2010

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JetEffect 3.0 & BBE+	TV Out
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Retro Modern Design	11 hrs Video Playback
Music | Video | FM Radio	103 hrs Music Playback

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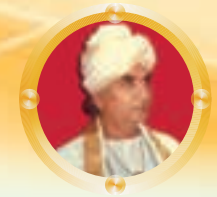

Centenary Celebration of Sharnbasveshwar Vidya Vardhak Sangha, Gulbarga

Poojya Dr. Sharnbaswappa Appa Mahadasoha Peethadhipati

Celebrating his 76 glorious years

A BRIEF INTRODUCTION

Poojya Dr. Appaji, the son of Matoshree Godutai Doddappa Appaji and Poojya Doddappa Appaji, born on November 14, 1935 and was brought up in the rich tradition of Dasoha-culture at the spiritual abode where saint Sharnabasava performed Dasoha. Appaji did his M.A. in Philosophy from Karnataka University, Dharwad.

More than 50 Institutions right from K.G to P.G. including the disciplines, P.G in Fine Arts, Computer Science, Management, Engineering, the distinct Residential Public School, D.Ed & B.Ed training courses of Sharnbasveshwar Vidya Vardhak Sangha, headed and excellently administered by Poojya Dr. Appaji, created a revolution in the field of MAN-MAKING education in Hyderabad Karnataka region and put the educational map of Gulbarga, in India.

Like Brahama Sutra, Kalpa Sutra, Yoga Sutra, Sankhya Sutra of ancient Indian Philosophers, and that of metaphysical poets, Appaji has written DASOHA SUTRA, a divine book of eternal laws which governs the entire universe. This compelled Dr. Judith Kroll of U.S.A to translate it into English and the angel of mercy, Mother Teresa to hail it as a repository of empirical clues to truth and God. Dr M.J. Akbar, the eminent journalist, made a comment referring to one of Appaji's Sutra on communal harmony and integration of India at the crisis and said, "Here is a prayer that India needs it had never needed before. And the Chairman of Prasarabharati of India, Dr. M.V. Kamat while writing commentary to Dasoha Sutra's estimated Appaji as " the illuminating star in the galaxy of contemporary philosophers". The Govt. of Karnataka has implemented Dr. Appaji's concept of dasoha while initiating the policies and programs by adding the suffix Dasoha as AKSHARA DASOHA in Educational schemes. Appaji, being the 8th Mahadasoha Peethadhipati of Sharnbasveshwara Samsthan, Gulbarga, has taken the hardest task of flooring the Laldhari-bricks of the Dhari region of Basavkalyan for the beautification of the holy campus of Saint Sharnbasava which helps millions of devotees perform their religious rituals and Dasoha.

To convert, Gopur, the tower of Lord Sharnbasveshwar shrine into Swarna-Gopur by coating gold was the greatest expectations of Poojya Dr. Appaji. Many devotees have already donated for this project of Appaji. In a short period, the holy shrine's tower will illuminate with Gold. On the Mahasamadhi of the Lord Sharnbasava the same two golden faces of Guru and Shishya, the teacher and the taught, are already shining with only one divine light Emitting the same beacon of light to the world. This dasoha-tradition of Guru-Shishya on Mahasamadhi can be seen only at Sharnbasveshwar shrine, found and not be in any histories and civilization of the world.

Appaji, the champion of Dasoha Philosophy, contributed an equestrian statue of Vishwa Guru Mahatma Basveshwar and got it installed at the premises of the Parliament House New Delhi – unveiled by His Excellency, Dr. A.P.J. Abdul Kalam, the Honorable President of India. This itself is an noble deed worth of Rs. 50 lakhs it shows Appaji's passionate commitment to Lord Jagadguru Basveshwara and the Paramatha's.

Pooja Dr. Appaji, being a rationalist, is always in the quest of newer and newer knowledge and newer experiences……in the field of Kayaka–Dasoha. To spread the life and messages of Basawadi-Shivasharanas and the great men of God and their universal ideas, ideals, principles, doctrines, theories…. Appaji has constituted a huge fund to organize national and international seminars and symposia, and to publish articles and books based on lives of great men of God and truth so as to propagate and popularize their universal ideas and ideals to the world community.

"As the sun is everyday new and old; so is my love telling what is told" says Shakespeare. Like the burning Sun, Appaji always emits the rays of knowledge both of traditionalism and modernism. His love of wisdom – i.e. philosophy tells what has been told by the great men of God for all the times. He is an integrated personality, the reservoir of antiquity and modernity. His'historical consciousness pastness of the past and pastness of the present establishes simultaneous existence and simultaneous order and makes him a traditional thinker, who beautifies modernity by Dasoha Dharma. His Dasoha Philosophy has the deep roots in traditions of great men of spirituality who changed their tenure on this moving planet, Earth.

Appaji, being the possessor of the noble qualities of Truth, God, Beauty, Knowledge, Wisdom, Goodness, … is always and everywhere honored. Govt. of Karnataka awarded Rajyostsav award. University of Gulbarga conferred on Appaji a honourary Doctorate degree. " Sadguru – Shiva Parvati Ppunya Sloka Adyatmikc Puraskar' of Nasik, Maharastra. Shiromani Gurudwara Prabandaka Committee honored Appaji at the Golden Temple Amritsar of Punjab for his distinguished service to mankind. Sufi-Islamic conference, Hyderabad, honored him for his noble services especially, for integrating the minds and hearts of the people. Saheli's Slum Children and Women Development Association Bangalore, a Christian Organization awarded "Kirana Prabha – 2004" for his commitment to the field of true service that's serving mankind as serving God. Recently, Kannada Sainya of Gulbarga awarded 'Kannada-Veera - 2006' for his contributions to the development of Kannada-Nadu-Nudi and Sanskriti – while celebrating Suvarna Karnataka Varsha 2006. Swara Madurya Sangeet Academy has awarded 'Kala-Poshak, the Patroniser of Art-2007. This itself mirrors Appaji's multi-dimensional personality.

What the great thinker, Machavelli said "It is not the titles that honor men; but, It is the men to honor those titles". Appaji, being true to all these titles is rightly honored for his distinguished services in the field of Kayaka-Dasoha and the philosophy of education as well as the great responsibility of leading the masses with his eternal quality of cheerfulness and disposition.

As he is a staunch believer and adorer of Lord Sharnbasva he always looks at Sharnbasveshwar Shrine's tower and sings 'Ninna Bala Ondiddare Saaku". The exemplifies one that he has the quality i.e. the quality of his own, nothing but uniqueness…, endowed with spirituality – the permanent power with which, we are blessed and benefitted. Poojya Dr. Sharnbaswappa Appa, a multi-faceted personality, at the glorious age of 76 years, has already spent over 55 years serving the people in various capacities. He combines knowledge and action, which has culminated in the development of a huge educational complex. He takes delight in providing free education, free food and accommodation to several hundred students, in addition to the nominal/concession fees to 5000+ poor and meritorious students annually. He has provided unbelievable opportunities to over 18,000 students in his 50 vibrant institutions (including 10 for women), with an investment of Rs. 200 crore on infrastructure, in order to help them pursue their education in different streams – from KG to PG.

Appaji also provides food, free of cost, to over 10 lakh people of all communities every year at his home (Dasoha Mahamane). He is recognized for his invaluable services to humanity by many organizations as well as the government. Gulbarga region, due to his selfless service, has become a hub of educational activities, a tranquil place of communal harmony and a Mecca of pilgrimage for the followers of different faiths. Appaji in his ambitious program, is converting Gopura (tower) of Saint Sharnbasveshwara into Golden Gopura with an investment of Rs. 35 crore, like Golden Temple, Amritsar. Above all, Poojya Appaji is a personification of grace, compassion, love and eternal service to humanity.

Poojya Dr. Sharnbaswappa Appaji on several occasions...

Prime Minister Smt.Indira Gandhi with Poojya Dr. Sharnbaswappa Appaji at the Dasoha Mahamane.

Poojya Dr. Appaji honours Shri Basavraj Bommai, Minister of Major Irrigation, Govt.

The Vijayadashmi celebrations, the devotees are moving in a procession, His Holiness Poojya Appaji is being taken in it

His Holiness Shree Mahanta Shivacharya receiving a memento from Hon'ble Dharm Singhji and others

Dr. Shankar Dayal Sharma, President of India is seen with Appaji & other dignitaries at the Veerashaiva convention, held at Belgaum

Sri Zail Singh, President of India, in divine company of Poojya Dr. Appaji

Sri Sri Sri Ravishankar Guruji, the renowened saint honoring Poojya Appaji

Poojya Appaji's grand birthday celebrate by both holiest swamiji's

Poojya Appaji Honoring, Hon'ble Prime Minister Of India, H.D.Devegouda

Robert Aumann, the Noble Laureate from Isrel in chat with Poojya Appaji.

Sri S.R.Bommai, the former Chief Ministe of Karnataka and also the Union Minister of HRD, is in conversation with Poojya Appaji

Poojya Appaji is flanked by the pontiff, Sajjad of Khaza Banda Nawaz Darga of Gulbarga & Sajjad of Halkarta Darga of Gulbarga Dist..

Dr. A.P.J. Abdul Kalam Hon President of India on the Occasion of centenary celebrations of the Sangha along with Poojya Dr. Appaji.

Vice-Chancellor of Gulbarga University, Dr. E.T. Puttaiah being felicitated by Poojya Dr. Appaj at Inauguration of 40 days lecture series on the platform of Akhil Bharat Anubhava Mantapa.

Poojya Dr. Appaji honouring Dr. Niranjan V. Nishty on Annual day celebration of Science Academy

The Thulabara of Poojya Appaji is being conducted by his devotiees on the occasion of his 76th Birth Day His Holiness of Sulfulmath and Sri Harkood Swamiji are sharing the joyous celebrations

The Karnataka Chief Minister Hon'ble Sri. B.S. Yedeyurappa lights the lamp of declaring the opening of the lecture Series of Shravanmasa. cabinet colleagues, ligislators and Poojy Appaji look on

Poojya Appaji being felicitated by Rajiv Gandhi Prime Minister of India, for his munificent service rendered for the welfare of fellow countrymen.

Poojya Appaji with External Affairs Minister S.M.Krishna and other dignitaries, while releasing the Gulbarga edition of Samyukta Karnataka

Inauguration of Buddha Vihaara the third eye of Gulbarga as hailed by Poojya Appaji by Nobel Laureate Dalai Lama, built under the stewardship of Sri. Mallikarjun Kharge Union Labour Minister.

Poojya Appaji, while attending an international conference at Gurunanak University, Amruthsar, interacting with Prof. Hardev Virk and presenting a memento to Sikh brethren.

Our beloved President, Philosopher, Compassionate and the Scientist Poojya Dr. Appaji and Principal Sri V. S. Ganapati.

Dr. Radhakrishnan, the Indian philosopher and President of India, seen in the divine company of Poojya Doddappa Appa at the Dasoha Mahamane

Poojya Appaji is introducing to the Hon'ble Governor Sri H.R. Bhardwaj the sculptures which display the Leelas of the divine life

Hon'ble Rahul Gandhi poses for a photograph with Poojya Appaji & his daughter Godavari, grand Children & Son-in-law Sri. Raja Bhimalli

Sri Kurshid Alam Khan Hon, Governor of Karnataka while conferring Honorary Doctorate to Poojya Appaji

Dr. Anil Kumar Bidwe, Principal, Appa Institute of Engineering & Technology with Poojya Appaji

Poojya Dr. Appaji honouring Principal Dr. Anil Kumar Bidwe. On his left Principal V. S. Ganapati

Dr. Shankar Abhyankar, Pune University along with Dr. M.S. Gosavi, Secretary, Gokhale education society, Nasik presenting the highest "Shiva-Parvati Adhyatmik Award" to Poojya Dr. Appaji

The Karnataka Governor, Hon, Sri Rameshwar Thakur along with Pooiy Appaji in Dasoha Mahamane

Mahatma Gandhiji visit to Gulbarga and particularly offering the respect and devotion to the Samadhi of Mahadasohi Sharnbasveshwar, the great saint. Poojya Dr. Appaji was considered as an anti-national by the traitors and the rulers. Gandhiji came to Gulbarga and seeking blessings of Poojya Doddappa Appaji, consoled him.

Milestones in the life of his Holiness

1903 Sharnbasveshwar Vidya Vardhak Sangha was established by Poojya Dr. Dodappa Appa. At present, there are over 48 Nursery to PG level educational institutes across Hyderabad Karnataka under the administration of Poojya Appaji.

1918 Poojya Doddappa Appaji established the Sharnbasveshwar Public Library. His purpose was to awaken people to the spirit of nationalism, organization, social unity and the significance of independence.

1934 Established First Girls School by the Sangha

1935 His Holiness Poojya Sharnbaswappa Appaji the son of Matoshree Godutai and Poojya Doddappa Appa, born on November 14, 1935 at Gulbarga, Karnataka.

1974-76 Elected President of Hyderabad Karnataka Education Society. Running Medical and Engineering College, which had fifty thousand students strength.

1983 Poojya Appaji become the 8th Mahadasoha Peethadhipati of the Sharnbasveshwar Samsthan.

1984 Senate and Syndicate member of Karnataka University, Dharwad

1985 Elected Member of the development Committee of Gulbarga University first five year plan.

1991 As President of Akhil Bharat Maha Sabha, he undertook several activities. Karnataka Government awarded "Rajyotsav" Award.

1992 University of Gulbarga conferred Honourary Doctorate to Poojya Appaji.

1995 Sufi Islamic Conference, Hyderabad, Honoured Appaji for his noble services, especially for integrating the minds and hearts of the people.

1999 Shiromani Gurudwara Prabhandak Committee Honoured Poojya Appaji at the Golden Temple, Amritsar.

2002 Poojya Dr. Appaj started a new Engineering College with Computer Science related subjects with the intention to provide the complete computer environment.

2003 Installation of Vishwa Guru Lord Basaveshwar Statue at the 9th Gate of Parliament House. Appaji donated 14 feet Equestrian statue.

2003 Gokhale Education Society, Nasik, which is pioneer in Management Education, felicitated Poojya Dr. Appaji and awarded "Punya Shlok Shiva-Parvati Adhyatmik" Award at its Nasik Campus.

2004 "Kiran Prabha" Awarded by Saheli's Slum Children and Women Development Association, Bangalore, a Christian Organization.

2006 "Kannada Veera -2006" Awarded by Kannada Sainya of Gulbarga

2007 Swara Madurya Sangeet Academy, Awarded "Kala Poshak" Award to Poojya Dr. Appaji.

CONTRIBUTIONS TO EDUCATION

Institutions Run by Sharnbasveshwar Vidya Vardhak Sangha, under the leadership of Poojya Dr. Sharnbaswappa Appaji

- In all there are 50 Institutions run by our Sangha in three districts - Gulbarga, Bidar and Yadgir of the backward Hyderabad-Karnatakas Area
- Out of the total Institutions about 10 Institutions are exclusively for women

Poojya Appaji's concept of education is based on Kayaka Dasoha Philosophy

"No religion is greater than service. Teaching & Learning not only for the sake of livelihood but also for welfare of others, thinking that serving humanity is serving god."

1903	Sharnbasveshwar Vidya Vardhak Sangha, Gulbarga	221076
1918	Sharnbasveshwar Public Library, Gulbarga	
1934	Mahadevi Girls High School,Gulbarga	9980767699
1949	Sharnbasveshwar Composite Pre-University College,Gulbarga.	220046
1956	Sharnbasveshwar College of Science, Gulbarga.	221941
1956	Sharnbasveshwar Independent P.U. College of Science, Gulbarga.	273385
1957	Sharnbasveshwar College of Arts with PG Course in Fine Arts, Gulb.	220675
1961	Sharnbasveshwar College of Commerce, Gulbarga with Post-Graduate Diploma Course in Business Management	220673
1963	Institute of Advance Studies in Soical Sciences Akhila Bharat Anubhava Mantapa Gulbarga	220170
1967	Sharnbasveshwar Residential Public School,Gulbarga	221821, 220738
1968	Doddappa Appa IAS Training Institute, Gulbarga	220673
1969	Sharnbasveshwar Printing & Publication Division.	290012
1971	Godutai Doddappa Appa Pre-University College for Women, Gulbarga.	220835
1973	Godutai Doddappa Appa Arts & Commerce College for Women, Gulb.	220835
1978	Sharnabasveshwar Granthvishwa Vidyanilaya, Gulbarga	220170
1996	Sharnbasveshwar College of Business Management (BBM) Gulbarga.	220673
1998	Doddappa Appa Institute for Master of Business Management (MBA), Gulbarga.	223367
1999	Doddappa Appa Institute for Master of Computer Application (MCA), Gulbarga.	241395
1999	Doddappa Appa Residential PU Science College Gulbarga.	290009, 220046
1999	Muktambika Residential Independent PU Science College for Girls Gulbarga	231192
2001	Godutai Doddappa Appa BCA College For Women,	220835
2001	Muktambika Residential BCA College For Women,	224835
2001	Doddappa Appa BCA College, Basavakalyan	252970
2001	Sharnbasveshwar BCA College, Gulbarga	223367
2002	Appa Institute of Engineering & Technology,	242688
1967	S.S.K. Basaveshwar College Arts & Science, Basavakalyan	250331,251970
2004	Muktambika Residential BBM College, Gulbarga	224835
2004	Sharnbasveshwar BBM College, Basavakalyan	252970
2004	Godutai College of Education, (B.Ed.) Gulbarga	220835
2004	Sharnbasveshwar Englsih Medium College of Education (B.Ed.) Gulbarga	223367
2004	Godutai D.Ed. College for Women Gulbarga	273382
2007	Master of Tourism Administration (M.T.A) 5 Year Integrated course only oneiIndividual institution of this kind in this division.	250955
2007	Master of Tourism Administration (M.T.A) 5 Year Integrated course only one individual institution of this kind in this division.	250955
2011	Godutai Engineering College for Women, Gulbarga	
Dist. Yadgir		
2010	Veerappa Nisty Engineering College, Shorapur Dist. Yadgir	(08443) (O) 292001
	Basavakalyan Dist. Bidar	
1967	S.S.K. Basaveshwar College of Arts & Science	08481-250331, 251970, 252970
2001	Doddappa Appa BCA College Basavakalyan	
2004	Sharnbasveshwar BBM College Basavakalyan	
2004	Sharnbasveshwar D.Ed. College Basavakalyan	
2004	Doddappa Appa College of Education (B.Ed.) Basavakalyan	
2005	Komalatai Science & Commerce P.U. College,Basavakalyan	
2006	Sharnbasveshwar Residential Public School, Basavakalyan	

Vocational Diploma Courses in Our Institution

1) Clothing and Embroidery
2) Automobile
3) Computer Technology
4) Printing and Book Binding
5) Radio and TV Servicing
6) Electrical Wiring & Servicing of Electrical appliances.

Poojya Dr.Sharnbaswappa Appaji, Mahadasoha Peethadhipathi, Sharanabasaveshwar Samsthana, Gulbarga, seen in the company of a galaxy of national leaders-Hon'ble A.B.Vajpayee, Prime Minister of India, Hon'ble Dr.A.P.J. Abdul Kalaam, President of India, L.K.Adawani, Home Minister and Smt. Sonia Gandhi, UPA Chairperson, while unveiling the equestrian statue of Lord Basaveshwara at the 9th gate of Parliment House, New Delhi, on 28th April, 2003.

In order to commemorate the installation of the statue, and propagate the values and ideals fondly cherished by Basava and other Sharana's, on this occasion, Appaji contributed Rs.50 lakh towards an estimated corpus fund of Rs. 2 crore for conducting annually the National and International Conferences and Seminars at New-Delhi.

Vocational Subjects Sponsored by UGC

1) Instrumentation Technology
2) Industrial Chemistry
3) Non Conventional Energy
4) Functional English
5) Functional Hindi
6) Principles & Practices of Insurance
7) Early Childhood care & education

SHARNBASVESHWAR RESIDENTIAL PUBLIC SCHOOL

* Every year about 300 students grab free medical & dental seats on CET Karnataka merit
* Also about 500 students get free Engineering & IIT seats on CET Karnataka merit
* In 2004-05 our public school student Sangamesh J. Mise got FIRST RANK in CET, Govt. of Karnataka

This school is crafting down the new feature, hope and cravings for the young sledging boys and girls by way of disseminating knowledge. Every year this school alone sends out students to medical and engineering college in several hundreds. It is estimated that one engineering and one medical college, could be run exclusively by the students of this school, that too on merit base, with its glorious present the school indeed promises to be the bed rock of quality education and source of inspiration and promise. The luster and sheen of the school shall never be wiped out due to its indelible marks and hoary of legacy today. Studying in this school has become a matter of pride and prestige for the elite of the region rushing in to admit their wards for its brilliant academic activities and achievements. It belongs to the prestigious group of sixty public schools in the country.

Appa Institute of Engineering & Technolgy

Established in 2002

One among India's top 100 Best Engineering Institutions-2010

M. Tech	Computer Science
B.E.	Mechanical, Electronics & Communication Information & Computer Science
MBA	Finance, Marketing, Human Resource

Veerappa Nishty Engineering College

Shorapur, Dist Yadgir-585 224

The only Engineering College in Yadgir District

B.E.	Computer Science, Electronics & Communication Civil, Electrical & electronics

Opening in July 2011:
Godutai Engineering College for Women

The first batch results of our students topped the entire Gulbarga division comprising 5 districts. Our students are placed in the world's top IT & ITES industries like IBM, TCS, Infosys, Wipro,HCL, Mindtree, Carritor, Siemens, Globe Edge, Accenture, Robosoft, Mahattan & Tech mahindra etc.

The institute started with three branches ECE, CSE, & ISE with 180 students in time it has grown in to a huge campus with six branches including Mechanical Engineering and two PG Courses MBA & M. Tech in Computer Science with total intake of 450.

DODDAPPA APPA INSTITUTE OF MBA

Poojya Dr. Sharnbaswappa Appa proclaims, 'individuals institutions, industrial and business development very much depends on level of both private and government, organisations and economic and management skills. Acquired by the very few management institutions that are fulfilling the requirements of the nation, in providing required kind of management education. Our aim is to develop this management institute in line with top most Management Institutions of India and abroad.'

In this direction, Dr. Appaji has taken interest in introducing the much required Master of Business Administration Course at Doddappa Appa Institutte of Master of Business administration. Realizing the growing importance of Business and Business Management. Poojya Dr. Appaji has started unique structure of Business Education with the goal to impart complete business education from under graduate level including Bachelor of Business Management to Masters Programme in Business Administration. In whole state, our institute is the only of its kind, offering courses which are complimentary to each other. Since the last 41 years an independent Commerce College is being run by the Sangha.

Our MBA institute started in the year 1998 which is run under the aegis of Sharnbasveshwar Vidya Vardhak sangha, Gulbarga, approved by AICTE New Delhi & affiliated to Gulbarga University, Gulbarga.

As per the Dalal Street-India's best Business School Survey 2007, our institute is the one among Top 100 and Ranked 'B' as per Business India Best Business School survey 2006.

There have been many innovations in teaching methodology in the recent past, especially in higher education more so in high technical and management education, but the essence of philosophy of our institution has remained as it was enunciated by Poojya Dr. Sharnbaswappa Appa. Students may acquire great knowledge which may or may not be used by them in their life but the kind of education imparted in our institution lasts forever, which is more rooted in encouraging our students to be self reliant, inquisitive and positive thinking governed by great tolerance. The education that we impart gives the students enormous scope for independent thinking, writing, speaking and absorbing the differences they confront in the society. The knowledge acquired without subjecting it to enquiry has no relevance. Hence we infuse the spirit of enquiry into the minds of young students which will certainly take them to a better position when confronted with crisis. We not only empower the students but see that their inherent strengths are tapped and nurtured and further make them to sustain them forever. It is a well accepted fact that the prosperity of the nation rests on the quantum of research undertaken with the available resources, we strive to emphasize this in our institution.

SHARNBASVESHWAR COLLEGE OF MASTER OF TOURISM ADMINISTRATION (MTA), GULBARGA

There shall be a five year integrated semester course leading to Master of Tourism Administration in the faculty of Commerce with the objective of preparing Graduates for career entry, Mid-Level Management, and Marketing positions in different organisations, providing tourism services at local, regional, state, national and international levels. Tourism of Integrated Marketing, destination, products, and services, and the management and the marketing of special events, conferences and meetings, expositions, festivals, and also to groom them as entrepreneurs.

MUKTAMBIKA COLLEGE OF BBM AND BCA FOR WOMEN

Run under the aegis of Sharnbasveshwar Vidya Vardhak Sangha, Gulbarga & Affiliated to Karnataka State Women's University, Bijapur

Our Institute is a household name in North Karnataka, particularly in the field of education. In the year 2001 BCA was introduced. The moment the Karnataka State Women's University, Bijapur, introduced the BBM programme in 2004, Sharnbasveshwar Vidya Vardhak Sangha, Gulbarga. A leading educational trust in Karnataka and took the earliest opportunity for women.

It is a testimony for the importance being given to quality of the education in this institute, at the same time not sacrificing the other co curricular and extra curricular activities that add value to the high level of academics.

Highly qualified, experienced and dedicated faculty, always willing to exploit their talents, is the cause for the heights the institute has scaled. Today, the world has become a platform a global competition, where quality speaks and performance ensures growth. The rapid advancement in technology and work culture, have given emphasis for specialised courses like BBM and BCA to cater the requirements at its best to the corporate demands. This college has many university rank holders to its credit.

Mahatma Gandhi, the father of the nation and a humanist to the core once said "Real education consists in drawing the best out of you. What better book can there be than the book of humanity". And true to this saying the Peethadhipati of the Sharnbasveshwar Samsthan and President of Sharnbasveshwar Vidya Vardhak Sangha, Poojya Dr. Sharnbaswappa Appa has dedicated his life to spreading the light of knowledge with a human touch to children in the educationally backward Hyderabad Karnataka region. A visionary educationist and a philosopher Poojya Dr Appji was instrumental in widening the scope of activities of the Sharnbasveshwar Vidhya Vardhak Sangha, the premier educational institution running chain of educational institutions including public school, engineering, management, and tourism administration colleges in the region.

Dr. Appa has judiciously added the human touch and professionalism in running the chain of reputed schools and colleges churns out thousands of creamy layer of students who have spread out throughout the country in pursuit of higher knowledge in reputed institutes and centres of higher studies.

Library Building

SHARNBASVESHWAR PU COLLEGE OF SCIENCE

With the divine grace of Lord Mahadoshi Sharnbasveshwar and the divine blessings and patronage of Lingaikya Poojya Doddappa Appaji and withbenign blessings "VISION AND MISSION" of the revered President Philosopher and Compassionate Scientist of our institution and Mahadosha Peethadiapati of Sarnbasveshwar Samsthan, His holiness. Poojya Dr. Sharnbaswappa Appaji. Our Science College has contributed many eminent doctors, engineers, scientist, teachers, I.A.S. officers……., to the nation since 50 years from his backward area i.e. Hyderabad Karnataka region. By providing an excellent system of scientific education Sharnbasveshwar institutions created history in the annals of MAN-MAKING Education in India. From 2005.06. Sharnbasveshwar Independent Pre-university Collage of Science, Gulbarga is giving more importance to pre-university Science Course and an Intensive CET coaching from P.U.C. first year itself.

PUC Science Course: 1) Physics, Chemistry, Mathematics and Biology (PCMB) 2) Physics, Chemistry, Mathematics and Computer Science (PCMCs) 3) Physics, Chemistry, Mathematics and Electronics (PCME)

MUKTAMBIKA RESIDENTIAL PU COLLEGE OF SCIENCE FOR GIRLS

With the vision and foresight of Poojya Dr. Sharnbaswappa Appaji a new Science College called "Muktambika Residential Independent PU Science College for Girls" has been started at Gulbarga.It has the resolution to move ahead of the revolution that is taking place in the areas like engineering, electronics and information technology and medicine. Appaji at the first instance has aptly decided to offer Science education with the options.

Library and Computer Lab

the millennium requires a manager with computer skill and a broad vision. The institute has set up a well-equipped computer centre, in 50 computers connected to LAN and all the computers are Pentium IV with CD-ROM and multimedia. The Institute has planned to maintain the computer student ratio 1:2, faculty and students can make round-the-clock access to the latest developments in the business world and research work carried out all over the world on various IT and Management aspects through internet and e-mail facilities as all the computer are connected to a high speed Broadband (Dataone) @ 1Mbps.

Our Library has sufficient collection of books covering various areas of managements, economics, autobiographies, encyclopedias etc. The library subscribes nationals and international journals and Indian business magazines besides national news papers. Also our library stock statistical data and annual reports of industries, project reports by students and faculty members and back volumes of journal. The library also maintains press clippings on related subject. Photo copy facility is also available. Library follows open access system under which student can choose any book for reading and well furnished reading room is provided for this purpose. Students are permitted to draw sufficient number of books for home study. Internet facility is provided.

Hostel

GODUTAI ARTS AND COMMERCE COLLEGE FOR WOMEN

ABOUT COLLEGE :

With devine grace of Lord Mahadasohi Sharnbasveshwar and the devine blessings and patronage of Lingaikya Poojya Doddappa Appaji, and with benign blessings, 'Vision and mission' of the revered president-philosopher and the compassionate scientist of our institution and Mahadasoha Peethadipati of Sharnbasveshwar Samsthan. His holiness, Poojya Dr. Sharnbaswappa Appaji, Sharnbasveshwar Vidya Vardhak Sangha's institutions with almost all disciplines contributed many intellectuals such as doctors, engineers, scientists, scholars teachers, administrators, managers, leaders, IAS officers, to the nation since 100 years from this backward region i.e., Hyderabad Karnataka region. By providing the most traditional-modern and 'Scientific education', Sharnbasveshwar institution headed by Poojya Dr. Appaji created a revolution in the History of MAN MAKING EDUCATION in India. From 2005-06, Godutai College of Education for Women, Gulbarga which is founded by Poojya Dr. Appaji in the year 2005, is committed to contribute THE BEST TEACHERS for 'the nation building task' of Indian democratic republic and to protect justice, equality, peace, unity and integrity of mother India.

GENISIS OF THE COLLEGE :

Foresigntness and inner drive have made Sangha to commit itself to the cause of women's education. Realizing the urgent need of women and their importance to the enrichment of family and society in all the fabrics, Mahadevi Girls School was started way back in the year 1934. Similarly number of schools and colleges have been started for the emancipation of women and fostering and nurturing them.

Gudutai Doddappa Appa Arts and Commerce College for Women started in June 1973 in fond memory of Matoshri Godutai and pay her deepest respect and obi-science by way of giving higher education of par excellence to women and empower them to live independently with enlightenment vocation to pursue.

The newly built imposing edifice of the college in connoisseur's delight and an architectural extravaganza. Being situated on a lake side, it has a sprawling spiritual campus rendered with aesthetically laid lawns and flower bearing nurseries and plants. It evokes a profound sense of contentment.

BACKGROUND OF THE AREA

Hyderabad-Karnataka Area

The Hyderabad-Karnataka area comprises of six districts namely Gulbarga, Bidar, Raichur, Yadgir, Bellari and Koppal. This area was under the Nizam Dynasty of Hyderabad for a very long period, even after independence until 1948. Sardar Vallabhai Patel the then Hon. Home Minister of India, freed this area from the Nizam's. Hyderabad using force and merged with the State of Mysore and later it became Karnataka.

Since this area was not the part of original Mysore State, it remained neglected by the Hyderabad Nizam's Dynasty for a very long time and as well as by the State of Karnataka. The Nanjundappa Committee which was constituted by the Govt. of Karnataka, prepared a report which reflects the true backward status of this area.

GODUTAI COLLEGE OF EDUCATION FOR WOMEN

Our (B.Ed.) Institution is recognised as one of the best and noted colleges of education for the unique, excellent and value based education. It also aims to imbibe "teacher-trainees" with an attitude of positive thinking, to develop DASOHA CULTURE, human values, life skills, democratic values...., etc. The institution also has mission to foster creativity and practically in the process of 'true teaching' and 'true learning', so that 'the teacher-trainees' acquire creative and practical skills to compete the rapid changing and most challenging world. Our B. Ed. College is housed in a big, spacious and BEAUTIFUL BUILDING situated in the divine environment of Lord Sharnbasveshwar shrine campus titled 'Matru Jnyan Mandir' which bears the name of 'the great mother' Matoshree Godutai Doddappa Appaji.

The education that we impart gives the students enormous scope for independent thinking, writing, speaking and absorbing the differences they confront in the society. The knowledge acquired without subjecting to enquiry has no relevance. Hence we in face the spirit of enquiry in to the minds of young students which will certainly take them to a better position when confronted with crisis. Self discipline, independent thinking writing and speaking are the corner stone's of our institution on which the life of students is built. The faculty makes all out efforts to stimulate intellectual honesty, sincerity, hard working among the fellow students, as our students live in a rich cultural environment.

ONGOING PROJECTS

- Two New technical institutions of B.E. courses one exclusively for women An investment of Rs.12 crores till date
- Three Public Schools in most backward areas like, Shorapur, Basavkalyan & Bidar Investment of Rs. 3 crore.
- Six New PG courses, 3 M Techs, MBA. M. Sc. & M. Ed. Investment of Rs. 5 crores

Research Center with facilities for doing research in the areas of Physical Sciences, Mathematics, Computer Science, Information Technology, Commerce & Management, Tourism, Literature & Languages, Social Sciences, Economics, Political Science, Journalism & Interdisciplinary subjects.

FUTURE PROJECTS

- Medical College along with a 500 plus bed hospital at Gulbarga, initial investment of Rs.100 crore.
- Hotel Management & Catering Technology institution along with a most modern star hotel at Gulbarga : Initial investment of Rs. 30 crore.
- Five countries foreign tour for the students & staff of MTA

BACKGROUND OF THE SANGHA

Sharnbasveshwar Vidya Vardhak Sangha

Sharnbasveshwar Vidya Vardhak Sangha established in the year 1903 by the 6th Mahadasoha Peethadhipati of Sharnbasveshwar Samsthan, Gulbarga with its first school housed in Dasoha Mahamane - where Saint Sharnbasveshwara lived. In 1918 Poojya Doddappa Appa the 7th Mahadasoha Peethadipati and the father of Poojya Dr. Sharnbaswappa Appa, established the Sharnbasveshwara Public Library and started creating more educational institutions. In 1934 the first girls school was started by Poojya Doddappa Appaji. In 1983 Poojya Dr. Sharnbaswappa Appa became the 8th Mahadasoha Peethadhipati of Sharnabasveshwar Samsthan and the President of Sharnbasveshwar Vidya Vardhak Sangha.

Feats at university level : All the institutions of the Sangha, run on Dasoha philosophy of education, have reached milestones in their our right. There are several hundred ranks, put together bagged by different institutions of the Sangha at university level. There are instances of all the ten university ranks bagged by our institutions (Godutai Degree College) Every year our institutions of BBM, BA, B. Com. MBA, MCA, B.Ed. have made it a habit of bagging at least one third of the university ranks such a stupendous out put of academic achievements become education savvy students. The student of our Sangha have been winning prizes at National level competitions be it yoga, Quiz, Science inodels, management events, Journalism events like, poster making & page making for instance The Godutai Degree College for women, has been winning the overall championship in the youth festival, continuously for five times and they are also the chess champions at the Zonal level for seven times bagging medals and trophies seems to be a normal activity in these institutions.

CONTRIBUTIONS TO THE SOCIETY

SECULAR SYNCRONIZATION - FUSING SECULARISM

Poojya Dr. Appaji, the finest exponent of Dasoha philosophy, is a grace abounding is a visible force and form of Mahadasoha This preceptor believed to be the reincarnation of Sharnbasveshwar is bestowed upon abundantly, all accumulated knowledge of 12th century Sharana's. He carries the wisdom of all his predecessors. He is the lineage holder of traditions and Dasoha Philosophy.

This has given a great impetus to him in unifying and fusing the spirit of all religions like Hindusim, Buddism Islamism, Christianity and all other major religious of the world This purshottama knows the art of living because he knows the art of giving He is a Dasohi for excellence His attainment of unparalled equanimity in worldly life and spiritual life has made us place him in the galaxy of hallowed Shivasharana's. He is a paragon of gods creation He is a fine blend of human and divine that gives him unarguably the first place in the heart of people of all the religious. Though he speaks less, but speaks powerfully. He has a genuine concern for humanity that indeed empowers him to attract people from different faiths this secular thread flows in his blood and found in his activities that is why he is a first blend of all the secular credentials.

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