

*Extra links that we couldn't fit in this month's newsletter...*



## What's Emerging

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### **Reid Hoffman on Philanthropic movements on the web**

Hoffman thinks that the internet, which is scalable and low-cost, is the optimal platform for cause-based organizations. The web is more about people than technology, Hoffman asserts. [Read more...](#)

### **Aid agencies 'must use new tools'**

The "crowd-sourced" data that comes from victims of natural disasters and conflicts is now a crucial part in disaster management, says a new report. [Read more...](#)

### **CitiSense: Cellular environmental monitoring**

CitiSense, a cell-phone based sensor network system, has won a \$1.5 million grant from the National Science Foundation to develop and deploy hundreds of small environmental sensors carried by the public in San Diego. [Read more...](#)

### **Top author shifts e-book rights to Amazon.com**

Stephen R. Covey, one of the most successful business authors of the last two decades, has moved e-book rights for two of his best-selling books from his print publisher, Simon & Schuster, a division of the CBS Corporation, to a digital publisher that will sell the e-books to Amazon.com for one year. [Read more...](#)

### **Suppliers envision a car that competes with the smartphone**

As you back out of your driveway, your navigation system builds a route to the lakeside cabin you've rented for the weekend. Thanks to an app you've downloaded that contains the best driving roads as suggested by other users, you'll be forgoing the highway for a fun, twisty route. From the passenger seat, your spouse turns on a few lights in the house, cues her Clay Aiken Pandora channel, and then navigates to her favorite blog. Your daughter, sitting in the back seat, has already donned her wireless headphones and is glued to the last 15 minutes of the latest "Glee" episode, which she had been watching on your couch just a minute ago. Next to her, your son has loaded a game of Tetris on his seatback screen to challenge his best friend who's competing from a laptop fifteen miles away. This is the future of in-car connectivity and it's coming to vehicles in the next two to three years, according to a partnership of companies that hope to supply the technology to automakers. [Read more...](#)

### **Scientists decode entire genetic code of cancer**

In a major step toward understanding cancer, scientists have now cracked the genetic code for two of the most common cancers. This marks just the beginning of an international effort to catalog all the genes that go wrong among the many types of human cancer. [Read more...](#)

### **Diabetes cases to double and costs to triple by 2034**

In the next 25 years, the number of Americans living with diabetes will nearly double, increasing from 23.7 million in 2009 to 44.1 million in 2034. Over the same period, spending on diabetes will almost triple, rising from \$113 billion to \$336 billion, even with no increase in the prevalence of obesity, researchers based at the University of Chicago report in the December issue of Diabetes Care. [Read more...](#)

### **Cheap gas for iPhone tracks gas prices so you can fuel up for less**

Cheap Gas! determines your location then scans the GasBuddy.com database to pull up information on what gas stations are near you and what they're charging for fuel. You can sort by price or distance (handy if you're already driving on fumes), and also perform searches by zip code. Once you find a price you like, the app maps out a route on how to get there. [Read more...](#)

### **Artificial red blood cells for drug delivery**

In research published in the Proceedings of the National Academy of Sciences, a group specializing in drug delivery has found a way to create biodegradable, biocompatible particles with the size, shape, and flexibility of red blood cells. The group believes these artificial cells might be particularly effective not just for carrying oxygen but also as therapeutic and imaging agents. [Read more...](#)

### **Dark matter discovered: Scientists believe they have found elusive particle that makes up 90% of Universe**

Physicists have detected a particle of dark matter for the first time in human history, a number of U.S. laboratories announced today. Should the findings be confirmed it will have an Earth-shattering effect on our understanding of how galaxies form. [Read more...](#)

### **Fake platelets to stem blood flow**

Scientists have developed artificial platelets to enhance the natural process of blood clotting, reducing the risk of fatal blood loss on the battlefield and in the emergency room. [Read more...](#)

### **Mobile phones become essential tool for holiday shopping**

The mobile phone is quickly becoming Santa's biggest helper. Powerful software applications for devices like the Apple iPhone are making it easy for bargain-hunting consumers to see if another retailer is offering a better deal on a big-screen HDTV or pair of shoes and to use it to haggle at the cash register. [Read more...](#)

### **Android market grows up, hits 20,000 apps milestone**

AndroLib has been chronicling the publication of all free and paid apps since Android was introduced, so it's the closest thing to getting a confirmed number at this point. [Read more...](#)

### **SmartPlanet: Nanotechnology to end insulin injections for diabetics**

Insulin injections may soon be a thing of the past for diabetics thanks to nano-technology. At UCSF Professor of bioengineering, Tejal Desai, implants millions of pancreatic cells that secrete insulin into tiny capsules that can be implanted into the body in an effort to create an artificial pancreas. When blood sugar flows inside the capsule, it stimulates the cells to produce insulin to control sugar levels. [Read more...](#)

### **New drive to harness wave power**

In the turbulent waters off the shores of Orkney, in the far north of Scotland, an array of bizarre machines is being deployed in a drive to harness the power of the sea. The European Marine Energy Centre at Stromness is playing host to nearly a dozen experimental devices designed to capture the energy of the tides and the waves. [Read more...](#)

### **City of Manor launches Manor Labs to crowdsource innovative ideas**

Manor Labs is a platform that allows individuals the mechanism to contribute new ideas and solutions for existing problems. Instead of constricting the innovation process to just agency employees, the City of Manor allows anyone to participate regardless of where they live. The benefit to the end-user is that they are rewarded with "Innobucks" for their participation in the innovation process. These "Innobucks" can be traded in for real products donated by local companies and partners, which provides users a tangible benefit for their participation. [Read more...](#)

### **Intel: Chips in brains will control computers by 2020**

By the year 2020, you won't need a keyboard and mouse to control your computer, say Intel Corp. researchers. Instead, users will open documents and surf the Web using nothing more than their brain waves. [Read more...](#)

### **Charities criticize online fund-raising contest by Chase**

JPMorgan Chase & Company is coming under fire for the way it conducted an online contest to award millions of dollars to 100 charities. At least three nonprofit groups — Students for Sensible Drug Policy, the Marijuana Policy Project and an anti-abortion group, Justice for All— say they believe that Chase disqualified them over concerns about associating its name with their missions. ***Paul Higgins: Just shows that you have to be careful when ceding control to voting systems - you need to make sure you're comfortable with the outcomes being determined by someone else because the transparency of these systems will cause a backlash if you try and interfere after the fact.*** [Read more...](#)

### **Exxon, DNA pioneer join on algae biofuels**

ExxonMobil is teaming up with the biotech research company run by genomics pioneer Craig Venter to produce algae-based biofuels. The world's second largest company announced that it will invest at least \$300 million in biotechnology research with Venter's Synthetic Genomics Inc to help develop biofuels made from algae, as it looks to diversify its energy portfolio. [Read more...](#)

### **Israeli organ donors to get transplant priority**

Israel is to become the first country to give donor card carriers a legal right to priority treatment if they should require an organ transplant. The law has been changed to try to boost donation rates, as there is a shortage for organs for donation. Partners and close relatives of those with signed donor cards will also move up the queue. [Read more...](#)

### **Platoon-level 'cloud' lets soldiers swap data, increases 'network lethality'**

The Army recently networked two distant infantry units together in a mobile "cloud," allowing them to trade video imagery, voice commands, text messages and other data between them as they operated, as well as with far-flung command posts. The Man-packable Network Integration Kit (M-NIK, in mil-speak) is a router and network mediator packaged with a satellite radio and other data transmitters. [Read more...](#)

### **Pioneering stem cell treatment restores sight**

A man blinded in one eye by a chemical attack as he intervened to stop a fight has had his sight restored thanks to pioneering new stem cell treatment. [Read more...](#)

### **War games**

Consumer products and video-gaming technology are boosting the performance and reducing the price of military equipment. [Read more...](#)

### **Nathan Myhrvold's anti global warming scheme**

Nathan Myhrvold thinks that he has found a cheap and reliable way to solve global warming, which does not involve upending and perhaps destroying the world's economy. It involves running a hose up to the stratosphere with balloons and using that hose to pump out enough sulfur particles to dim the sun's heat just enough to counteract the effects of global warming. The estimated cost would be about two hundred and fifty million dollars. [Read more...](#)

### **Plan to 'crowdsource' federal policymaking unveiled**

Anil Dash, director of Expert Labs, a project of the American Association for the Advancement of Science, proposes to extend the crowd sourcing approach to the public policy sphere. Federal agencies, he says, could benefit from the wisdom of crowds. At the recent Supernova conference held in San Francisco, Anil spoke with David Weinberger about the possibilities. [Read more...](#)

### **With 3D bio-printer, human organs can be fabricated instead of harvested**

An Australian engineering firm has developed a three-dimensional bio-printer that could be used to fabricate organs for patients who need them. In five years, "printed" arteries could be used for open heart surgery, the companies said, with complex organs possible within 10 years. [Read more...](#)

### **Ford goes wireless**

Ford has announced the second generation of its Sync in-car connectivity system. The biggest feature of the new version: an in-car WiFi system, powered by customer's USB mobile broadband modem. Using any mobile modem (often known as an "aircard"), the new Sync system will broadcast a WiFi signal throughout the vehicle, giving WiFi-enabled computers and other mobile devices access to the Internet wherever the broadband modem gets a signal. [Read more...](#)

### **How many slices does it take to accurately judge personality and intelligence?**

Suppose your organization is interviewing candidates for an important job. Would it be better for one trusted person to have an extended interview with them, or for several people to talk to them for less time? How many people would you need to conduct the interviews? Would three be enough? Would ten be too many? If ten is good, wouldn't twenty be even better? **Paul Higgins: An interesting look at the collective wisdom of a group of very short impressions versus a more intense process. Interesting to look at it from the point of view of recruitment.** [Read more...](#)

### **Calorie restriction: Scientists take important step toward 'fountain of youth'**

Going back for a second dessert after your holiday meal might not be the best strategy for living a long, cancer-free life say researchers from the University of Alabama at Birmingham. That's because they've shown exactly how restricted calorie diets -- specifically in the form of restricted glucose -- help human cells live longer. This discovery, published online in The FASEB Journal, could help lead to drugs and treatments that slow human aging and prevent cancer. [Read more...](#)

### **How intelligent vehicles will increase the capacity of our roads**

As the percentage of computer-controlled cars on the road increases, traffic should flow smoothly for longer, says a new study. [Read more...](#)

### **The future of brain-controlled devices**

In the shimmering fantasy realm of the hit movie "Avatar," a paraplegic Marine leaves his wheelchair behind and finds his feet in a new virtual world thanks to "the link," a sophisticated chamber that connects his brain to a surrogate alien, via computer. Researchers are already using brain-computer interfaces to aid the disabled, treat diseases like Parkinson's and Alzheimer's, and provide therapy for depression and post-traumatic stress disorder. Work is under way on devices that may eventually let you communicate with friends telepathically, give you superhuman hearing and vision or even let you download data directly into your brain, a la "The Matrix." [Read more...](#)

### **Book sales end the year with a surprise**

Overall unit sales dip slightly for 2009, but adult fiction holds steady. [Read more...](#)

### **Turning a cell phone into a microscope**

Cell phone + Microscope = CellScope. Graduate students in the bioengineering lab at UC Berkeley have discovered a way to turn an ordinary cellphone in a microscope. The Cellscope can capture, organize and transmit images of blood cells, lesions and infections taken anywhere in world - a great advance for the developing world and medical imaging. [Read more...](#)

### **Carbon nanotubes show promise for high-speed genetic sequencing**

In the current issue of Science, Stuart Lindsay, director of Arizona State University's Center for Single Molecule Biophysics at the Biodesign Institute, along with his colleagues, demonstrates the potential of a method in which a single-stranded ribbon of DNA is threaded through a carbon nanotube, producing voltage spikes that provide information about the passage of DNA bases as they pass through the tube. [Read more...](#)

### **Gene rice on its way in China**

Genetically modified rice cleared for commercial sale could be growing on Chinese farms as early as next year, making China the first country to allow commercial cultivation of GM strains. The field trials required for any new variety are now under way, following official safety clearance November. [Read more...](#)

### **Using pigs to grow tomatoes with biogas**

An innovative eco-friendly pig farm of the future is the dream of a Danish pig farmer, Soren Hansen and the concept of a PhD architecture student, Nee Rentz Petersen. The futuristic two-storey building, with pigs on the ground floor and tomatoes growing above, is now about to see the light of day thanks to a consortium comprising Gottlieb Paludan Architects, AgroTech and Nee Rentz-Petersen. [Read more...](#)

### **Three billion apps downloaded from Apple's App Store**

The App Store is also a market that expands quickly. Exactly one year ago, 500 million applications had been downloaded from the store. Back then, Apple celebrated the milestone with a huge banner. Now, it's just a short announcement. [Read more...](#)

### **Spiralling skyscraper pod city for a future London**

Design team Chimera has conceived of an incredible series of spiralling skyscrapers for London modelled after the complex ecosystems created by the mangrove tree. Dubbed Mangal City, the project is an "urban ecological system" composed of modular pod capsules that shift to adapt to environmental and contextual conditions. [Read more...](#)

### **U.S. mobile web usage grew 110 percent last year; Apple dominates, Android no. 2**

The mobile Web grew 110 percent in the U.S. last year and 148 percent worldwide as measured by growth in page views, according to a new Quantcast Mobile Trends report. Even so, the mobile Web accounted for only 1.26 percent of Web consumption in the U.S. (and 0.99 percent worldwide). [Read more...](#)

### **A stimulating treatment for sleep apnea**

An implant stimulates the tongue to treat the disorder. [Read more...](#)

### **Modern life causes brain overload, study finds**

The wealth of media in modern life means the average person is bombarded with enough information every day to overload a laptop computer, a study has found. [Read more...](#)

### **Android market grows up, hits 20,000 apps milestone**

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### **The beckoning silence: Why half of the world's languages are in serious danger of dying out**

Of the 6,500 languages spoken in the world, half are expected to die out by the end of this century. Now, one man is trying to keep those voices alive by reigniting local pride in heritage and identity. [Read more...](#)

### **Scientists decode memory-forming brain cell conversations**

The conversations neurons have as they form and recall memories have been decoded by Medical College of Georgia scientists. [Read more...](#)

### **Company aims to make jet fuel from coal**

Some of the world's largest airlines - including American, US Airways, Delta and Lufthansa - have signed a memorandum of understanding to buy 500,000 barrels per month of jet fuel made from coal and petroleum coke, a refinery waste product. [Read more...](#)

### **iRobot founder's startup to develop UAVs for bridge inspection**

Formerly known as The Droid Works, and now called CyPhy Works, the company has received a National Institute of Standards and Technology (NIST) Technology Innovation Program (TIP) grant of \$2.4 million. CyPhy Works will work with researchers at the Georgia Institute of Technology to develop small, hovering UAVs equipped with video cameras and sensors. According to a press release from the company: If successful, the project will produce an advanced class of UAVs that would enable entirely novel, efficient, and relatively low-cost techniques for monitoring the health of the nation's existing civil infrastructure. [Read more...](#)

### **Rock-breathing' bacteria could generate electricity and clean up oil spills**

A discovery by scientists at the University of East Anglia (UEA) could contribute to the development of systems

that use domestic or agricultural waste to generate clean electricity. Recently published by the scientific journal, Proceedings of the National Academy of Sciences (PNAS), the researchers have demonstrated for the first time the mechanism by which some bacteria survive by 'breathing rocks'. [Read more...](#)

### **The power of pilot programs**

The always-enlightening Atul Gawande evaluates the new health-care bill's efforts (or lack thereof) to control runaway health-care costs. The bill, which has been widely criticized for its lack of significant cost reductions, proposes a few small pilot programs aimed at cost containment. As Gawande writes: "[W]here we crave sweeping transformation, however, all the current bill offers is those pilot programs, a battery of small-scale experiments. The strategy seems hopelessly inadequate to solve a problem of this magnitude. And yet - here's the interesting thing - history suggests otherwise." He goes on to compare health care reform to the agricultural reform that transformed the nation (and the world) in the early 1900's and was implemented piecemeal in a series of small experimental programs. Gawande concludes on a hopeful note: "[I]f we're willing to accept an arduous, messy, and continuous process we can come to grips with a problem even of this immensity. We've done it before." [Read more...](#)

### **Harvard, MIT researchers attempt to reverse-engineer the human brain with gaming hardware**

Researchers from Harvard and MIT have demonstrated a way to build better artificial visual systems with the help of low-cost, high-performance gaming hardware. Using graphics processing units, or GPUs - the same technology that makes your favorite video game possible to play with detailed visual graphic effects - along with a screening technique borrowed from genetics, the team is attempting to mimic the human brain's ability to process visual data. [Read more...](#)

### **More homes seen dumping landlines**

The number of households with cell phones but no landlines continues to grow, but the recession doesn't seem to be forcing poor cellular users to abandon their traditional wired phones any faster than are higher-income people. The finding, from data compiled by the federal Centers for Disease Control and Prevention, suggests that when it comes to telephone habits, peoples' decisions are affected more by age and where they live than by their economic situations. [Read more...](#)

### **Nuance launches voice-powered Dragon search app for iPhone**

Hot on the heels of the launch of their Dragon Dictation app (and a short-lived and mostly overblown privacy scandal), Nuance has just launched a second iPhone application: Dragon Search. Heralded by Nuance as the "fast, accurate, and smart way to search online content on your iPhone", Dragon Search allows iPhone users to search across Google, Yahoo!, Bing, iTunes, Twitter, Wiki, or YouTube by speaking their search terms. **Paul Higgins: We featured the first Dragon application in an article we published on smartphones in The Age in Melbourne: <http://www.theage.com.au/business/running-your-business-from-your-back-pocket-20091214-kscd.html>. [Read more...](#)**

### **Texting now more popular than cell calls**

Americans Punched Out 110 Billion Text Messages Last Year, Census Data Shows [Read more...](#)

### **You'll buy more from web ads that know how you think**

Now websites can be primed to "read" potential customers from the way they interact with web pages. It uses a program called the Bayesian Inference Engine running unobtrusively on a user's computer to monitor the person's click patterns and so to determine how they respond to different textual and visual cues. This is then used to categorise the user's cognitive style. [Read more...](#)

### **Augmented reality apps for the iPhone**

Augmented Reality apps are starting to appear in the App Store and the segment has a ton of potential with the advancements in GPS and camera technologies on smartphones like the iPhone. Augmented Reality (AR) combines real-world and computer-generated data in real-time. [Read more...](#)

### **Device spells doom for superbugs**

Researchers have demonstrated a prototype device that can rid hands, feet, or even underarms of bacteria, including the hospital superbug MRSA. The device works by creating something called a plasma, which produces

a cocktail of chemicals in air that kill bacteria but are harmless to skin. [Read more...](#)

### **YouTube lets anyone create their own iReport**

If you watch CNN, you've probably seen iReports – videos submitted by users around the world about news events via the company's citizen journalism website. The site played a key role in helping the network obtain footage during the Iran election crisis. Now, YouTube is letting anyone launch their own iReport-type site through a program they're calling YouTube Direct. [Read more...](#)

### **Breast regrowth procedure trialled for mastectomy patients**

Human trials to begin of surgical treatment that could allow women to regrow their breasts after a mastectomy. [Read more...](#)

### **New weapon in battle of the bulge: Food releases anti-hunger aromas during chewing**

A real possibility does exist for developing a new generation of foods that make people feel full by releasing anti-hunger aromas during chewing, scientists in the Netherlands are reporting after a review of research on that topic. Such foods would fight the global epidemic of obesity with aromas that quench hunger and prevent people from overeating. Their article appears in ACS' Journal of Agricultural and Food Chemistry. [Read more...](#)

### **The US air force's holiday wish list: 2500 PlayStations**

The US Air Force Research Lab recently put out a request for 2200 Sony PlayStation 3 games consoles. The military researchers want to wire them up with the 300 or so they already have to make a type of supercomputer never seen before. But it won't be the ultimate gaming system to teach pilots how to blast enemies out of the sky. Instead it will analyse radar and simulate the workings of brains. [Read more...](#)

### **How high will the seas go in a warmer world?**

Even as negotiators scramble to salvage an agreement at the foundering Copenhagen climate talks, a new study in this week's issue of Nature shows that the consequences of inaction on reducing emissions could be more severe than anyone thought. [Read more...](#)

### **Sky snake**

Flexible blimps are bending the rules on UAV design. [Read more...](#)

### **Living in big cities 'makes you miserable'**

Living in big cities makes you miserable and people are actually more happy away from urban areas, claims research. [Read more...](#)

### **Why Britain faces a bleak future of food shortages**

Britain faces a 'perfect storm' of water shortage and lack of food, says the government's chief scientist, and climate change and crop and animal diseases will add to future woes. Science is now striving to find solutions. [Read more...](#)

### **Error: Insufficient enthusiasm**

**Paul Higgins: Good post on technology adoption.** [Read more...](#)

### **World's oldest known DNA discovered**

It won't make Jurassic Park a reality, but scientists have discovered 419 million-year-old DNA intact inside ancient salt deposits. The genetic material, the oldest ever found, belongs to salt-loving bacteria whose ancestors may have been among the first life forms on Earth. [Read more...](#)

### **Robotic knee helps perfectly healthy runners run even better**

Attention cyborg wonks and lazy people: Japanese scientists at Tsukuba University have created a motorized knee that you can attach to your leg to increase your muscle power and running speed. [Read more...](#)

### **More people around the world get their news online from Google News than CNN**

In November, 2009, according to comScore, Google News attracted 100 million unique visitors worldwide, making it a larger news site than CNN (66 million) or the combined properties of the New York Times (92 million). But do you know who is even larger? Yahoo News, with 138 million unique visitors worldwide. [Read](#)

[more...](#)

### **Autism numbers are rising. The question is why?**

One in 110 American children are considered to fall somewhere along the autism spectrum, according to the latest report released by the federal government. The new figure, which was released initially in October, comes from the most comprehensive set of data yet on the developmental health of eight-year-olds. [Read more...](#)

### **Yellowstone's plumbing exposed**

The most detailed seismic images yet published of the plumbing that feeds the Yellowstone supervolcano shows a plume of hot and molten rock rising at an angle from the northwest at a depth of at least 410 miles, contradicting claims that there is no deep plume, only shallow hot rock moving like slowly boiling soup. A related University of Utah study used gravity measurements to indicate the banana-shaped magma chamber of hot and molten rock a few miles beneath Yellowstone is 20 percent larger than previously believed, so a future cataclysmic eruption could be even larger than thought. [Read more...](#)

### **Air Force's next-gen bomber will be more spy plane than strike aircraft**

It turns out the Air Force's next-gen bomber really isn't much of a bomber at all. While the next iteration of stealth bombers is still but a sketch on the drawing board, the DoD and top Air Force command know what the wars of the next century will call for: intelligence, surveillance, and reconnaissance (ISR), as well as the ability to deploy non-kinetic weapons to disrupt enemy operations, all while reserving the ability to drop the occasional ordinance -- and do it all at the same time with a single, stealthy super-weapon. [Read more...](#)

### **The physics of space battles**

Joseph Shoer is a Ph.D. candidate in aerospace engineering, studying how modular spacecraft could be assembled, and hoping that they will be the telescopes and human exploration vehicles of the future, and not for crushing the dreams of Martian colonists. [Read more...](#)

### **In 2009, netbook shipments grew 103%, revenues up 72% year over year**

Industry research and analysis firm DisplaySearch estimates notebook PC revenues to top \$109 billion in 2009, down almost 7% year over year. The company's most recent Quarterly Notebook PC Shipment and Forecast Report also shows a huge increase in the size of the netbook market, having grown its revenue share of the overall portable computer market to 11.7% in the third quarter of 2009. ***Paul Higgins: This just shows how important portability has become to people - a force that will move people primarily on to smartphones as the technology improves.*** [Read more...](#)

### **Inventor unveils hummingbird robot**

Japanese researchers say they have developed a "hummingbird robot" that can flutter around freely in mid-air with rapid wing movements. [Read more...](#)

### **Flurry: App store sees record breaking Christmas, 50% growth from November to December**

Apple rocked it this holiday season, and the early numbers are showing it. According to Flurry, the biggest mobile app analytics company, iPod Touch download volume saw a nearly 1,000% jump in downloads on Christmas Day. Overall, the App Store saw a 51% increase in downloads from November to December (downloads only increased by 15% from October to November). [Read more...](#)

### **Troubleshooters that block cancer**

Scientists have shown how a family of "limpet-like" proteins play a crucial role in repairing the DNA damage which can lead to cancer. They hope the finding could pave the way for a new type of drug which could help kill cancer cells, and promote production of healthy replacements. [Read more...](#)

### **How the brain encodes memories at a cellular level**

Scientists at UC Santa Barbara have made a major discovery in how the brain encodes memories. The finding, published in the December 24 issue of the journal *Neuron*, could eventually lead to the development of new drugs to aid memory. [Read more...](#)

### **Europe's Goce satellite probes Earth's gravity**

Europe's Goce satellite is returning remarkable new data on the way the pull of gravity varies across the Earth. Scientists say its first maps clearly show details not seen in previous space and ground measurements.

[Read more...](#)

### **Panasonic will market first Li-Ion storage battery for home use in 2011**

Panasonic will bring a home-use lithium-ion storage cell to market in fiscal 2011, making it possible for homes to store a week's worth of electricity for later use. Panasonic - along with the recently acquired Sanyo - have already test-manufactured such a battery, which could allow for more widespread deployment of eco-friendly but inconsistent modes of power generation. **Paul Higgins: There is a question here of energy efficiency versus generation systems and generation times. If the storing and discharge of energy from this system is inefficient then we need to think about the system - perhaps feeding the energy back into the grid at the time of generation is more energy wise? Of course there is then the issue of line loss, etc but smart local grids can minimise this. An interesting question of complexity - I have sent this as a question to my energy wise friend Lindsay Leveen.** [Read more...](#)

### **Out of the Blue, DARPA seeks means to manipulate lightning**

Lightning causes more than \$1B/year in direct damages to property in addition to the loss of lives, disruption of activities (for example, postponement of satellite launches) and their corresponding costs. A better understanding of the physics underlying lightning discharge, associated emissions, and related processes (for example, tribocharging in the clouds) may lead to revolutionary advances in the state of the art of lightning protection. [Read more...](#)

### **The next decade could see the US lose its title as the world's technology headquarters**

All major technology innovation in recent history has emerged from the US, supported by the world's finest education, innovation and commercialisation industries. The rise of internet giants such as Google, eBay, Amazon, and Facebook has been well helped by the US's control over the regulation of the internet addressing system over the past 11 years. However, this is poised to change after a major shake-up of ICANN's management structure in late 2009, when the US gave up control. ICANN also agreed to introduce internet addresses that could be fully written in non-Latin characters. **Paul Higgins: I think the importance of this is being overstated, that the education, financing and entrepreneurial structures are far more important.** [Read more...](#)

### **In Las Vegas, sports books in a pocket**

On a recent Sunday in the sports book at the M Resort in nearby Henderson, gamblers seeking action on professional and college football games were engaging in a much different ritual: betting through hand-held devices no larger than a smartphone. The technology, part of a new system from Cantor Gaming, a subsidiary of the financial services firm Cantor Fitzgerald, lets gamblers place bets on certain sporting events like football or baseball, tennis matches and horse races from anywhere in the casino and play other games like blackjack and baccarat. [Read more...](#)

### **Pedal brain's gadget turns your iPhone into a powerful cycling computer**

For years, runners have been able to take advantage of Nike+, a nifty accessory that lets your iPod communicate with your shoes to turn it into a personal running coach of sorts. Soon, cyclists will have access to a tool that's in the same vein as Nike+, but far more powerful. It's called Pedal Brain, and it allows your iPhone or iPod Touch to receive and interpret data from a variety of exercise devices that use the ANT+ wireless protocol. [Read more...](#)

### **Amazon e-book sales overtake print for first time**

Spare a thought for the humble hardback this Christmas. It seems the traditional gift wrapped tome is being trumped by downloads, after Amazon customers bought more e-books than printed books for the first time on Christmas Day. [Read more...](#)

### **The world spent \$112 billion on 205 million TVs this year: 69 percent were LCD TVs**

Market research firm DisplaySearch estimates in a new report that of the 205 million total TVs shipped in 2009, 140.5 million, or 69 percent, were LCD TVs (the rest were plasma and CRTs). In 2010, that percentage is forecast to rise to 78 percent for LCD TVs, when total shipments will rise to 218 million. **Paul Higgins: Call me**

***a Grinch but this is an enormous amount of money to spend on a better viewing experience while huge numbers of people live on the streets. [Read more...](#)***

### **Chilly climate for oil refiners**

Only a few years ago, a cry went up that the United States needed more oil refineries. The perceived shortage was so acute that George W. Bush, president at the time, even offered disused military bases as sites for building them. Not only did that never come to pass, but the reverse is now happening. The business of oil refining is mired in a deep crisis, with five refineries having shut down this year, including plants in Delaware, New Jersey, California and New Mexico. ***Paul Higgins: A salutary lesson in what happens in commodity businesses that have highcapital requirements. [Read more...](#)***

### **The future of human spaceflight**

Are astronauts close to extinction? [Read more...](#)

### **The geoengineering gambit**

For years, radical thinkers have proposed risky technologies that they say could rapidly cool the earth and offset global warming. Now a growing number of mainstream climate scientists say we may have to consider extreme action despite the dangers. [Read more...](#)

### **Beyond 2009: How technology may impact our daily lives**

Twenty-five years ago, making a call away from home meant finding a pay phone. The cell phone was virtually unknown. So was the Internet. Now life would be unthinkable without them. [Read more...](#)

### **Location-based ads come to augmented reality in the US**

Location-based social network Brightkite has announced that it has added what it calls the first mobile Augmented Reality advertising for U.S. markets to its AR layer in the Layar augmented reality browser. Augmented Reality (AR) is a class of technologies that place data from the web on top of a camera view of the physical world. Layar is a browser for a wide variety of AR data layers, from real-estate listings to government data to messages posted to networks like Brightkite. It is available for Android phones and was available on the iPhone until it was withdrawn from the marketplace last week due to excessive crashes. The Brightkite ads appear to be just for electronics retailer BestBuy so far, and are displayed as unique markers in your field of view when pointed towards one of the stores. [Read more...](#)

### **Aldiko startup offers e-book software for Android OS**

Over the next year, as smartphone manufacturers and wireless carriers prepare to release a batch of new phones that run Google's Android operating system, developers are scrambling to create e-book applications to support the new OS. Aldiko is a new e-book reader designed to run on the Android OS. [Read more...](#)

### **2010 gears up for explosion of 3D**

If 2009 was dominated by touch technology then 2010 looks set to be the year of 3D. 3D has been one of the biggest hits of the cinemas this year and it is likely to continue its stride into other mediums during 2010, experts agree. TV manufacturer LG wants to sell nearly half a million 3D-ready TV sets next year as the World Cup kicks off in the format. Meanwhile laptops and games consoles are also getting a 3D makeover. Acer has already released what it is claiming is the world's first 3D-capable laptop, and most agree it will be the first of many. [Read more...](#)

### **At foursquare venues, the mayor eats for free**

Foursquare the geo-location based check-in game, just announced its first venue that is combining badges and promotions. On Foursquare you get badges for checking into places. The person who checks into a place the most becomes the "Mayor." You also get promotions from restaurants and bars nearby based on your location. Now those two elements are being tied together. For instance, Blynk Organic a restaurant in Charlotte, North Carolina is the first venue to offer this promotion: Mayor eats for free! Just show us your phone after checking in to validate. 25% off egg sandwiches for all Gym Rats (Foursquare badge required). [Read more...](#)

### **CauseWorld launches: Do good deeds simply by walking into a store**

CauseWorld app users earn "karma points" when they walk into stores and check in with their cell phone. No

purchase is required at any store, and karma points can be redeemed nine predefined good causes. Big brands like Kraft Foods and Citi (both are on board) then turn the karmas into real dollar donations to those causes. Food for poor families, water in Sudan, trees in the Amazon, etc. are examples of the causes.

Here's how it works: Like foursquare and gowalla, you open the application on your phone and see local businesses (instead of showing everything around you, CauseWorld only shows businesses that you can check into for karmas). Enter the store, check in, and get the karma points offered to you. Once you've collected enough karmas you can donate them to a variety of causes. And, of course, you get badges for various activities. [Read more...](#)

### **Noninvasive technique to rewrite fear memories developed**

Researchers at New York University have developed a non-invasive technique to block the return of fear memories in humans. The technique, reported in the latest issue of the journal Nature, may change how we view the storage processes of memory and could lead to new ways to treat anxiety disorders. [Read more...](#)

### **Sex and shopping – it's a guy thing**

**Paul Higgins: The author of this article summarises some research studies which seem to show that men and women use spending and charity work as "mating" signals. That men who are interested in finding a mate will spend more money while women that are interested in finding a mate will spend more time on conspicuous charitable work:** "These nine studies nicely support the idea that much of human economic behaviour is engendered by motives of costly signalling to display our personal qualities to potential mates and other social partners. These motives are finely tuned and very specific." **Paul Higgins: Well worth thinking about but care needs to be taken when interpreting studies like this that ask people what they would do rather than observing what they actually do.** [Read more...](#)

### **Looking back in time 12 billion years with new instruments on Herschel space observatory**

An instrument package developed in part by the University of Colorado at Boulder for the \$2.2 billion orbiting Herschel Space Observatory launched in May by the European Space Agency has provided one of the most detailed views yet of space up to 12 billion years back in time. [Read more...](#)

### **Nervy repair job**

Douglas Smith mechanically stretches living nerves to grow resilient transplants. [Read more...](#)

### **Firms selling apps for simple phones**

According to data from the Nielsen Company, roughly 82 percent of cellphones in use are limited-function phones, the kind that typically sell for less than \$50 or are given away with a two-year service contract. The cellphone industry prefers to call them feature phones, to distinguish them from smartphones like the Pre or the Droid, but they could just as well be called "kinda smartphones." Sleek offerings from Samsung, LG and Motorola have attracted the attention of entrepreneurs and software companies hoping to market functions similar to those found on the iPhone. [Read more...](#)

### **Slim, large screen e-reader skiff to debut on sprint**

E-readers are likely to get hotter with the next generation of devices sporting color screens and large displays expected to launch through the year. One of the first products to announce its arrival is the Skiff e-reader, a lightweight device with a 11.5-inch full flexible touch screen that makes it the largest e-reader on the market. [Read more...](#)

### **Mobile ad impressions on Android double since October**

Mobile ad network AdMob has just released its latest stats tracking the rise of Android, and it's clear that Google's mobile platform is quickly gaining steam. AdMob writes that between October and December, the number of ad requests worldwide from Android devices increased a whopping 97% to over 1 billion ad requests. In other words, the number of requests from Android devices doubled in just two months. [Read more...](#)

### **Deadly animal diseases poised to infect humans**

Environmental disruption set to trigger new pandemics, scientists warn. [Read more...](#)

### **A helmet to prevent paralysis**

Engineers are designing a helmet that could protect the spine from serious injury. [Read more...](#)

### **November sees number of U.S. videos viewed online surpass 30 billion for first time on record**

Google Sites continued to rank as the top U.S. video property in November as it delivered 12.2 billion videos viewed with YouTube.com accounting for nearly 99 percent of all videos viewed at the property. Hulu ranked second with 924 million videos viewed (3.0 percent) followed by Viacom Digital with 500 million (1.6 percent) and Microsoft Sites with 480 million (1.5 percent). [Read more...](#)

