SteveKnode.com Mar 2011

E.I.T. Links

From "self-service" to "room service":
How Emerging Information Technology is changing the way we live

"In this new wave of technology, you can't do it all yourself, you have to form alliances."
- Carlos Slim Helu

By Steve Knode, steve@steveknode.com

Editor's Note:
Please feel free to pass on the newsletter to those interested. ***Anyone wishing to receive future editions of the newsletter, please email me at:*** **sknode@gmail.com**.

Note: This newsletter contains links found during Mar 2011, and all of the links were working at time of publication.

Remember, all links here can be found at www.steveknode.com/news_updates.htm and previous newsletters are available at: http://www.steveknode.com/newsletters.htm.

Anyone seeking more frequent updates can follow my 'tweets' via my twitter account, http://www.twitter.com/sknode

Links for this Issue

AI General

- Tech of the Future, Today: Breakthroughs in Artificial Intelligence – Excellent slideshow update on the state of AI in today's world. I think many of the applications will surprise you.
- Watson, the Computer Jeopardy! Champion, and the Future of Artificial Intelligence – Watson's defeat of its human competitors on Jeopardy has profound implications for the future of intelligent computing.

Brain

- Mind vs. Machine – In the race to build computers that can think like humans, the proving ground is the Turing Test—an annual battle between the world's most advanced artificial-intelligence programs and ordinary people. The objective? To find out whether a computer can act "more human" than a person.
- New study proves the brain has three layers of working memory – Researchers from Rice University and Georgia Institute of Technology have found support for the theory that the brain has three concentric layers of working memory where it stores readily available items. Memory researchers have long debated whether there are two or three layers and what the capacity and function of each layer is.

Chatterbots

- Quiet 'socialbot' quickly gains a following – Something for 'twitter' fans to think about---when you are chatting with other users, are you sure you're talking to a human and not a piece of software?

Data Mining/Business Intelligence

- Armies of Expensive Lawyers, Replaced by Cheaper Software – Software is also making its way into tasks that were the exclusive province of human decision makers, like loan and mortgage officers and tax accountants. Nowhere are these advances clearer than in the legal world.

Educational Technology

- The Future of Education (part 1 of a 3 part series with links to parts 2 and 3) – Online learning, which incorporates Web-based instruction, multimedia resources and the capability to support real-time and asynchronous communication, is transforming the traditional classroom into a digitally-rich, interactive and highly personalized environment.

Future

- Michio Kaku on Physics of the Future (podcast) – One of my favorite 'big thinkers', Michio Kaku, professor of theoretical physics at the City University of New York and cofounder of string field theory, describes the revolutionary developments taking place in the fields of medicine, computers, artificial intelligence, nanotechnology, energy, and astronautics.

- AT&T 1993-1994 'You Will' Ad Campaign Compilation - All 7 Ads – Amazing to see how the 'predictions' from AT&T developed in their 1993-1994 ad campaign have pretty much come true.

Genetic Algorithms

- Eureqa! Signs of the Singularity? – Eureqa is a system that uses evolutionary computing to breed equations defining laws of nature that scientists haven't been able to discover on their own. It works by stringing together simple mathematical expressions to create large banks of equations. Each equation is tested to see how well it fits experimental data.

Information Overload

- A Digital 'Magazine' With One Subscriber – Zite crawls over half a million Web domains to find specific reading material that would be of interest to you, according to your social network and/or online reading behavior. It evaluates this potential content by tracking signals (like tweets, comments, tags and sharing) from stories that indicate a certain level of social interest and momentum in the story. The result is a personalized magazine that gets more accurately targeted toward its reader the more it's used.

Innovation

- You Had a Good Run, OId Stamps: SMS Codes for Postage Coming to Europe – Sticking a stamp to the front of an envelope could become *so* last century, if a logical plan in Europe ends up spreading as far as it could. Danish letter mailers, beginning April 1st, will be able to send an SMS to that nation's Postal Service and receive a short code back, confirming that they have paid to mail a letter. They'll write that code on the envelope and then the post office machines will scan that, instead of a stamp.

Knowledge Management

- The new overlords – The authors argue that mankind has at last become the first species capable of deliberately directing its own evolution. Some of this is being done to improve looks or athletic performance; other techniques are extending life or growing vital organs. Along the way the human species is being changed. There is no master plan, the authors insist, as it is "not one technology, government, company, region or discipline that is driving speciation."

Kurzweil

- Ray Kurzweil: Get Ready For A Computer In Your Brain (podcast) – Kurzweil predicts that we'll be able to make computers as small as a blood cell in about 25 years. Obviously, that would have far-ranging effects.

Manufacturing

- Navy to Build a Fleet of Robots with 3D Printers – The Navy has proposed a project to build a swarm of micro-robots with 3D printing capabilities and other high-tech features. The robots could create programmable materials, large structures and even replicas of themselves.

- 'Printing out' new ears and skin – The next step in the 3D printing revolution may be body parts including cartilage, bone and even skin.

- Scientists grow micro-machines (and "nano Jimmer") from carbon – A Brigham Young University physics student and his professor had some fun with their new method of growing tiny machines from carbon molecules. They're also building several kinds of micro-machines including actuators, switches and humidity-detecting cantilevers. Next on their agenda is to create filtration devices.

- The future of manufacturing…on two wheels – EADS, the European aerospace and defence group, has unveiled the world's first bike that uses a revolutionary new manufacturing process which demonstrates the potential to transform manufacturing around the globe. Made of nylon but strong enough to replace steel or aluminium, it requires no conventional maintenance or assembly. It is 'grown' from powder, allowing complete sections to be built as one piece.

Medical

- Improving public health one app at a time – Smart phones, cell phones and home computers are just waiting to launch the next big revolution in health care, said Robert Jarrin, senior director for government affairs at the wireless communications innovator Qualcomm Inc. Wireless mobile devices can become an ever-present link between patient and doctor.

- Long-term study finds robot surgery safe – Robot-assisted surgery to remove cancerous prostate glands is safe over the long term and has a major complication rate of less than 1 percent, according to research published by the journal European Urology.

- Robo-pharmacist readies 350,000 doses perfectly – Your doctor may still be human, but your pharmacist may soon go cybernetic. A robotic drug dispensary system at the University of California, San Francisco is spitting out oral and injected medications for all kinds of patients. The automated system has prepared some 350,000 doses without a single error, the institution says.

Military

- Army deploying 'Individual Gunshot Detector' – The Individual Gunshot Detector, or IGD consists of four small acoustic sensors worn by the individual Soldier and a small display screen attached to body armor that shows the distance and direction of incoming fire. The small sensor, about the size of a deck of cards, detects the supersonic sound waves generated by enemy gunfire and instantaneously alerts Soldiers to the location and distance toward the hostile fire.

- NASA's Global Hawk completes unmanned airborne refueling simulation, will do it for real next year (video) – Northrop Grumman's aeronautics gurus have paired together a Global Hawk unmanned aircraft with a manned Proteus ship way up in the skies with the vessels of ingenuity managing to fly in tandem at a distance as short as 40 feet. Unsurprisingly, this is the first time such intimacy has been reached between UAVs in high altitude, and the ultimate goal of having two Global Hawks doing the deed without any human intervention is said to be within reach by next year.

MISC

- Can You Beat A Computer At One Of The World's Oldest Games? – While the element of chance factors into the game's outcome, there is a key strategy successfully playing Rock, Paper, Scissors: Know thy opponent. The New York Times Rock, Paper, Scissors computer studies your moves as you play, identifying patters in your selection and

using them to predict what you'll throw at it next.

- Software Progress Beats Moore's Law – Software progress has long been accused of being the bottleneck in computer development. A report by an independent group of science and technology advisers to the White House, published last December, cited research showing that performance gains in doing computing tasks that result from improvements in software algorithms often far outpace the gains attributable to faster processors.

- Turing Award Goes To 'Machine Learning' Expert – A Harvard University professor has been awarded a top technology prize for research that has paved the way for computers that more closely mimic how humans think, including the one that won a "Jeopardy!" tournament.

Robots

- Drug-carrying robot roams through eye – A new system designed by Bradley Nelson and his team from Institute of Robotics and Intelligent Systems (IRIS) in Zurich, Switzerland, could lead to more effective drug delivery for conditions like age-related macular degeneration, a leading cause of blindness in old people.

Search Engines

- A Search Engine for the Human Body – Microsoft software recognizes organs and other structures in medical images.

Sensors

- Wearable Sensor Reveals what Overwhelms You – What do you think most stresses you out during the day? A new type of wearable stress sensor, which constantly checks for signs of anxiety, could give you a precise answer. And it might not be what you think.

- How 50 Billion Connected Devices Could Transform Brand Marketing & Everyday Life – "All devices that can benefit from connectivity will be connected," Hans Vestberg, CEO of Ericsson, said in a keynote, predicting that the world's nearly 5 billion mobile phone subscribers today will be surpassed by 50 billion connected non-phone devices in 10 years.

- Biosensors On The Fast Track – The Food & Drug Administration has teamed up with the Defense Advanced Research Projects Agency (DARPA) to help accelerate the development and approval of innovative devices for continuously monitoring biomarkers in people. Such biomarkers could serve as early warning signs of diseases—such as diabetes, cardiovascular disease, and influenza—before symptoms occur.

- Implantable sensor tracks cancer in the body – It looks like a tiny white breath mint. The little capsule is in fact an innovative tool in the battle against cancer that can track the growth of a tumour without repeated invasive procedures.

Virtual/Augmented Reality

- Awesome Augmented Reality App Could Save Librarians Hours – Miami University's Augmented Reality Research Group has developed an Android app that could save librarians a lot of time and hassle. Using the Android's camera, the app "reads" a bookshelf, and with an AR overlay, quickly flags those books that are misplaced. It will also point to the correct place on the bookshelf so the book can easily be re-shelved correctly.

Web 2.0

- NASA hosts 'Tweetups' to spread the word about its missions – As the space shuttle program winds down, NASA is turning to users of the social networking site Twitter to help document the last launches and to spread the word about the agency's future endeavors.

- Agriculture to shift all workers to the cloud by year's end – Aiming to have its entire workforce using computer services in the

cloud by the end of the year, the Agriculture Department is moving inboxes and other business applications for about 10,000 employees each month from in-house systems to the Web.

- Crisis Mapping Meets Check-in – From Libya to Japan, a Web-reporting platform called Ushahidi has helped human rights workers and others document and make sense of fast-moving crises. The platform allows reports from cell phones and Web-connected devices to be collected and displayed on Web-based maps.

- App Smart Extra: Earthquake Apps – Earthquake Lite is an app, which is free for Apple or Android. The software displays global seismic activity in a nicely designed format, and offers lists of events that you can filter by location, magnitude and time.

- Did Someone Ruin Foursquare For Me Yesterday? – Privacy is becoming much more difficult when location based applications are combined with social networks.