SteveKnode.com May 2009

E.I.T. Links

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

"If you tried to read every document on the web, then for each day's effort you would be a year further behind in your goal."
~Anonymous

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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 May 2009, 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.

Links for this Issue

Brain

- Brain Gain – An article updating the latest on brain enhancing drugs. Several possible scenarios for brain enhancement.
- Heat + Energy = Brains. Now Make Us Some. – DARPA is trying to use math to predict human behavior and neuroscience to replicate a primate's brain. The next step: Lean on the study of energy and heat to create an entirely new theory for how intelligence actually works.
- Will designer brains divide humanity? -- We are on the brink of technological breakthroughs that could augment our mental powers beyond recognition. It will soon be possible to boost human brainpower with electronic "plug-ins" or even by genetic enhancement.
- Nanotechnology method to stimulate growth of new neurons in adult brain -- It appears that new brain growth is possible after all. Most thought this impossible until recently.
- Scientists discover area of brain that makes a 'people person' -- Cambridge University researchers have discovered that whether someone is a 'people-person' may depend on the structure of their brain: the greater the concentration of brain tissue in certain parts of the brain, the more likely they are to be a warm, sentimental person.

Chatterbots

- The Next Best Thing to You – A very interesting article about the latest attempt to create an alternate virtual 'you', capable of learning and acting independently. NOTE: A video of the project is available at: http://www.physorg.com/newman/gfx/video/thenextbestt.swf

Data Mining/Business Intelligence

- Companies mine Web clues for signs of pandemics – Excellent example of how sophisticated data mining can actually find and 'predict' events before they become commonplace.

- How Europeans Are Using Data Mining – Several data mining examples are outlined in this article. Many innovative issues featuring analytical aspects are examined.

Future

- 2009+: 10 Trends: Predictions & Provocations – 10 trends that could dramatically change our lives are profiled in this report. The report also includes very clever graphics showing how the trends blend and interact.

Fuzzy Logic

- Fuzzy Logic And Grey Science – An excellent overview of Fuzzy Logic and many of its applications. Fuzzy Logic provides a method of dealing with the many 'grey' areas of our lives.

Genetic Algorithms

- Genetic Algorithms Will Let V'Ger Fly (and Kill Klingons) – NASA is considering using Genetic Algorithms to allow space probes to plot their own courses, thereby speeding up and simplifying the computational burden involved.

Information Visualization

- Visible Past: Where Information Searches For You – Visible Past is a location-aware learning environment being developed at Purdue University. It is based around the idea that data can be organized using space and time attributes.

- VocabGrabber Takes Any Text, Gives Language Learners Visual Aid – VoiceGrabber takes any text a user chooses and parses it for likely vocabulary words, organizing them in several fascinating ways and showing linguistic and contextual links to other terms.

Innovation

- Plugging In $40 Computers – A series of $40 computers can be the start of a smart data center for the home. An explosion of innovation about to hit home users because of the combination of open-source software and very powerful chips that are becoming available at very low costs.

- Site Lets Writers Sell Digital Copies – Further signs of disintermediation as writers can now upload and sell their own creations seamlessly. Authors or publishers will be able to set their own price for their work and keep 80 percent of the revenue. They can also decide whether to encode their documents with security software that will prevent their texts from being downloaded or freely copied.

- Google Tries to Reinvent Email – Google Wave looks to be an integrated communications platform that brings together email, chat, photo-sharing, and collaborative editing features. Google describes a 'wave' as "equal parts conversation and document" and the Wave team basically sees it as a replacement for email and other collaboration tools.

Intelligent Agents

- Siri: A Powerful Virtual Assistant For The iPhone – Virtual Assistants (VA's) are coming to a mobile device near you. The most impressive new release is Siri, which will debut this summer. Siri is a virtual assistant that is focused on helping consumers complete tasks in their online lives, particularly in the mobile context. Typical use cases are booking dinner reservations, buying movie tickets, getting local information, or finding things to do in your local area.

Knowledge Management

- Wolfram|Alpha: A Video Demonstration – Last month I highlighted a sophisticated new search engine, Wolfram Alpha. Here is a video demonstration of it in action.

- Data.gov Now Live; Looks Nice But Short on Data – The first effort of our new federal CIO and CTO, Data.gov is now available. First analysis is that this is a promising start, but will need much more data to be useful to

many.

Kurzweil

- Ray Kurzweil Talks Transcendent Man at Tribeca Film Fest (includes movie trailer) – Kurzweil interview in which he discusses the new movie about his exploits and views on the future.

Machine Learning

- I.B.M. Unveils Real-Time Software to Find Trends in Vast Data Sets – New software from I.B.M. can suck up huge volumes of data from many sources and quickly identify correlations within it. The company says it expects the software to be useful in analyzing finance, health care and even space weather.

Medical

- A Drug-Dispensing Lens – Eyedrops are a simple way to get medicine to the surface of the eye, but taking drops several times a day can be onerous for patients. A startup company in Cambridge, MA, has developed an alternative: contact lenses that can deliver drugs to the eye for a month or more.

- IBM outlines new model for Healthcare – A new medical approach is outlined in this article. The Medical Home is a new approach for transforming our health care system. Included is an excellent comparison between the current system and the outlined one.
- Portable Device Can Detect Viruses In Minutes – Imagine being able to detect in just a few minutes whether someone is infected with a virus. This has now become a reality, thanks to a new ultra-sensitive detector that has been developed by a spin-off company.

- Dr. Hodge, the first iPhone Doctor – It had to happen---a doctor who uses her iPhone to facilitate her visits to patients. Having secure access to patient medical records, a cloud-based house call practice platform provided by a third-party with full HIPAA compliance, software and hardware support as well as encrypted remote data storage and firewall protection, she is able to visit more patients and spend more time with them than using traditional methods.

Military

- Harnessing science to create the ultimate warrior – Advances in neuroscience are facilitating the development of batallions of super soldiers selected for specific duties on the basis of their genetic make-up and then constantly monitored for signs of weakness.

- Inside the bad-ass world of military research projects – A detailed look-see at DARPA's top nine research projects and some of their implications if successful.

- DARPA's Strategic Plan 2009 – For anyone seeking more details about DARPA's plans and ideas, this is the complete strategic plan for 2009. Outlines of the mission, objectives and key research areas are included.

- F35 Advanced Avionics (video) – The latest developments in avionics are featured in this F-35 video.

MISC

- Fair features low-fat cow, bovine behavior meter and neo-castor oil – Information technology is even transforming the animal industry. Several interesting applications are profiled in this article.
- Building a Smarter Planet – The infrastructures, processes and systems that underpin companies, industries, and societies are changing; they're becoming instrumented and interconnected. And increasingly, they're being infused with intelligence. This is driving enormous gains in efficiency and productivity and will ultimately result in significant advances in how the world operates. IBM is leading one approach to a 'smarter' planet.

- 'Intelligent' car park offers cost, space, safety benefits – To complement the 'smarter' planet approach, here is a smarter parking garage, featuring robots, an array of

sensors, and intelligence embedded in the system.

- The Churchill Club's 2009 Tech Trends: Energy, Data And More Energy – Some exciting predictions, focused mostly on energy, are contained in this list from the Churchill's Club annual meeting.

- Asking a Machine To Spot Threats Human Eyes Miss -- Mathematical algorithms embedded in the stores' new security system pick out stealing on their own. There's no need for a security guard watching banks of video monitors or reviewing hours of grainy footage. When the system thinks it's spotted evidence, it alerts management on a computer screen and offers up the footage.
- HowCast for iPhone Hits 500k Downloads - It's Awesome—The software HowCast has hundreds of videos on how to do a particular task available for download and viewing on the iPhone. An instant success story.

- Nine games computers are ruining for humanity – It is not just chess that computers have 'solved', but now other games have been mastered (to a degree) by the algorithms of the computer, including many favorites.

Nanotechnology

- New memory material may hold data for one billion years – If you are worried that your stored data may someday disappear due to aging, here might be the solution. Scientists are reporting an advance toward remedying this situation with a new computer memory device that can store thousands of times more data than conventional silicon chips with an estimated lifetime of more than one billion years.

Neural Networks

- A Neural Net That Diagnoses Epilepsy – My continued amazement and fascinating interest in neural networks is further tweaked by this application. The researchers claim an accuracy rate of 94 percent--about the same as experienced human operators, who usually have to strip various kinds of noise and artifacts out of the data before they can do their job.

Natural Language Processing

- TONGUE IN CHECK – A great article about the rapid progress in language translation and understanding. DARPA, for example, is aiming to get an affordable iPod-size interpreter on the chest of every American warrior, foreshadowing the day such devices will be as common as music players. Lots of other companies (e.g., Google) also involved with efforts.

- How IBM Plans to Win Jeopardy! – IBM plans on showcasing its latest endeavor, winning Jeopardy. IBM hopes to advance toward this objective with Watson, a computer system that will play *Jeopardy* the popular TV trivia game show, against human contestants, including all time champion Ken Jennings.

Quantum Computing

- First Evidence of Entanglement in Photosynthesis – One of the key tenets of quantum computing is entanglement, the strange quantum phenomenon in which distinct objects share the same existence, regardless of the distance between them. Now, for the first time, there is evidence of entanglement in biological systems.

RFID

- Tiny Implants for Treating Chronic Pain – RFID technology allows neural stimulators to become really small. A tiny injectable implant, smaller than a grain of rice, might one day take the place of large neural stimulators used to treat chronic pain and other neurological disorders.

- RFID Plays Crucial Military Role In Middle East -- Radio frequency identification, along with satellite and cellular technologies, is playing a critical role in the war efforts in Iraq and Afghanistan, according to Major General James L. Hodge, commanding general of the Surface Deployment and

Distribution Command (SDDC) division at Scott Air Force Base.

- Mir:ror: A Glimpse Into The Future of an RFID World (accompanying video) -- As the name suggests, it is literally a mirror - but an Internet-connected one which detects the objects you show it, triggering applications and multimedia content on your computer. It works via RFID stamps, known as "ztamp:s" in the company's terminology. When the user waves a stamped object over the mir:ror, a pre-programmed action occurs. For example waving a stamped coffee mug over the mir:ror might trigger your computer to read the news aloud to you. You can create your own mir:ror applications.

Robots

- Hawk Wireless Networked Autonomous Humanoid Mobile Robot with Dual Arms – Watch the several videos included to see how amazing this relatively inexpensive robot is.

- Cutting-Edge Robots Show Off in Japan – Yet another amazing robot, this time one that can rapidly climb trees (includes link to a video).

- Recycling Robot Shows Clutter-Sorting Skills (video) – This robot can autonomously sort clutter into proper segments for recycling.

- Look out, Rover. Robots are man's new best friend – A good overview of several robots being used already in the home and for relatively simple tasks in industry.

Search Engines

- Google Unveils New Tool To Dig for Public Data – Google has launched a new search tool designed to help Web users find public data that is often buried in hard-to-navigate government Web sites. The tool, called Google Public Data, is the latest in the company's efforts to make information from federal, state and local governments accessible to citizens.

- Google Unveils New Search Products – Still more Google as they release some additional search tools and techniques.

- Newssift – Powered by semantic search, Newssift scours multiple prominent information sources found on the web — including news, magazine, television, radio, and expert commentary. Newssift is driven by sophisticated semantic analysis that interprets the meaning(s) of your request.

- Microsoft BING – Microsoft has introduced its latest search engine, BING. Included in this edition is the semantic engine from Powerset, a company purchased by Microsoft recently. NOTE: I have tried BING and find it very effective.

Semantic Web

- First Installment in the Powercast Series: Dave Fayram on the Future of the Semantic Web – As mentioned in the Search Engines link about Microsoft BING, Powerset is part of the semantic engine behind BING. Read this first installment to get an idea of the power included.

- Enterprises, Struggling to Manage Your Data? Try The Semantic Web – A new report explains how the Semantic Web and Linked Data can help enterprises manage their large-scale data better. The PwC Center for Technology and Innovation team spent several months researching and analyzing the problem of data silos in enterprises - and what solutions are being developed to help with that problem. The answer is Semantic Web techniques.

Sensors

- Bringing Efficiency to the Infrastructure – Low-cost sensors and clever software for analytics and visualization, as well as computing firepower are enabling the development of a ‘smart’ infrastructure. Wireless sensors can now collect and transmit information from almost any object — for instance, roads, food crates, utility

lines and water pipes. And the improved software helps interpret the huge flow of information, so raw data becomes useful knowledge to monitor and optimize transport and other complex systems.

- Nanosensor Arrays 'Smell' Cancer – Small nano-sized sensors can now be used to discriminate between the breath of a healthy patient and one with lung cancer.

Web 2.0

- Flu Wiki – Yet another use for Wikis, this time for keeping up and informing about the flu. Once again, a great use of 'crowdsourcing' to collect and spread information.

- City 2.0: Using tech building blocks in tomorrow's urban centers – Yet another article about how the confluence of several technologies is enabling cities to become 'smart' in how they manage resources. Smart grids, social networks, wireless interconnectivity, and the 'cloud' are all contributing factors.

- Map the Fallen – For those of you with Google Earth installed, (and if not, you should definitely install it), this mashup application will astound. Every injured or killed military person from the efforts in Iraq or Afghanistan is placed on the map with details about the person and his unfortunate experience. See this once and you will not forget it.

- Business People Say Twitter More Important Than LinkedIn – A recent poll has surprising results in that twitter has become one of the most important skills to master, along with others like Facebook, iPhone, and LinkedIn.