E.I.T. Links

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

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"Never let a computer know you are in a hurry."
~Author unknown

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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 Oct 2008, 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

AI General

- 'Intelligent' computers put to the test – Every year the Turing Test is held to determine if any computer chatterbots can pass the test. Thus far, no entity has. However, this year some of the entrants came closer than ever.

- Will Wright's 5 Prophecies about Artificial Intelligence (With Video!) – Will Wright (creator of the SIMS and other video games) has made his prognostications about artificial intelligence and its future.

Brain

- This is your grid on brains – Check out this very unique idea to use living brain cells

from rats to control simulated power grids. If this works, look for more applications of biologically inspired approaches to managing grids.

- Reading This Will Change Your Brain – According to research technology is changing our brains. A dramatic shift in how we gather information and communicate with one another has touched off an era of rapid evolution that may ultimately change the human brain as we know it.

- Surfing the Web Stimulates Older Brains – Researchers have found that middle-aged to older adults who know their way around the Internet had more stimulation of decision-making and complex reasoning areas of the brain than peers who were new to web surfing.

- Computer circuit built from brain cells – Modeling how the brain develops networks, human engineers are now developing more reliable networks.

Chatterbots

- Elbot Wins Competition for Human-Like Computers – Every year the Turing Test is held to determine if any computer chatterbots can pass the test. Thus far, no entity has. However, this year some of the entrants came closer than ever.

Data Mining

- [2008 Data Miner Survey](#) – The latest survey of data mining software and how it is being used.

- [All Counterterrorism Programs That Collect and Mine Data Should Be Evaluated for Effectiveness, Privacy Impacts; Congress Should Consider New Privacy Safeguards](#) – A full report on how U.S. agencies are dealing with counterterriorism data mining. This report deals with several issues regarding the collection and use of the data.

- [Medical data 'Internet' goes live, boosts research](#) – There is now a new source of medical information. "BioGrid is like a large medical Internet, meaning that clinical researchers can access information from existing research and clinical databases across many disease types at multiple institutions," explains Dr Andrew Janke, a researcher with expertise in medical databases at the ANU Medical School.

Decision Making

- [Do You Want to Believe?](#) – New research indicates that in situations in which a person is not in control, they're more likely to spot patterns where none exist, see illusions, and believe in conspiracy theories. You can see the implications for decision making. As before, we are not always aware of our cognitive limitations.

Future

- [Five Thousand Bucks for Your Genome](#) – The price for mapping a human sequence is being lowered to $5,000 dollars from the current price which is close to $100,000. As further prices drop, soon all will have the ability to maintain a copy of the genome sequence. This could completely open up possibilities in the personalized medicine field.

- [Towards Tomorrow](#) – A probing look at the puzzling and unpredictable future that is headed our way. This treatise examines the possibility that we are on the precipice of an unpredictable and unimaginable future.

- [The Coming Convergence (podcast)](#)– In The Coming Convergence Stanley Schmidt lays out the accelerating technological trends in nanotechnology, biotechnology, information technology and cognitive science, and how their convergence into new metasciences will bring about dramatic risks and benefits.

- [Superstruct: the world's first massively multiplayer forecasting game](#) – An interesting video about a fascinating new game which allows for multiple players to forecast the future. Another example of the "[wisdom of crowds](#)" in action.

Information Visualization

- [The Visual MD](#) – An almost unbelievable example of how to make medical education and information visual. This website has some dynamic health information, especially about the heart.

- [Google's Super Satellite Captures First Image](#) – Google's new super resolution satellite has taken its first pictures for release. Check out how impressive these new images are with up to 41-centimeter resolution.

- [5 Ways to Visualizethe U.S. Elections](#) – Some extremely creative ways in which to visualize the elections. Several very unique ways to slice and dice the relevant data.

- [Behind the Scenes at the World's Most Technologically Advanced Planetarium!](#) – A look at the most technologically advanced planetarium around, the new Morrison Planetarium in San Francisco. The Morrison Planetarium is a technological marvel, enabling astronomers not only to show traditional star charts, but to guide visitors through an immersive fly-through of our universe – *realistically rendered in real-time.*

Knowledge Management

- The Digital Company 2013: Freedom to Collaborate – Read this report to see how leading organizations are planning to make extensive use of collaboration. This report is based on extensive interviews with over 600 senior executives from around the globe.

Machine Learning

- A vital link in automating healthcare – Software from Netrics helps overcome the many mistakes people make in recording health data. This automated service is faster and more accurate than humans.

- Body In Mind – Unlike standard robots that come preprogrammed with inflexible rules for thinking, Leonardo, the smartest robot around, adopts the perspectives of people he meets and then acts on that knowledge. Take a look at how the latest research in understanding cognition is being acted on in this development.

Manufacturing

- 3-D Printing on Demand– I have posted several links in the past on 3-D printers, but the progress continues. Now, affordable to almost anyone, printing in 3-D can be done via the www for about $3 per square centimeter.

Medical

- Smart Insulin – Maintaining the exactly right amount of insulin in the body has long been a challenge for diabetics. Now there is an application of insulin which has enough "smarts" to be able to self-adjust to the proper limit.

- The Engaged E-patient Population – An interesting survey by the Pew organization outlining how the internet is being used for medical information.

- Look to the Genome to Rebuild Health Care –Personalized health care is just around the corner according to this article. Based on the 4 P's (predictive, preventive, personalized, and participatory), health care is becoming more efficient and more effective.

- Computers Help Docs Spot Breast Cancer on X-rays – More evidence that computers are becoming more than just tools. This application shows how a computer is as good as a second pair of eyes for helping a radiologist spot breast cancer on a mammogram, one of the largest and most rigorous tests of computer-aided detection found.

- Robot will be able to detect, destroy breast cancer cells – Related to the above link, here is another example where an automated system is performing at or better than humans. In this case, a robot is able to perform biopsies and destroy tumor cells all in one session, making the diagnosis and treatment of breast cancer less time-consuming and more accurate than ever before.

- Operating inside a Beating Heart – Another application of robotics and medicine. Now heart valve surgery can be done without stopping the heart.

- Scientists make cat that glows in the dark – A cat that glows in the dark has been bred by scientists. Lest you think this is just a silly idea, serious applications for disease diagnosis are expected to result from this successful experiment.

- Logging On for a Second (or Third) Opinion – Internet usage for medical advice and diagnosis continues to grow. Here is an application detailing many sites and approaches being used.

- Voyage of the Bacteria Bots – Nanobots can now be "steered" though the body via magnetic resonance imaging. These bacteria bots can be guided directly to cancer cell locations.

Military

- Packs of robots will hunt down uncooperative humans – The military is serious about developing packs of robots

that would hunt down "uncooperative" humans. A human would remain in the loop to prevent "bad decisions".

- Five Top National Security Research Challenges for the Next President – An interesting slant on the some of the most important challenges facing the new president in the area of national security.

MISC

- Digital Disruptions – This is the latest yearly research report from the Leading Edge Foundation. This excellent report outlines in detail how seven digital disruptive technologies (New Media, Living in a New Reality, Social Power, Information Transparency, New Wave of Waves, Platform Makeover, Smarter World) are going to have significant impact in our lives.

- Lessons Learned from 62 Years of Internet History – One of the giants of the business, Bob Metcalfe (inventor of the Ethernet among other accomplishments) discusses the lessons he has learned in this fascinating video.

- Intelligent Machines? Think Again (free registration may be required to access this article) – A summary of some successful (and not so successful) applications of intelligent machines. Overall bottom line: The capacity of the internet to gather and sift vast amounts of data and the power of modern supercomputers to analyze and model hugely complex systems have brought AI back into the spotlight.

- Re-engineering HR Solutions – Intelligent systems continue to emerge in many areas, this time Human Relations. This application overcomes several shortcomings in the usual HR interview process.

- Technologies That Hurt Us – Technologies can usually have unintended consequences. In his book *Future Imperfect: Technology And Freedom In An Uncertain World*, David M. Friedman discusses the dilemmas posed by a number of promising technologies. He even digs into three that could one day decimate humanity: nanotechnology,

artificial intelligence and biotechnology.

Nanotechnology

- Hybrid Nanoparticles Image and Treat Tumors – Another application of nanotechnology to treat cancerous tumors.

- Ford Going Nano – At least one of the major car manufacturers is going to make use of nanotechnology. By 2020, Ford plans to improve fuel efficiency by as much as 40 percent, by using nanotechnology to develop paints, plastics, light metals, and catalysts to produce lighter vehicles.

NLP

- A Robotic Copilot That Really Understands – An American firm has developed a voice recognition system that not only does not require "training" (repeating dozens of phrases into a microphone so the software can adapt itself to your speech patterns), but can immediately adapt itself to a wide variety of accents. European air forces are installing this system in their new Typhoon fighters.

Robots

- BioMedical Robots Galore (video) – A video of several biomedical robots from a recent conference showing the convergence between robots and biomedical applications.

- 'Cultured' robots make sweet music together (video) – This fascinating video shows how two robots, each programmed to blurt random sequences of music notes, can autonomously evolve to sing a song together.

- Robot Mimics a Canine Helper – How about a robot which can open doors, switch on lights, and perform other useful tasks to offer a much needed lifeline to people with disabilities? Sounds unlikely, but that is exactly what researchers at Georgia Tech are developing.

- Professors teach robot to 'play ball' – The world of robots continues to emerge and develop. This robot can field ground balls similarly to humans. Although not even close yet to major league level, the progress is astounding nonetheless.

- Robot suit for rent in Japan to help people walk – For $2200 per month persons with mobility problems can now rent a robot suit which aids in walking.

Search Engines

- DARPA Contract Description Hints at Advanced Video Spying – As more and more live video data is collected from various sources, the need to be able to index and search grows. DARPA's latest efforts to do so are outlined in this article.

- An Artificial Intelligence Search Engine – Interesting approach to search. This innovative site provides the ability to compare results with ask.com and other popular search engines. So all the results you need are in one convenient place. And since only related keyword searches are shown, you won't waste time digging through irrelevant results.

Semantic Web

- Untangling Web Information – The Semantic Web application, TWINE, has been released to the public. Twine is part bookmarking tool, part social network, and part recommendation engine, helping users collect, manage, and share online information related to any area of interest. Twine uses artificial intelligence--machine learning and natural language processing--to parse the contents of Web pages and extract key concepts, such as people, places, and organizations, from the pages that a user saves. The site then uses these concepts to link information and users.

Sensors

- Mimicking Body Biosensors – Sensors that can mimic the antibodies that humans possess to defend against diseases are being developed. Recent successes show the artificial antibodies to be close to the strength of natural antibodies.

- Electronic nose sniffs out plant pests – More evidence of the growth of sensors. This application shows how sensors can distinguish the whiff of a plant covered with caterpillars from one plagued with mites, or just physically damaged. It could act as an early warning system in glasshouses, alerting farmers to the early signs of disease before crop yields fall.

Virtual Reality

- Revolutionary Virtual Reality Training Originally Designed for the Army (with video) – 3D interactive simulations that could revolutionize training in the military, health care, retail stores, and any number of other industries are now being created.

- A Second Life on Second Life (video) – Excellent video showing the many aspects of real life that a handicapped person can experience in 2nd life.

Web 2.0

- GovGab: Your US government blog – You may not have known it, but there is an official US government blog.

- U.S. Government Podcasts – Similarly, the U.S. government also produces many podcasts on subjects of interest.

- The Periodic Table of Videos – An excellent example of a mashup approach to educating about the periodic table elements. This shows another of the innovative ways to utilize web 2.0 technologies.

- Seven Blog News Trackers Compared – With more than 50 million blogs now in operation, tracking the ones you prefer is a chore. Here, seven of the best trackers are compared.

- Best Buy's "Enterprise Twitter" – If you are wondering how twitter is being used

effectively, this article will provide several excellent examples.

- [Wikipedia and the Meaning of Truth](#) – If you have ever wondered how accurate Wikipedia is, then this article will enlighten you. Many people, especially academic experts, have argued that Wikipedia's articles can't be trusted, because they are written and edited by volunteers who have never been vetted. Nevertheless, studies have found that the articles are remarkably accurate. The reason is that Wikipedia's community of more than seven million registered users has organically evolved a set of policies and procedures for removing untruths. Perhaps this is more evidence of the "wisdom of crowds" approach.

- [Trapster Speed Trap Alert](#) – Yet another innovative use of mashups, this time to show on google maps where speed traps reside. Alerts can be sent to cell phones.