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E.I.T. Links

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

"Computing is not about computers any more. It is about living."
~Nicholas Negroponte

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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 Sep 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

Artificial Life

- Gaming Evolves – Game theory models, simulation and evolutionary algorithms are being combined in clever ways to emulate life and let scientists learn in new and innovative ways.

Brain

- New Brain Cells Essential for Learning – It appears that it is essential to have new brain cells developing in order to learn and have memory.

- Animal Intelligence and the Evolution of the Human Mind – The latest findings in brain research indicate that subtle differences in brain architectures rather than large-scale alterations are what separates the human brain from other animals.

Decision Making

- Building A Smarter Corporation – New software, when installed in an enterprise, interacts with the e-mail system on every employee's desk and "learns" their expertise. Artificial intelligence algorithms work in the background, reading all your e-mail exchanges, noting who you correspond with, how often and on what topics, and in this way, creates a personalized profile of your areas of knowledge.

- Technology Doesn't Dumb Us Down. It Frees Our Minds. – The article by Nicholas Carr, "Is Google Making Us Stupid?" (see June 2008 EIT newsletter for a link to the article) is rebutted in this article. The author maintains that technology developments free us from mundane tasks and allow for more time to think and communicate.

Educational Technology

- iKnow! Launches Adaptive Learning System – An adaptive learning system to assist English speakers who want to learn a new language has been announced. Using a specialized algorithm tailored to the individual learner, iKnow! can accelerate knowledge acquisition by having you review items at the optimum point in time - that moment right before you're likely to forget it. (NOTE: For more on this theory of remembering information, see the Wired Magazine article, Want to Remember

Everything You'll Ever Learn? Surrender to This Algorithm)

Future

- Using Biomedicine to Enhance Ourselves (video) – Is it Immoral to Want to Live Longer, Be Smarter and Look Better? The Ethics of Using Biomedicine to Enhance Ourselves and Our Children as a part of The Ethical Frontiers of Science during the 2008 Chautauqua Institution morning lecture series.

- Japan hopes to turn sci-fi into reality with elevator to the stars – Although it sounds unreal, there are serious plans to build an elevator to space. The vision has inspired scientists around the world and government organizations including NASA. Several competing space elevator projects are gathering pace as various groups vie to build practical carriages, tethers and the hundreds of other parts required to carry out the plan.

- EmTech Conference at MIT – Each year MIT holds an Emerging Technology conference. This is the link to videos (many of them free) from this year's conference. The highlight might be the Thursday keynote presentation from Microsoft chief research officer, Craig Mundie.

Genetic Algorithms

- Using AI to find biomarkers of calorie restriction – A genetic algorithm approach has been successfully applied to find the proper set of biomarkers used in calorie restriction as it relates to life extension.

Information Overload

- Email becomes a dangerous distraction – In a study last year, Dr Thomas Jackson of Loughborough University, England, found that it takes an average of 64 seconds to recover your train of thought after interruption by email. So people who check their email every five minutes waste 8.5 hours a week figuring out what they were doing moments before.

- The Information Revolution and Its Impact on Homeland Security – This is the keynote presentation by Tom Black at the Homeland and Border Security Conference, held in London on July 3, 2008. This is a terrific thought piece on the threats and how to handle them.

Information Visualization

- Making the Visible Invisible – Extremely interesting article about augmented reality and how information can be displayed. Check out the many examples mentioned and illustrated in this article.

- Lines and Bubbles and Bars, Oh My! New Ways to Sift Data – At an experimental Web site, Many Eyes, (www.many-eyes.com), users can upload the data they want to visualize, then try sophisticated tools to generate interactive displays.

- Google to Digitize Newspaper Archives – Google is now scanning microfilm from some newspapers' historic archives to make them searchable online, first through Google News and eventually on the papers' own Web sites, the company said Monday.

- A Face-Finding Search Engine – Searching for faces just got better based on this new approach to this difficult problem.

Innovation

- Another Voice Warns of an Innovation Slowdown – This article outlines the growing concern about the slowing of innovation in the United States. The author argues that short-term thinking and a reluctance to take risks are causing a noticeable lag in innovation.

- Esquire magazine unveils cover with electronic ink – An innovative approach to marketing media, this time using Electronic Ink for the cover. Soon, electronic ink will allow for realtime updates to media sources.

Intelligent Agents

- Stop Searching The Web - Let Yotify Do It For You – Intelligent agents let you track anything on the internet and only reports back when it has results for you to review. Your Yotify "scouts," as the searches are called, can be shared with others via email, Facebook, Friendfeed, or even directly with the other Yotify members you befriend on the site. Clearly, another example of the growing movement away from "self-service" toward "room service".

Knowledge Management

- Program brings Web's collective wisdom to patent process – Another key theme I have promoted is greater use of the "wisdom of crowds" approach to decision-making. This article illustrates how the patent process can utilize this process. The concept behind the program, called Peer-to-Patent, is straightforward: Publish patent applications on the Web for all to see and let anyone with relevant expertise -- academics, colleagues, even potential rivals -- offer input to be passed along to the Patent Office.

- Warning sounded on web's future – A way to separate good information from misinformation is needed for the web. More ways to make the web mobile are also highlighted in this article.

Manufacturing

- The Scannable World, Part 3: Barcode Scanning In The Real World – Some amazing applications of bar codes in today's world. You will be impressed with how bar codes are making information more available. (NOTE: There are links to parts 1 and 2 of this series at this site.)

Medical

- Schoolchildren could be given 'smart drugs' in a bid to boost brainpower – Researchers predict that within a generation, cognition enhancing drugs - or 'cogs' - will be so advanced that parents and teachers will be able to 'manipulate biology' to enhance pupils' brainpower. Soon, the ethical issues of such an approach will become a hot topic.

- 23andMe slashes price on personal genetics test – The cost of a personal genetic makeup analysis has just been slashed from $999 to $399 by 23andMe. Soon, everyone will have this information to help with the growth of personalized medicine.

- Nanomedicine Regulation – An interview with an FDA member on the present and future of nanomedicine as it applies to healthcare. Considerations about benefits and risks are outlined.
- Parachutist Survives Fall, Gets 'Pacemaker for Pain' – A new use of a pacemaker, this time to reduce or eliminate pain, is outlined in this article. Now, chronic pain can be treated with a small, embedded pacemaker that interrupts pain signals to the brain.

- NASA's 'electronic nose' could sniff out cancer – The Enose, originally developed to sniff out leaks on space shuttles, could also be used to detect the characteristic compounds of cancer.

Military

- Uncle Sam Wants Your Brain – More on how the military will make use of technology to enhance soldiers' capabilities. Drugs that make soldiers want to fight, robots linked directly to their controllers' brains, lie-detecting scans administered to terrorist suspects as they cross U.S. borders are just some of the ideas.
- US Army Invests in 'Thought Helmet' Technology for Voiceless Communication – In the future, soldiers may be communicating silently with sophisticated "thought helmets." The devices would harness a person´s brain waves and transmit them as radio waves, where they would be translated into words in the headphones of other soldiers.

MISC

- Book Excerpt: The Numerati by Stephen Baker (also video) – Interesting concept: by building mathematical models of its own employees, IBM aims to improve productivity and automate management. There are many implications in this

approach to management. (NOTE: For an interesting look at the possible future of this approach, read Manna by Marshall Brain.)

- Ultrasound to give feel to games –The power of ultrasonic waves has been harnessed to produce "virtual" objects in mid-air.

- Predicting where you'll go and what you'll like – Given all of the information available about people's behavior, a company now is using sophisticated data mining to attempt to predict where you will go and what you will like to do, a sort of "reality mining".

- 'Cognitive radios' to improve wireless devices – Researchers are developing intelligent radios that can sense their surroundings and adjust their mode of operation accordingly.

Nanotechnology

- Researchers develop nano-sized 'cargo ships' to target and destroy tumors – Scientists have developed nanometer-sized 'cargo ships' that can sail throughout the body via the bloodstream without immediate detection from the body's immune radar system and ferry their cargo of anti-cancer drugs and markers into tumors that might otherwise go untreated or undetected.

Robots

- iRobot co-founder envisions a future with robots and without you – Rodney Brooks, the founder of iRobot, gives his insightful predictions about the future of robots. He is leaving MIT and iRobot to start another robotics company which will focus on consumer robots.

- ScanRobot: An innovative book scanning robot (video) – Robots are now assisting in the digitization of books. As with many other areas, robots continue to expand into areas where only humans functioned before.

- Roboticists on a Path to Create C3P0 – In the open source community, there are several efforts to develop robots that look and/or act like humans, performing interesting and useful tasks. They're not C3PO at this stage of their development, but they show tremendous promise, especially if more open source contributions are made to the projects. There are a couple of good examples to take a gander at.

- Building a Self-Assembling Stomach-Bot – A consortium of European researchers is testing a way to connect several swallowable devices to create a surgical "robot" that would self-assemble inside the stomach. This would further advance the medical community's ability to diagnose and treat intestinal illnesses.

- A robot in every home? (Robot Special part 3) – Part 3 of a special 4 part series on European efforts to lead in the development of home and industrial robots. (NOTE: Links to parts 1 and 2 are available at this link; part 4 has not yet been released.)

Search Engines

- The Intelligent Cloud – Fascinating article outlining some of the tremendous developments soon to occur in the area of search engines. This panel of experts gives some insights into where search is headed, i.e., more "room service", less focus on "self-service".

- Opening Search to Semantic Upstarts – Yahoo recently released a resource that may offer hope to search innovators and entrepreneurs. Called Build Your Own Search Service (BOSS), it allows programmers to make use of Yahoo's index of the Web--billions of pages that are continually updated--thereby removing perhaps the biggest barrier to search innovation.

- Infovell's 'research engine' finds deep Web pages that Google, Yahoo miss – The "deep web" contains most of the internet pages and is mostly uncategorized and unsearchable. Now, a new approach can begin to delve into many of these pages. (NOTE: If you are unfamiliar with the "deep web", this link will provide some insights, http://www.brightplanet.com/resources/details/deepweb.html.)

Semantic Web

- Cognition Announces "World's Largest Semantic Map" –The newest effort to incorporate semantic approaches into search engines is outlined here. This could lead to a more powerful search engine, similar to the efforts at Powerset and Hakia.

Sensors

- A new device tracks activity and sleep patterns 24-7 – A small, unobtrusive sensor that tracks a person's movement 24 hours a day to produce a record of her steps taken, her calories burned, and even the quality of her sleep. Data is wirelessly uploaded to the Web so that users can monitor their activity and compare it with that of their friends.

- Wireless sensors learn from life – Still more uses for sensors as they continue to proliferate. This article discusses using a wireless sensor network to monitor geological conditions. Wireless sensors are well suited to environmental monitoring.

- 'Pre-crime' detector shows promise -- Future Attribute Screening Technologies (FAST), as it is called, is aimed to help security staff choose whom to pull over for a gently probing interview - or more. The idea is that sensors can spot people up to no good from their pulse rate, breathing, skin temperature, or fleeting facial expressions.

Virtual Reality

- Balancing Act – Using Virtual Reality, researchers can study the complexities of dizziness without endangering patients.

- 3D Virtual Reality Environment Developed at UC San Diego Helps Scientists Innovate – Thomas A. DeFanti helped create the CAVE virtual reality environment, one of the most advanced in the world. Now, his latest creation, the StarCAVE, has been developed with even greater resolution and contrast. Innovative applications are available using this approach. (NOTE: I have been in one of the original CAVE's and the experience is definitely unique and surreal.)

- Australian company launches 3D Internet tool – Now there is a free tool which allows users to view the internet in three dimensions.

- Curing the Wounds of Iraq with Virtual Therapy – A revolutionary approach to dealing with post-traumatic stress disorder is now available via virtual reality.

- Seabed archaeology goes virtual – People will soon be able to operate their own virtual submersibles to explore hidden treasures at deep underwater archaeological sites.

Web 2.0

- CIA, FBI push 'Facebook for spies' – The CIA, FBI, and The National Security Agency are pushing for a facebook-like space for analysts within the 16 U.S. security agencies.

- Enterprise Twitter – Twitter moves into some serious applications within the enterprise arena.

- Capturing the Moment (and More) via Cellphone Video – As cellphone capabilities continue to improve, people are now streaming entire events from their phones.

- Connect the Physical and Virtual Worlds – Through the use of Semapedia-Tags, which are cellphone-readable physical hyperlinks, the virtual world and the physical world can be connected. Read this article for examples of this very innovative approach.