

E.I.T. Links

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

“I have seen the future, and it’s very much like the present, only longer.”
 - Woody Allen

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 Oct 2010, 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

- [Artificial intelligence has a feel for laboratory science](#) – Researchers at Southampton University’s School of Electronics and Computer Science (ECS) have won an award for producing an artificial intelligence that is able to guide scientific experimentation within a laboratory.

- [Artificial Intelligence Thwarting Fraud at Financial Institutions](#) – Money laundering and check kiting just got much more difficult in Louisiana with a solution that red-flags suspicious activity among customers.

Brain

- [The Mind in the Brain, the Brain in a Robot: Strong AI in an Artificial Neural Network Brain Replica Housed in an Autonomous, Sensory Endowed Robot](#) – Interesting indepth article about how neural networks can allow for a functioning brain in a robot.
- [Mapping the Brain \(The Human Connectome\)](#) – A new project, dubbed "The Human Connectome," will take five years and cost \$30 Million, will map out approximately 100 billion neurons and 150 trillion synapses. The study will include the work of 33 experts and 1,200 study participants at nine different institutions.
- [Digital Overload: Your Brain On Gadgets \(includes Podcast\)](#) – Interesting research shows that too much reliance and involvement with gadgets actually makes the brain less capable of focusing and concentrating.

Chatterbots

- [SalesClark: Your Personal Shopping Assistant](#) – SalesClark will help you find the best buy on the product you are looking for

by reading reviews, checking websites, etc.

- [Need a Virtual BFF? There's An App for That](#) – To offer a more personal experience, the virtual girlfriend pulls information from the device and the Internet, offering statistics on current weather conditions, providing your horoscope and fortune, reading quotes of the day and more. Users can even type in messages for her to speak aloud.
- [Bilingual 'Roboceptionist' Identifies Cultural Cues for Personalized Conversations](#) – Hala, a robotic receptionist, understands multiple languages, identifies cultural cues and even has a personal history. The innovative machine could pave the way for various other human-computer interaction systems.
- [Prizewinning chatbot steers the conversation](#) – Humans aren't the only ones who can steer a conversation to their own benefit. This year's winner of the Loebner prize for the most convincing chatbot used such a trick to fool a human judge, earning its creator a \$3,000 prize.

Data Mining/Business Intelligence

- [Empowering Decision Making in the Rank and File \(video\)](#) – Empowering decision makers in the organization requires making the same data and analysis available to them that executives have used for years.

Decision-Making

- [Putting heads together](#) – When it comes to intelligence, the whole can indeed be greater than the sum of its parts. A new study co-authored by MIT researchers documents the existence of collective intelligence among groups of people who cooperate well, showing that such intelligence extends beyond the cognitive abilities of the groups' individual members, and that the tendency to cooperate effectively is linked to the number of women in a group.

Educational Technology

- [The Thinking LMS](#) – In an effort ambitiously dubbed the "Learning Genome Project," the for-profit powerhouse Phoenix says it is building a new learning management system (or LMS) that gets to know each of its 400,000 students personally and adapts to accommodate the idiosyncrasies of their "learning DNA."
- [The Future of the Book](#) – Meet Nelson, Coupland, and Alice — the faces of tomorrow's book. Watch global design and innovation consultancy IDEO's vision for the future of the book. What new experiences might be created by linking diverse discussions, what additional value could be created by connected readers to one another, and what innovative ways we might use to tell our favorite stories and build community around books

Expert Systems

- [Computer Predicts Rice Growth, Advises Farmers](#) – A new computer program from the Texas AgriLife Research Center in Beaumont, Texas, is helping U.S. farmers make smart decisions and predictions about how to improve their rice crops.

Future

- [Future Shock Author Toffler Looks At Trends For Next 40 Years](#) – Among other things, the report anticipates that mass production will be replaced by on-demand custom manufacturing of highly complex products and services. As a result, small, agile companies will be able to compete effectively with large manufacturers. It also anticipates that companies will increasingly turn away from creating products and instead host marketplaces and charge to connect consumers with producers.
- [Kevin Kelly on technology evolving beyond us \(mp3\)](#) – One of my favorite 'big thinkers', Kevin Kelly, talks about his new book, What Technology Wants. Make no mistake: the singularity is near. Kelly discusses the technium—a broad term that encompasses all of technology and culture—and its characteristics, including its

autonomy and sense of bias, its interdependency, and how it evolves and self-replicates.

- [Brain-bots 'in ten years'](#) – (video) Long predicted by Kurzweil and others, brain-bots are on the near term horizon.

Information Overload

- [Supplying Less, Revealing More](#) – Computer scientists at IBM Research are attempting to truly solve the information-overload problem with Social Lens, prototype software that plugs into the company's in-house social software. It filters updates made on the corporate network-- whether they're internal posts or links to external Web content--to reveal which posts are most relevant.
- [The Neurological and Creative Toll of Digital Overload](#) – Matt Richtel, technology reporter for the *New York Times*, says in an interview on the NPR program *Fresh Air* that for all the productivity upsides to digital consumption, there are huge downsides, too, including changes in the brain that seem to affect not just the ability to engage in conversation but the ability to be creative, too.

Information Visualization

- [Thin Displays as Wristbands](#) – The U.S. Army is testing a prototype "watch" that's lightweight and thin and has a full-color display. This display is built on flexible materials encased in a rugged plastic case and can be worn on a wristband to display streaming video and other information.
- [The Social Buying Universe](#) – Extremely interesting and informative graphics available at this site.
- [The State of YouTube](#) – Extremely interesting and informative graphics available at this site.

Innovation

- [Message from a Bottle](#) – Could a technology that urges people to take their medications help cut the cost of health care?
- [CarWoo Promises to Take the Hassle Out of Car Buying](#) (related video at: http://www.youtube.com/watch?v=F_4B_dDgpHE) -- CarWoo wants to transform car buying by giving its users the ability to negotiate prices and get quotes from multiple dealers online. While there are already plenty of car buying sites online that aim to help consumers, CarWoo claims that its system is not only more open and transparent (the competing dealers see each others' quotes, for example), but also one of the few sites that are actually working for the consumer and are not beholden to the dealerships.

Intelligent Agents

- [Ability to 'see' advances artificial intelligence](#) -- The Personal Assistant for Scheduling system, a disembodied head floating on a computer screen outside Horvitz's office in Redmond, Wash., is one of the most advanced artificial intelligence programs in the world. It can understand speech, detect faces and interpret body motion. It analyzes years of Horvitz's daily routines to find patterns that suggest the appropriate responses to most workplace scenarios.
- [ToDo Genius software application](#) – ToDo genius purports to be a to do list with a 'brain'. Based on AI, it can learn your tasks, suggest relevant tasks, manage your lists, and more.
- [Virtual Immortality Through Digital Cloning](#) – Now "Virtual Eternity" will allow users to create an intellitar that "will be able to preserve and share your personality, life experiences, knowledge, wisdom, and memories in a way never before available. Users take a Myers-Briggs type personality test which is assigned to the avatar, and then start imparting knowledge to it — memories, photos. The avatar "learns" you using an AI engine from LA-based Cognitive Code. Users choose one of two voices for it. Then it becomes

interactive, so that others can ask it questions and talk to it.

- [First Look at Siine, a Revolution in Text-Based Communication](#) -- As the world shifts to using more tablets, touchscreens and mobile devices as the point of access to the Web, there's an increasing need to rethink the keyboard. On smaller form factors, the traditional method of tap typing may no longer be the best way to enter text on a screen. Enter Siine, a semantically-based, intelligent interface that evolves the keyboard.

Knowledge Management

- [PDFs Become Contextually Amazing With Scribd's Apture Integration](#) – This free new tool makes any .pdf documne totally searchable without leaving the document.

Machine Learning

- [Aiming to Learn as We Do, a Machine Teaches Itself](#) – The Never-Ending Language Learning system, or NELL, has made an impressive showing so far. NELL scans hundreds of millions of Web pages for text patterns that it uses to learn facts, 390,000 to date, with an estimated accuracy of 87 percent. These facts are grouped into semantic categories — cities, companies, sports teams, actors, universities, plants and 274 others. NELL also learns facts that are relations between members of two categories.

Manufacturing

- [The Rise of the 3-D Printers](#) – The technology behind 3-D printing — in which objects are made by a printer that stacks layers of material like plastic or metal on top of each other — has been used for years by manufacturers and designers to build prototypes. 3-D printing is now being adopted by all sorts of businesses to make all sorts of things.
- [Retooling an industry](#) – MIT recently launched an initiative to help reinvent the

long-struggling industry, mustering resources from across the university and appointing a committee of engineers, scientists, economists, and policy specialists to tackle the issues. The goal is to recommend policies and practices to advance US manufacturing, emphasizing innovation that will lead to new products, new processes, and, most important, new jobs.

Medical

- [Real-Time Cancer Diagnosis with New Electronic Biosensing Tech](#) – A team of scientists has created a new electronic biosensor microplate. The technology could bring about a new era of personalized medicine, in which complex diagnoses are made instantly at the doctor's office.
- [MIT developing webcam-based health monitoring mirror](#) – Sitting in front of your computer could soon be the fastest way to receive a medical check up, replacing visits to the local doctor. Massachusetts Institute of Technology student Ming-Zher Poh has created a pulse-monitoring system that works on a low-cost, low-resolution webcam. A version of the system built into a mirror has been developed which displays pulse rate at the bottom in real-time, and work is underway to add respiration and blood-oxygen level monitoring using the same technique
- [Body organs can send status updates to your cellphone](#) – Dutch research organisation IMEC this week demonstrated a new type of wireless body area network (BAN). Dubbed the Human++ BAN platform, the system converts IMEC's ultra-low-power electrocardiogram sensors into wireless nodes in a short-range network, transmitting physiological data to a hub – the patient's cellphone. From there, the readings can be forwarded to doctors via a Wi-Fi or 3G connection.

MISC

- [Automated Google car drives itself: Toyota Prius and Audi TT \(video\)](#) – One of

Google's most recent projects is the automated Google car that drives itself. Using advanced robotics technology, Google states that their current fleet of robotic Google cars, six Toyota Priuses and one Audi TT, have clocked approximately 140,000 miles in test runs.

- [Adding Human Intelligence to Software](#) – Called TurKit, the tool lets software engineers write algorithms to coordinate online workers using the Javascript programming language, and create powerful applications that have human intelligence built in. The software can also be debugged like normal code.
- [Graphene Will Change the Way We Live](#) – Potential applications for the material include the replacing of carbon fibers in composite materials to eventually aid in the production of lighter aircraft and satellites; replacing silicon in transistors; embedding the material in plastics to enable them to conduct electricity; and many more!
- [Don Tapscott on mass collaboration](#) (audio) – Don Tapscott, writer, consultant, and speaker on business strategy and organizational transformation, and co-author of the bestseller *Wikinomics*, discusses his new book, *Macrowikinomics: Rebooting Business and the World*.

[Nanotechnology](#)

- [Nanotechnology Long-term Impacts and Research Directions: 2000-2020](#) – A thirteen chapter detailed report on where Nanotechnology is headed.

[Neural Networks](#)

- [Tea Leaves Identified Using Neural Networks](#) – A team of chemists from the University of Seville (US) has managed to distinguish between different kinds of tea leaves on the basis of their mineral content and by using artificial neural networks.
- [Neural networking](#) – A discussion and amplification on what neural networks can

and cannot do.

- [Predicting machine repairs](#) – Now, a 'virtual engineer' which uses artificial intelligence to predict when machines need repairing could significantly improve the efficiency of maintenance scheduling.

[RFID](#)

- [RFID Technology Making Big Impact In The Hospital Laundry Sector](#) – Each piece of garment or linen is identified and linked to the patient lot or establishment using a button-shaped RFID tag from TAGSYS (Ario 370 L-DL) directly sewed onto the item. Laundries collect soiled textiles from the various medical facilities they serve, and launder them together. With Dreamydress' RFID solution, clean items are automatically sorted by establishment, floor and room and accurately delivered to the right patient or service.

[Robots](#)

- [World's First Robot Census](#) – By showcasing the incredible variety and utility of the robots at Carnegie Mellon and elsewhere, Knight thinks she might be able to punch through people's preconceived notions (and pave the way to getting robots into the home, where they can do the most damage once they're activated by SkyNet's central hive mind).
- [GeckoSystems Advances Artificial Intelligence Due to Elder Care Robot Trials](#) – Not surprisingly the scientific statistical analyses applied revealed that elderly over sixty-five living alone in metropolitan areas with broadband Internet available and sufficient household incomes to support the increased costs were identified as those most likely to adopt initially. Due to the high cost of assisted living, nursing homes, etc. the payback for a CareBot(TM) is expected to be only six to eight months while keeping elderly care receivers independent, in their own long time homes, and living longer due to the comfort and safety of more frequent attention from their loved ones. [Ed note: While at the National Defense University,

we purchased and tested a Gecko Carebot--- quite impressive, even then.]

Search Engines

- [Software knows what films you like](#) – One of several creations from the GroupLens lab is MovieLens.org, where similar technology used for books on Amazon.com recommends movies based on 1,500 different characteristics such as violence or drug use. An artificial intelligence algorithm goes out over the Internet and computes more than 14 million values that take into account the collective view of a certain film.
- [Where Good Ideas Come From](#) – Researchers have now developed subtler ways of measuring the influence and importance of documents and pages on the Web and in archives, by using the text stored in those documents. This approach doesn't rely on people adding pointers such as links and citations, and it could lead to better real-time search engines as well as recommendation systems that automatically gather information on a certain topic.

Sensors

- [An intelligent system for maritime surveillance has been created](#) – Researchers at the Universidad Carlos III de Madrid, Spain, have designed a real application for maritime surveillance that is able to integrate and unify the information from different types of sensors and data in context through artificial intelligence and data fusion techniques.
- [A new bionanotechnological sensor detects and analyses DNA sequences](#) – These sensors are able to represent logical implications (or IF-THEN rules), like, for example, IF symptom 1 and symptom 2 are present, THEN the disease is A, or IF the disease is B, THEN symptoms 2 and 3 must be present. The sensors are able to use these logical rules to autonomously run logical inference processes on the genetic input signals and reach accurate diagnoses. Using these intelligent DNA sensors as basic

building blocks, the aim is to develop in vitro systems capable of autonomously detecting a set of input symptoms and output a diagnosis or release the right drug.

Virtual/Augmented Reality

- [Docomo's AR Walker is a virtual tour guide in a pair of glasses](#) – At this year's CEATEC conference in Chiba, Japan, Docomo previewed the AR Walker augmented reality application that uses a tiny display screen mounted on a pair of glasses, rather than on a mobile phone screen like Layar or other AR apps. While the AR Walker application is not by itself anything new, being able to see annotations of the world around you without having to view it through a mobile phone's camera display is. Docomo has come one step closer to the fictional augmented reality glasses that anime fans might remember from the TV series *Dennou Coil*, where children wore glasses to view virtual objects superimposed over the real world.

Web 2.0

- [10 Lessons for Gov 2.0 from Web 2.0](#) – Excellent discussion, with accompanying videos, outlining how the government can make use of web 2.0 technologies to solve big problems.
- [Death Threats, Theft & Twitter: 24 Hours On the Beat](#) – The Greater Manchester police force, one of the largest in the U.K., is about half way through an experiment in which the force is publishing everything they do for 24 hours on Twitter. The force, facing "unprecedented budget cuts," intends "to allow the public to see what officers at one of the largest UK forces face on a daily basis," with the tweets, but apparently the force faces so much that it goes well beyond what Twitter allows.
- [Twitter Cheatsheet](#) – If you are new to Twitter, this 'cheatsheet' will provide you with all you need to know to look like an expert.

- [A New Model for Predicting Social Media Impact](#) – What's social media good for? Marketers see it as a new way to engage with consumers. Economist turned advertising executive Jason Harper sees an additional function: as a real-time laboratory for measuring how multimillion-dollar ad campaigns are succeeding or failing to drive product sales.
- [FCC tweeting while the FOX cable dispute is being resolved.](#) – How about the FCC ‘tweeting’ while an ongoing dispute is being resolved. Another example of how twitter can keep people informed quickly.
- [How Important Have Apps Become?](#) – Another great graphic to show clearly how the growth of apps, by many categories, has occurred.