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E.I.T. Links

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

"Not all problems have a technological answer, but when they do, that is the more lasting solution."
- Andrew Grove

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 Sep 2011, and all of the links were working at time of publication.

Remember, all links mentioned here and all prior newsletters are available at:
http://www.steveknode.com/

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

I am now "blogging" at my blogspot account,
http://sknode.blogspot.com/.

Links for this Issue

AI General

- US Army Tester Gets Artificial Intelligence – These tools enable software developers to build machine learning into applications so computers can recognize patterns and associations much like a human. ai-one's technology differs from other forms of artificial intelligence because it learns without any human intervention.

Brain

- An Objective Way to Measure Pain – Researchers use brain imaging to detect patterns of brain activity associated with pain—a potential boon for doctors and drug developers.

Chatterbots

- Software tricks people into thinking it is human – For several years developers have been attempting to develeop "chatbots" that can interact with humans and seem real. The closest one yet developed has emerged.
- Speaking 'robots' can teach English 24-hours a day – A Japanese company has developed the world's first artificial intelligence "chat robots" to teach English. SpeakGlobal's online 'robots' - which appear as male or female manga-style characters - look and make gestures that are identical to that of a human, speak aloud and can hold an interactive conversation with the student.

Data Mining/Business Intelligence

- Mining Data for Better Medicine –The spread of electronic patient records, with their computer-readable entries, is opening new possibilities for medical data mining. Instead of being limited to carefully planned studies on volunteers, scientists can

increasingly carry out research virtually by sifting through troves of data collected from the unplanned experiments of real life, as preserved in medical records from scores of hospitals.

Future

- Driverless Tractors & Farmer Drones of the Future (Video) – This video gives a preview of a new product called the Kinze Autonomy Project, a new set of tractor and grain cart unveiled this Summer that drive themselves to harvest crops and that can make "intelligent operational decisions in real time based on field conditions." Designed to reduce the need for skilled labor operating the machinery, the system would mean that farmers could do other higher-level planning work and operate the tractor all night long by itself.

Information Visualization

- Shake up your story (TED talk) – Fascinating TED talk, showing how to portray a story from multiple viewpoints with just a "shake" of the tablet.

Innovation

- Medical App Explosion: – There has been an explosion of medical apps for tablets and smart phones. Here is a slideshow of some of the most impressive ones.

- Your Heartbeat on an iPhone – ECGs are used to diagnose irregular heartbeats, or arrhythmias, a common type of medical problem that can also be the result of a heart attack. AliveCor's monitor is built into a case that slips onto an iPhone. It has two electrodes that pick up voltage changes on the skin—the ECG signal—produced by the contraction of the heart.

- The Quantified-Self Business – Healthrageous offers tools to track progress toward health goals, but its most valuable asset may be data about you.

- Developing the next generation of pervasive computing systems – For the past 20 years the pervasive computing community has developed a vast array of sensors, platforms, and algorithms that enable many context-aware applications and allow us to embed sensing and computing in nearly any manufactured object. While improvements in accuracy, cost, and efficiency are sure to continue, it is time to start the next chapter of pervasive computing: Designing pervasive computing systems that are trustworthy, always-aware of their users, and continuously learning and adapting.

Intelligent Agents

- The Next Smartphone Revolution: Say Hello To Your New Personal Assistants – If you are wondering what happened to the intelligent agent, SIRI, well it will soon re-emerge on iPhones---better and more capably than ever.

Knowledge Management

- With Watson, IBM Seeks to Sell Medical Knowledge – Watson is the supercomputing engine that beat the top two human competitors on the quiz show *Jeopardy!* this year, and Daniels is on the IBM team developing the software's first commercial application as what could be a stunningly useful diagnostic assistant for doctors. If it works as envisioned, Watson could help doctors identify what is afflicting any patient and suggest a course of treatment.

Manufacturing

- Can we make things that make themselves? (TED talk) – MIT researcher Skylar Tibbits works on self-assembly -- the idea that instead of building something (a chair, a skyscraper), we can create materials that build themselves, much the way a strand of DNA zips itself together. It's a big concept at early stages; Tibbits shows us three in-the-lab projects that hint at what a self-assembling future might look like.

Medical

- The Rise of Electronic Medicine – The 2009 HITECH law pays doctors to adopt electronic records, and penalizes those who don't. Fueling the change are data standards that make it easier to share health information, maturing software, rapid innovation linked to mobile computing, and policies to protect patient privacy. As a consequence of this perfect storm of incentives and disincentives, the next five years will see an unprecedented acceleration of electronic medicine in the U.S.

- The Doctor and the iPad – (video) Tablet computers are sweeping into medicine and bringing data to the patient bedside.

- MSU Develops Hand-Held Unit To Detect Cancer In Poorer Countries – An engineering researcher and a global health expert from Michigan State University are working on bringing a low-cost, hand-held device to nations with limited resources to help physicians detect and diagnose cancer.

- Gel Lets Doctors Fix Ruptured Blood Vessels without Sutures – A synthetic, temperature-sensitive gel could help surgeons reconnect blood vessels more quickly, safely, and easily. The new gel, successfully tested in rats, could also enable more complex robotic surgery as well as minimally invasive surgery.

- Answers from 5,000 U.S. licensed physicians, No waiting room – Ask any health question and quickly find answers from thousands of trusted, U.S.-licensed physicians---fast and for free!

- Computer Science Gives a Boost to Heart Health – Researchers from MIT's Computer Science and Artificial Intelligence Laboratory (CSAIL), the University of Michigan, Brigham and Women's Hospital in Boston and Harvard Medical School have developed a new tool that can more accurately determine risk of death in patients who have suffered a heart attack. Results of the study could prove life saving for the millions of Americans who suffer heart attacks every year.

- Welcome to the Genomic revolution (TED talk) – In this riveting talk from TEDxBoston, Richard Resnick shows how cheap and fast genome sequencing is about to turn health care (and insurance, and politics) upside down.

Military

- Move over, BigDog — introducing AlphaDog – AlphaDog (official name: LS3 (Legged Squad Support System) is designed to assist soldiers in carrying heavy loads (up to 400 lbs of gear) over rough terrain (video demo included).

- New Technology Makes Tank Disappear Right Before Your (Infrared) Eyes (video) – A Swedish company has stolen invisibility cloak technology from the Romulans and is using it to hide tanks on Earth battlefields.

MISC

- U.S. company to build scientific ghost town – A Washington, D.C.,-based technology company announced plans Tuesday to build a ghost town, a 50-square-kilometre model metropolis that will be used to test everything from renewable energy innovations to intelligent traffic systems, next-generation wireless networks and smart-grid cyber security systems.

- Window Shopping Goes High Tech With Gesture Recognition – German researchers have given a new meaning to window shopping. A prototype that lets shoppers learn more about what's in a store display window when the store is closed has been shown. When window-shoppers stand in front of the window, they can point at a product they want. Then the display box holding the product will light up and information for the object will be shown on the screen. Window-shoppers can then view it in different colors or sizes, or learn more about it.

- WakeMed Hospital Installs EyeClick Interactive Digital Floor Gaming System – Multiple players can run, twist and dance, using their hands and feet to activate sounds

and colorful graphics projected on the floor, said the company. An important advantage of EyePlay for medical facilities is that it is a complete virtual experience; as there are no parts to touch or trip on, it is extra safe and supports a germ-free environment.

Nanotechnology

- World's smallest electric motor made from a single molecule – Chemists at Tufts University's School of Arts and Sciences have developed the world's first single-molecule electric motor, which may create a new class of devices used in medicine and engineering. It measures a mere 1 nanometer across (the current world record is a 200 nanometer motor).

Neural Networks

- Companies use a Neural Network to predict employee's exit, engagement – Consulting firm KPMG has recently created a crystal ball. Called the KPMG Predictive Index, it can foretell when an employee will resign.

NLP

- In Case You Wondered, a Real Human Wrote This Column – Further proof of the progress of artificial intelligence — the ability of computers to mimic human reasoning. One company's software takes data, like that from sports statistics, company financial reports and housing starts and sales, and turns it into articles.

RFID

- Avis' RFID Tracker Turns Companies into Rental Lots – Avis, the global car rental company is testing an RFID technology that will enable it to keep 5,000 of its cars at the parking lots of client businesses. Clients will be able to use a PIN with their mobile devices and pick up a car kept on their own premises.

Robots

- Robot octopus shakes your hand (video) – Researchers at the Scuola Superiore Sant'Anna in Pisa, Italy are creating a robot that mimics the abilities of a real octopus, with a robotic tentacle that can hold your hand or even grab a bottle.

- Robots mania (slideshow) – Several of the latest and greatest robots are shown in this interesting update on the world of Robotics.

Sensors

- Engineers find leaky pipes with Artificial Intelligence – This new technology is implemented as a piece of software located on a computer in the control room of a water company. The software continuously receives and processes data coming from the flow and pressure sensors installed in the water system. It then searches for anomalies indicating the presence of the leak. When a potential problem is identified, an alarm is generated to notify the control room operator. The operator also receives information on the likely location of the leak and suggestions of immediate actions to take to isolate it.

- Nanosensors Made from DNA May Light Path to New Cancer Tests and Drugs – Sensors made from custom DNA molecules could be used to personalize cancer treatments and monitor the quality of stem cells, according to an international team of researchers led by scientists at UC Santa Barbara and the University of Rome Tor Vergata.

- Google patents a glove for 'seeing with your hand' – Google co-founder Sergey Brin is among the inventors listed on a patent issued to the search giant for "Seeing With Your Hand." The concept, in short, is a glove with sensors for viewing a room or controlling a computer with gestures.

- From Your Heart to Your iPhone – A new app gets data from an implanted device and can share it with the patient, doctors, and family.

Simulation/Games

- No end of fun: Make your own video games – Allowing anyone to design compelling video games and characters could open up a new world of gaming. Called Storybricks, the game, developed by London-based NamasteEntertainment, uses artificial intelligence software to allow people to program their own characters and storylines - some of which may continue forever.

Speech Recognition

- Technology Listens as Doctors Keep Talking – With computers, speech recognition software has automated the work of turning a doctor's spoken words into text. Now the speech recognition industry is racing to adapt its products so that doctors can use them to fill out the new electronic forms by talking.

Virtual/Augmented Reality

- From No Doctor to E-Doctors in Rural India – A telemedicine company brings $1 virtual checkups to poor countries. It charges about 80 cents for a consultation with a doctor and about a dollar for diagnostic tests, such as blood tests to measure blood sugar or check for infections.

Wearable Computers

- The art of wearable communication (TED talk) – Artist Kate Hartman uses wearable electronics to explore how we communicate, with ourselves and with the world. In this quirky and thought-provoking talk, she shows the "Talk to Yourself Hat", the "Inflatable Heart", the "Glacier Embracing Suit", and other unexpected devices.

Web 2.0

- Diplomats use wikis and blogs to share vital information –eDiplomacy has transformed internal communications at State department by implementing cheap, open-source technology and putting it behind the firewall. And what better way to move an agency into need-to-share protocols than to integrate technology from the world's leading authorities on need to share, namely social networking sites Facebook, Twitter and Wikipedia.