

# E.I.T. Links

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

“There is nothing more difficult to plan, more doubtful of success, more dangerous to manage than the creation of a new system” - Machiavelli (1469-1527)

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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](mailto:sknode@gmail.com).

Note: This newsletter contains links found during Sep 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](http://www.steveknode.com/news_updates.htm) and previous newsletters are available at: <http://www.steveknode.com/newsletters.htm>.

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

## Links for this Issue

### Artificial Life

- [Artificial life will be created 'within months' as genome experts claim vital breakthrough](#) – Excellent article about how High Frequency Trading takes place without any guidance, blindly following rules. The dangers of such an approach are emphasized.
- [Computers with Commonsense: Artificial Intelligence at the MIT Round Table](#) – New breakthroughs may lead to artificial life

being created soon.

### Brain

[Brain science to help teachers get into kids' heads](#) – NEUROSCIENCE could do for schools what biomedical research has done for healthcare. Better understanding of how the brain works and develops may lead to different teaching strategies.

### Data Mining/Business Intelligence

- [On the digital front line of policing](#) – Akin to some of the 'matrix', the NYPD is now making extensive use of advanced data mining to improve the fight against crime.

### Educational Technology

- [\\$9.99 eBooks will kill Hardcover Books](#) – The combination of the \$9.99 price for bestsellers and the fact that Google now offers millions of out-of-copyright books for free could destroy profits for traditional publishing houses.
- [Welcome to the library. Say goodbye to the books.](#) – One New England prep school has taken the ultimate step of eliminating entirely their traditional library.

### Future

- [10 Technology Products That Will Become a Checkbox Item](#) – Best guess at what might

be the next 10 technology products to emerge and become popular. Interesting items, well thought out.

### Information Visualization

- [DataMasher: Get Freakonomic on Government Data](#) – Now that there is a lot of government data available to the public, programs like Datamasher allow users with no programming experience a chance to compare government data sets on a state-by-state basis.
- [Touchable \(video\)](#) – Touchtable shows the latest in visualizing data on a table with touch interface.
- [Google Releases News-Reading Service](#) – Google has created a news reading service that allows users to view news articles from dozens of major publishers and flip through them as quickly as they would the pages of a magazine.

### Innovation

- [The New, Faster Face of Innovation](#) – Fueled largely by advances in technology, the pace of innovation continues to increase. Technology is transforming innovation at its core, allowing companies to test new ideas at speeds—and prices—that were unimaginable even a decade ago.
- [Innovation: Go to hospital to see computing's future](#) – If you want to know how people will interact with machines in the future, head for a hospital. Many advances in the hospital are examples of what is in store for the rest of us.
- [Innovations in AI and Search \(video\)](#) – An excellent video showing how AI is improving search, driven largely by the ability to develop improved models
- [The Race to Be an Early Adopter of Technologies Goes Mainstream, a Survey Finds](#) – Mainstream public is now racing almost as fast as businesses to adopt new technologies.

- [Google announces project 10^100 Projects](#) – Google is orchestrating a contest to fund projects that will have ‘mega’ impact on lots of people.
- [Filter Your Front Door: Buzzeromatic Makes Doorbells Smarter](#) -- Buzzeromatic allows subscribers to grant access to visitors, allow delivery folks to leave voice messages, and create passwords for frequent guests, all from a web interface with SMS commands for when users are on the go. And yes, there's an app for that.

### Intelligent Agents

- [Camarillo company's AI software interacts on Web in complex ways](#) – Another example of an ‘intelligent agent’ performing operations that normally only humans can accomplish. The agent, for example, uses an artificial intelligence program to provide online chat assistance to customers of different Web sites.

### Machine Learning

- [New Computing Tool Could Lead To Better Crops And Pesticides](#) – This tool can analyze in a matter of minutes which genes are responsible for different processes inside a plant, and how different genes work together. It uses 'machine learning', a set of sophisticated algorithms that allows a computer to 'learn' based on data that it is analyzing.

### Medical

- [Gentle robot improves cancer surgery](#) – This surgical robot can detect tumors far more accurately than humans. The savings are 50% in time, with 40% greater accuracy.
- [Clever Networks CDM-Net E-Health Project launch](#) – A new e-Health network has been launched in Australia. The Chronic Disease Management (CDM) network allows care teams and patients to develop and track personal care management plans — in real-time —

offering great opportunities for more efficient and targeted treatment.

- [Take Two Digital Pills and Call Me in the Morning](#) – A miniature digestible chip that can be attached to conventional medication, sending a signal that confirms whether patients are taking their prescribed pills is being tested. A sensing device worn on the skin uses wireless technology to relay that information to doctors, along with readings about patients' vital signs.
- [Megatrends in Medicine that Will Improve Your Health Care and Your Quality of Life](#) – This is an impressive array of megatrends that will dramatically impact how healthcare is administered in the near future.
- [Plug-and-Play Medicine](#) – In a key practical step toward the long-sought goal of linking different hospital devices together to better manage patients and their care, a Boston research group has come up with a software platform for sharing information among gadgets ranging from blood-pressure cuffs to heart-lung machines.
- [Swine Flu Tracking Map](#) – Another impressive mashup, this one tracking every case of Swine Flu, updated frequently.

### Military

- [BEAR robot roars to the rescue](#) – The US Army has developed a robot which could put rescuers and stevedores out of business. The Battlefield Extraction-Assist Robot (BEAR) can locate victims in mine shafts, battlefields, toxic spills, or earthquake-damaged structures. Then it can lift them up and then carry them over long distances to safety.
- [Military Aims for Instant Repair of Wartime Wounds](#) – The military wants soldiers who can withstand anything - even the worst and most debilitating wartime injuries. Now Darpa, the Pentagon's far-out research team, is trying to make traumatic injuries more like minor scrapes, patched up to be good as new. Or better.

### MISC

- [European researchers use artificial intelligence to create computer lawyer](#) – European researchers have created a legal analysis query engine that combines artificial intelligence, game theory and semantics to offer advice, conflict prevention and dispute settlement for European law, and it even supports policy.
- [ReadWriteWeb's Top 5 Web Trends in 2009](#) – ReadWriteWeb has a presentation on the top five web trends of 2009: structured data; real-time web; personalization; mobile web; internet of things.
- [Cloud rEvolution \(part 1\)](#) – The Leading Edge Forum (LEF) has published an outstanding report on Cloud Computing.
- [Apps.gov Gives Cloud Computing a Slice of the \\$75 Billion IT Pie](#) – The government cloud computing service rumored since late July is here, and companies are jumping at the chance to join Apps.gov, an "online storefront" for cloud services and applications pre-approved for use by federal agencies.
- [World War 3.0: 10 Critical Trends for Cybersecurity](#) – The Internet, private networks, VPNs, and a host of other technologies are quickly weaving the planet into a single, massively complex "infosphere." These connections cannot be severed without overwhelming damage to companies and even economies. Yet, they represent unprecedented vulnerabilities to espionage and covert attack.

### Nanotechnology

- [Ultra-tiny 'bees' target tumors](#) – They're called "nanobees," and they're not insects -- they're tiny particles designed to destroy cancer cells by delivering a synthesized version of a toxin called melittin that is found in bees.

### Neural Networks

- [Artificial Intelligence Helps Diagnose Cardiac Infections](#) – Mayo Clinic

researchers say that "teachable software" designed to mimic the human brain may help them diagnose cardiac infections without an invasive exam. (NOTE: I have taught courses in Neural Networks and have a streaming presentation on neural networks, available from:

[http://www.stevencode.com/streaming\\_presentations\\_main.htm](http://www.stevencode.com/streaming_presentations_main.htm))

## RFID

- [10 Million + RFID Chips in London](#) – The Oyster card is an RFID smart card used for electronic ticketing on London public transport services, notably the London Underground and buses. The Oyster card makes ticketing much more efficient for the consumer: no paper tickets, no handover of cash, little to no interaction with ticketing staff, speedier processing when entering the train station or bus.
- [The Cutting Edge of Smart Cards](#) – The main function of the Suica smart card is payment for train and bus rides. However the card is increasingly being used to make purchases at stores and kiosks within the train stations, as well as in airport stores and taxis.
- [Hong Kong's Octopus Card](#) – The Octopus is used as a form of electronic payment in a wide variety of public transport, shops, restaurants, car parks and more. Indeed the Octopus has become an all-purpose identification system in Hong Kong - it's even used as an access control mechanism at certain offices, apartment buildings and schools.
- [Smart house remembers what you forget](#) – In the future, there will be no more locking your keys in the car, forgetting your mum's birthday or missing that daily dose of medicine. The system uses sensors distributed in the environment to detect your actions and mobile devices to remind you, for example, to let the cat out before you go to bed.
- [IBM's RFID to track Prosthetics](#) – IBM has developed an RFID application to track prosthetics. Prior to shipping prosthetic parts, RFID tags are embedded into the

device with the serial number. Patients can then be notified if there are any updates or recalls.

- [Adding the Analytic Dimension to RFID](#) – Second generation RFID tags can provide and analyze much more information than before, leading to total customization of products to individuals as well as capturing individual preferences.

## Robots

- [Researchers Hope to Mass-Produce Tiny Robots](#) – Tiny robots the size of a flea could one day be mass-produced, churned out in swarms and programmed for a variety of applications, such as surveillance, micromanufacturing, medicine, cleaning, and more.
- [A Modular Robot That Puts Itself Back Together Again](#) (animation) – A walking robot constructed from modules that are designed to separate on impact, find each other and reassemble into a working robot.
- [New Robot Travels Across The Seafloor To Monitor The Impact Of Climate Change On Deep-sea Ecosystems](#) – About the size and weight of a small compact car, the Benthic Rover moves very slowly across the seafloor, taking photographs of the animals and sediment in its path. Every three to five meters (10 to 16 feet) the Rover stops and makes a series of measurements on the community of organisms living in the seafloor sediment.
- [Robots 'to revolutionise surgery'](#) – Within ten years some doctors and scientists are predicting that all surgery could be scarless. It will be possible to insert robots into the body to perform every surgical procedure.

## Search Engines

- [ThisWeKnow: New Semantic Web App Tames Massive Data Sets from Data.gov](#) – ThisWeKnow is a software application that can make use of the massive amounts of data in the government website, data.gov.

- [Aardvark](#) – Send Aardvark a question and it will find the perfect person to answer it, and provide the answer within minutes (free).

### Sensors

- [Implant tracks Implantables](#) – Implanet, a French manufacturer of implantable medical devices, has begun marketing an RFID-based system that it says will help it track the location of its products after they are manufactured and shipped to hospitals, while hospital employees can utilize the system for inventory management, billing, and product recalls and expirations.
- [Intelligent Crutch With Sensors To Monitor Usage](#) – A forearm crutch which incorporates sensor technology to monitor whether it is being used correctly has been developed by engineers at the University of Southampton.
- [Remote Monitoring of the Heart](#) – A 15-centimeter wireless sensor, recently approved by the FDA, holds the promise of reducing hospitalizations by allowing automated early detection of heart failure. The noninvasive device, which costs a few hundred dollars and adheres to a patient's chest, monitors indicators of heart health--including heart and respiration rates, levels of patient activity, and even the accumulation of body fluid--as patients go about their daily lives.

### Speech Recognition

- [Text-to-Speech Technology Reaches an Inflection Point](#) – Significant advances in speech recognition have helped spread the use of this technology into new areas.

### Virtual Reality

- [Augmented Reality in a Contact Lens](#) – A new generation of contact lenses built with very small circuits and LEDs promises bionic eyesight. Many kinds of data can be superimposed onto the eye.

### Wearable Computers

- [From Backpacks to Smartphones: Past, Present, and Future of Wearable Computers](#) – Significant advances wearable computers have opened up new applications and ideas.

### Web 2.0

- [The Real-Time Web: A Primer, Part 1](#) – One of the key important trends developing is the real-time web. This primer, part 1, will cover the fundamentals.
- [The Real-Time Web: A primer, Part 2](#) – A continuation of the first part.
- [The Real-Time Web: A primer, Part 3](#) – A continuation of the second part.
- [Google Wave Opens its Doors](#) – Google wave is equal parts conversation and document, where individuals communicate and work together in a multimedia environment - the wave itself." Users can, for example, write documents, but also insert maps, photos, web feeds, and widgets.
- [California Government High On Twitter](#) – California Governor Arnold Schwarzenegger is turning to Twitter to get ideas on how to help the financially struggling state. He's asking residents to tweet ideas for improving California.
- [Web 2.0 and the Next Generation of Public Service](#) – An excellent document from Accenture on how web 2.0 technologies will likely be used by governments to provide better service to their constituents.
- [Mexican Government is using Twitter, Facebook, Youtube and other Social Media](#) – Mexican government is leveraging web 2.0 technologies to inform the public about important announcements as well as promoting social programs.
- [Facebook and the Government](#) – Even the government has joined the Facebook craze, with several applications highlighted here.