

# 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 anymore. It’s 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](mailto:sknode@gmail.com).*

**Note: This newsletter contains links found during Aug 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>

## Links for this Issue

### **AI General**

- [Ian Pearson on Artificial Intelligence \(video\)](#) – Futurologist Ian Pearson talks about the future of Artificial Intelligence, as well as synthetic biology, organic circuitry, quantum dots and others.
- [Artificial intelligence to make life simpler, even for dummies](#) -- Industry experts are working on projects to challenge and reduce the complexity of systems that have built up in the developed world.

### **Artificial Life**

- [Boeing Demonstrates Swarm Technology](#) – In flight tests over the rugged terrain of eastern Oregon last month, different types of UAVs worked together to search the test area by autonomously generating waypoints and mapping the terrain, while simultaneously sending information to teams on the ground.
- [Swarmanoid the Movie \(video\)](#) – Must see video showing how different types of robots can cooperate to achieve a mission without any human intervention.

### **Brain**

- [Living online is changing our brains](#) – Susan Greenfield provides an interview in which she makes a strong case that online living is changing our brains.
- [IBM produces first working chips modeled on the human brain](#) – Big Blue announces that it, along with four universities and the Defense Advanced Research Projects Agency (DARPA), have created the basic design of an experimental computer chip that emulates the way the brain processes information. IBM’s so-called cognitive computing chips could one day simulate and emulate the brain’s ability to sense, perceive, interact and recognize — all tasks that humans can currently do much

better than computers can.

- [The Rise of the Thinking Machine](#) – Several efforts along the lines of the IBM story are chronicled here, including the Spinnaker project, the FACETS project and other efforts to model the human brain.

### Chatterbots

- [Non-human DJ gets radio gig](#) – One of the most advanced chatterbots, Denise, now has her own radio show. (NOTE: I am working on a Denise-like bot using this technology.)
- [Seeing the Future of the Office Internet](#) (video) – Intriguing demonstration of the ability of ‘chatbots’ to assist, even today. Cisco’s chief futurist predicts digital avatar assistants—and more.
- [Viral video: what happens when two chatbots try to have a conversation](#) – As this video shows, there is still a long way to go if chatbots are to communicate with each other.

### Data Mining/Business Intelligence

- [By Aligning Databases, Scientists Match Old Drugs with New Diseases](#) – To see if drugs already FDA-approved for certain diseases could be used to treat other conditions, scientists lined up two online databases and discovered two drugs that, when tested in mice, worked against diseases they’d never been meant for, suggesting that mining of such information could be a fertile strategy for finding new treatments.

### Educational Technology

- [Take Stanford's 'Introduction to Artificial Intelligence' Course](#) – The "college experience" as we’ve known it for the last 50 years is beginning to break apart. The disaggregation of education is visible all over the place. Knowledge once transmitted in very specific places to very specific people for a set amount of money is spreading in new ways. That Stanford is

now offering its "Introduction to Artificial Intelligence" course online for free to anyone who wants to take it is a new and exciting example of this trend. (NOTE: At last count, over 100,000 have signed up for the course, including me.)

- [Professors Cede Grading Power to Outsiders—Even Computers](#) – The best way to eliminate grade inflation is to take professors out of the grading process: Replace them with professional evaluators, or computers, who never meet the students, and who don’t worry that students will punish harsh grades with poor reviews.
- [2011 Campus Technology Innovators](#) – Out of a total of 393 entries, 10 winners rose to the top in six categories: Leadership, Governance, and Policy; Teaching and Learning; Student Systems and Services; Administrative Systems; IT Infrastructure and Systems; and Education Futurists. These innovative IT leaders have tackled unique tech challenges and forged their own paths to support technology change on campus.
- [Khan Academy Integrates With Digital Textbooks](#) – The 12-minute video lectures that Bill Gates has called “the start of a revolution” will now be linked with the material in some digital textbooks. Etextbook maker [Kno](#) announced Monday that it will integrate thousands of tutorial videos from Khan Academy into its books.

### Future

- [World’s first hydrogen fueling station powered by sewage opens in California](#) – Residents of California can take a trip to Orange County and find the world’s first sewage-powered refueling station. Located just off the 405 freeway, the station is located next to the Orange County wastewater treatment plant in Fountain Valley. The hydrogen fuel offers about 70 miles per gallon and the station can fuel up to 50 automobiles per day with the daily 120 kilograms of hydrogen gas produced at the plant. In order to produce the hydrogen gas, sewage is processed to collect methane.

### [Genetic Algorithms/Evolutionary Programming](#)

- [Evolutionary computation offers flexibility, insight](#) – Esmail Bonakdarian, Ph.D., an assistant professor of Computing Sciences and Mathematics at Franklin University, has developed an evolutionary computation approach that allows researchers to search for models that can best explain experimental data derived from many types of applications, including economics.

### [Information Visualization](#)

- [Timeline of Systematic Data and the Development of Computable Knowledge](#) – Great graphic helps portray the development of ‘computable knowledge’ over time.

### [Innovation](#)

- [Air Power: New Device Captures Ambient Electromagnetic Energy to Drive Small Electronic Devices](#) – Researchers have discovered a way to capture and harness energy transmitted by such sources as radio and television transmitters, cell phone networks and satellite communications systems. By scavenging this ambient energy from the air around us, the technique could provide a new way to power networks of wireless sensors, microprocessors and communications chips.
- [A Dozen Economic Facts About Innovation](#) – Take a look at these interesting and, in some cases, surprising facts about innovation.
- [Square Transforms Your Phone Into a Credit Card Machine – Now Handling \\$4 Million A Day!](#) – A tiny phone attachment is helping credit cards become a truly universal currency. The **Square** mobile reader allows anyone with a smart phone, iPod, or iPad to accept plastic anywhere. Just plug in the little square box to your mobile device, swipe a card, and your money is transferred to you just like it would be with any major retailer.

- [Company Scans Your Books For a Dollar – Ship ‘Em In, Get a PDF via Email](#) – 1DollarScan does exactly what its name implies: it scans your documents for a dollar. 100 pages of a book, 10 pages of a business document, 10 business cards, etc. – you just mail the text in and 1DollarScan will email you back a PDF.

- [Texting While Driving... Are You Crazy? Get iSpeech and Talk to Your Phone Instead](#) – Texting while driving leads to thousands of accidents each year in the United States alone, and the death toll continues to rise. Luckily, text to speech technology is coming to the rescue. **Drive Safe.ly** is a mobile app (now available on Blackberry, Android, and iPhone) that reads your texts, Twitter feed, and emails aloud. You can even respond to incoming messages with voice commands and speech to text conversions.

- [Multimedia Reporting Tool Storify Now Available to Public](#) – Storify, a tool that enables professional and citizen journalists to craft multimedia narratives by dragging and dropping articles, tweets, Flickr photos and online videos onto a single, embeddable page, has entered public beta. More than 5,000 sites, including *The New York Times*, *The Washington Post* and NPR have embedded Storify stories, amassing more than 13 million views, 4.2 million of which were accumulated in March alone.

### [Intelligent Agents](#)

- [Computerized Trading Agents Do Beat Humans in Foreign Exchange Markets](#) – Robot trading agents, which already dominate the foreign exchange markets, have now been definitively shown to beat human traders at the same game.

### [Knowledge Management](#)

- [Diffbot helps apps read the web like humans](#) – Diffbot’s technology uses visual learning robotics and artificial intelligence to view content on the web visually, instead of parsing the underlying HTML code. It sounds a little geeky, but it provides a way for developers and publishers to analyze the

web and organize it in ways that are very easy to digest for people, especially mobile users.

### Manufacturing

- [Now anyone can design and evolve 3-D printable objects interactively](#) – Forget draft tables and complicated computer-aided design programs: You dream it. Endless Forms helps you design it. Cornell University's new interactive website, EndlessForms.com, allows anyone to point, click, collaborate and create online in the evolution of printable, three-dimensional objects — without any technical knowledge and using the same principles that guide evolutionary biology

### Medical

- [Beyond the Breathalyzer: Seeking Telltale Signs of Disease](#) – Scientists are building sophisticated electronic and chemical sniffers that examine the puffs of exhaled air for telltale signs of cancer, tuberculosis, asthma and other maladies, as well as for radiation exposure.
- [Greatest discovery since penicillin: A cure for everything - from colds to HIV](#) – Scientists may have found a cure for the common cold, flu, HIV – and almost any other virus you can think of. A drug that homes in on infected cells and makes them self-destruct has been created in the laboratory.
- [Gene Therapy Brings Three Cancer Patients Back From Death's Door; What Now?](#) – With three leukemia patients at the ends of their ropes, scientists modified some of their immune cells with a gene that enabled them to hunt down cancer cells. Remarkably, the treatment wiped out more than two pounds of tumor tissue in each patient, and the three have now been in remission for a year.
- [Doing away with the dentist's drill by helping teeth regenerate themselves](#) – The fear of having a mechanical drill crammed into one's mouth is enough to keep many people from regularly seeing a dentist. New technology developed by researchers at the

University of Leeds that is based on knowledge of how the tooth forms in the first place could soon be providing a pain-free way of tackling the first signs of tooth decay. It uses a peptide-based fluid that is literally painted onto the damaged tooth's surface to stimulate the tooth to regenerate itself.

### Military

- [The Army's Bold Plan to Turn Soldiers Into Telepaths](#) – As improbable as it sounds, synthetic telepathy, as the technology is called, is getting closer to battlefield reality. Within a decade Special Forces could creep into the caves of Tora Bora to snatch Al Qaeda operatives, communicating and coordinating without hand signals or whispered words. Or a platoon of infantrymen could telepathically call in a helicopter to whisk away their wounded in the midst of a deafening firefight, where intelligible speech would be impossible above the din of explosions.

### MISC

- [Can Video Kill the Credit-Card Form?](#) – The days of tediously having to punch in credit-card details whenever you make an online purchase may be numbered, thanks to a new payment system that turns any webcam into a credit-card reader.
- [Now, Even Granny's Fuzzy Slippers Are Texting You](#) – A growing number of engineers, working for giant telecommunications companies or small start-ups, inventing products that can send messages—from a diaper that lets parents know their baby needs changing, to slippers that can tell when your grandmother might be headed for a fall, to a device that lets farmers know when cows are in the mood.
- [One box of Girl Scout cookies worth \\$15 billion](#) (video) – Rice University lab shows troop how any carbon source can become valuable graphene. The value of such can be immense, possibly.
- [Searching for Intelligent E-mail Agents](#) – A growing number of products and research

efforts aim to ensure that e-mail overload doesn't cancel out the productivity-enhancing benefits of IT. Google's Gmail "Priority Inbox" is an early effort in this direction. The feature adds a special icon to messages it judges to be important, allowing users to tend to them first.

- [Researchers create first animal with artificial genetic code](#) – Researchers say they have created the first ever animal with artificial information in its genetic code. The technique, they say, could give biologists 'atom-by-atom' control over the molecules in living organisms.
- [Bulbs could soon be used to broadcast household broadband](#) – Light bulbs could be soon used to broadcast wireless Internet, a leading physicist has claimed. By simply turning on the light in the room you could also switch on your Internet connection.

### Robots

- [Robot learns from experience](#) (video) – A robot outfitted with a rudimentary brain-like neural network is able to tackle new tasks by calling on its past experience and knowledge to think and act for itself. This breakthrough demonstrates the evolving ability of robots to adapt to ever-changing environments.
- [Making Robots Human \(mp3\)](#) – Photographer Max Aguilera-Hellweg and Siddhartha Srinivasa, Professor at the Robotics Institute at Carnegie Mellon University, talk about the future of robots and how robots are becoming more human. With advances in technology that allow robots to speak, blink, smile and perform such tasks as folding clothes and cooking, questions are being raised as to how human is too human.
- [Do Androids Dream of Stealing Your Job?](#) As more and more employers put artificial intelligence to work, any position involving repetition or rote memorization is at risk of extinction. Mere mortals will lose out on jobs like bookkeeping, bank telling, and accounting. Realtors, if they want to stay in business, will trade in gossip (where to find an apartment with a dishwasher, which neighborhoods have the best takeout) rather

than legwork: all paper transactions can be easily made digital.

### Sensors

- [Averting Bridge Disasters: New Technology Could Save Hundreds of Lives](#) – Researchers have created tiny wireless sensors that monitor and transmit minute-by-minute data on a bridge's structural integrity. A central computer analyzes the data and instantly warns officials of possible trouble.
- [A Sensor-Packed Shipping Container That Folds Flat in 30 Seconds](#) – In the half-century since Malcom McLean, an entrepreneurial former trucker from North Carolina, first began packing freight onto ships in uniform steel boxes, shipping containers have transformed the way we move most of the goods on Earth. As McLean recognized, cargo with consistent dimensions becomes a commodity. Any box can go anyplace on any ship, and therefore can be moved and stored far more cheaply and quickly than cargo that comes in a hodgepodge of shapes and sizes.
- [LifeNet, a piece of software that allows people to communicate after disasters](#) – LifeNet is free open source software, which enables consumer-devices like laptops, android phones and battery-powered routers to instantly form an ad hoc WiFi network without any infrastructure like towers / base stations. It is ideal for providing connectivity in areas where communication infrastructure is destroyed or does not exist.
- [Tattoo-Like Sensors Monitor Brain and Muscles](#) – Electronics have been successfully transferred from a dissolvable carrier to the skin, enabling tattoo-like sensors to monitor brain waves and muscle actions for everything from remote medical diagnosis to immersive gaming to spy-inspired covert surveillance.

### Simulation/Games

- [Why Playing Games Could Be the Next Big Thing for Business](#) – Gamification -- the application of online game design

techniques in non-game settings -- has been quickly gaining the attention of leaders in business, education, policy and even terrorist communities. But gamification also has plenty of critics, and the debate over its future could become an epic battle in the same vein of many online game favorites.

### [Wearable Computers](#)

- [Personal Security](#) – Many medical implants, such as insulin pumps and pacemakers, are equipped with wireless radios that let doctors download data about the patient's condition and adjust the behavior of the implant. But these devices are vulnerable to hackers who can eavesdrop on stored data or even reprogram the implant, causing, for example, a pacemaker to shock a heart unnecessarily. While it may be possible to engineer new, more secure implants, millions of people are walking around with vulnerable devices that can't be replaced without surgery. An anti-hacking device presented this week at the annual SIGCOMM communications conference in Toronto may offer them a solution.

### [Web 2.0](#)

- [FBI releases new iPhone app for identifying missing children](#) – The FBI has released its first mobile application, the FBI Child ID App for iPhone, designed to help locate and identify missing children. Early responses from parents are enthusiastic, but they also suggest the application could be missing an important feature.
- [VA promotes social media use with new policy](#) – The Veterans Affairs Department issued a social media policy Tuesday that "highly encouraged" the use of blogs, Facebook, Twitter and other Web-based media and urged VA employees to interact with the public online.
- [Mobile apps are reshaping government services and operations](#) – Federal agencies so far have launched about 75 mobile apps aimed at everything from allowing citizens to more easily browse proposed legislation to

helping anglers alert their peers when they've just released a short fin mako shark. Many of the biggest innovations in the government apps sphere, though, are happening at the state level.

- [More Than 1 Million Download Socialcam So They Can Share iPhone Video Instantly](#) – The social network has taught us to love sharing our thoughts at the speed of light, and now our mobile videos are ready to follow suit. **Socialcam**, Justin.Tv's free app for **iOS** and **Android**, allows you to instantly upload your videos, tag your friends, and see what everyone else is doing at the same time.