

# E.I.T. Links

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

“My father lost his job because his plant bought a machine capable of doing everything my father can do. It wasn’t so bad, until my mother went out and bought one also.”  
 ~Woody Allen

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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 Jan 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>.

### Links for this Issue

#### AI General

[A.I. comes of age](#) – Several real world examples of Artificial Intelligence in action are contained in this article. A very good update on some of the tremendous progress in AI developments.

#### Artificial Life

- [Mind-controlled robotic limbs become the ants-pants](#) – The innate intelligence of ants is helping Australian-based scientists develop prosthetic limbs that respond to brain signals in groundbreaking research that could change the lives of amputees.

#### Brain

- [Your amazing brain: Top 10 articles from 2008](#) – Here are the top 10 brain-related articles from 2008. Fascinating reading and an excellent update.
- [New Ways to Boost Memory](#) – Scientists are developing new ways to selectively boost gene expression in the brain, in the hope of treating psychiatric and neurological disease. A growing pool of evidence shows that compounds that target this mechanism can improve learning and memory in rodents.
- [Inside the Savant Mind: Tips for Thinking from an Extraordinary Thinker](#) – A lot of learning about the functioning of the human brain can be gleaned from studying how savants perform.
- [How Technology May Soon "Read" Your Mind](#) – Neuroscience research into how thinking takes place is rapidly progressing. Some predict we will be able to peer into the brain and read ‘thoughts’.
- [How the city hurts your brain](#) – Apparently, the overwhelming stimulation of a large city impairs basic mental processes.
- [Understanding and Recreating Human Intelligence](#) – Jeff Hawkins, founder of Palm Computing and Handspring, presents his views on what it will take to recreate human intelligence (includes video).

### Data Mining

- [Tesco: 'Wal-Mart's Worst Nightmare'](#) – Even Wal-Mart is not immune from competition. Tesco, a British retailer, is vowing to take on Wal-Mart and not only copy them, but improve on them. Tesco's secret weapon: Data Management.

### Decision Making

- [Our Unconscious Brain Makes The Best Decisions Possible](#) – Surprising results from recent research seem to indicate that, contrary to conventional wisdom, human brains make the best decisions possible with the information given. Several cautions are in this article, but the results are surprising nonetheless. (NOTE: For more on this type of decision making, read BLINK or visit: <http://www.gladwell.com/blink/index.html>)

### Educational Technology

- [The 2009 Horizon Report](#) – An excellent yearly report focused on how technology is affecting education. I have found past Horizon reports to be **outstanding, both in content and relevance**. They do an outstanding job of **specifying technologies** that are making a difference, **identifying key trends**, and **presenting challenges** associated with the technologies and the trends.
- [Teaching intangibles with technology](#) – Discussion software that can assist in conversation mapping and provide not only quantitative information, but also qualitative data is now available.
- [At M.I.T., Large Lectures Are Going the Way of the Blackboard](#) – At MIT, professors are replacing the traditional large introductory lecture with smaller classes that emphasize hands-on, interactive, collaborative learning.

### Future

- [Singularity Summit 2008 Reviewed](#) – One of the most fascinating conferences each year is the Singularity Summit. The world's best futurists give outstanding presentations about where we are headed.
- [Singularity Summit 2008 videos](#) – A set of outstanding videos from the Fall 2008 summit are now available. These presentations represent some of the most fascinating and important views of the future.
- [Top 10 Forecasts for 2009 and Beyond](#) – Another great set of forecasts for the future from experts from the Futurists Society. Many of these forecasts are relevant for all.

### Information Visualization

- [Information R/evolution \(video\)](#) – An interesting and thought provoking video which explores the changes in the way we find, store, create, critique, and share information.
- [Visualizing the Passage of Time](#) – A new product, Dipity, allows easy creation of a timeline with videos, pictures, blog entries, etc. You can register for a free account.
- [New tool enables powerful data analysis](#) – Scientists can now extract data from large, complex sets easier than before, leading to better decisions and insights.

### Innovation

- [The Innovation Agenda: Are Lawyers Stuck in GM's Tire Tracks? \(first of three parts\)](#) – Innovation in the legal profession is coming. Interesting ideas are presented here, including the concept that most innovation in the legal profession will not necessarily come from the entrenched institutions. (NOTE: Part 2 is available entitled : [Are You Betting Against the Web?](#) and part 3 is [What's Wrong with Law School?](#))
- [Whatever Happened to Silicon Valley Innovation? \(accompanying video\)](#) – Some of the innovator's mentality seems to have disappeared from the Silicon Valley area.

However, there are still many pockets of innovation in the area.

- [How Can Web Tech Help Enterprises with Innovation Management?](#) – Web 2.0 technologies are facilitating a new wave of innovation. Some excellent examples are contained in this article.

### Intelligent Agents

- [AI-based virtual agent for call centers lowers costs, improves caller experience](#) – A virtual interactive voice response system call center operator that can hold smart productive conversations has been developed. This is the latest in customer response management technology.
- [Sensei for Weight Loss -- Now On The iPhone -- Adds Budget Friendly Features to Its Popular Weight Loss Program](#) – An intelligent agent assists in weight loss by providing coaching and developing personalized meals.

### Manufacturing

- [Clothing with a brain: 'Smart fabrics' that monitor health](#) – Now, e-fibers can be incorporated into material. These fibers can detect be used to detect bleeding in soldiers or monitor diseases and vital signs.
- [Fuel from Coal-Eating Microbes](#) – Microbes can convert coal into natural gas. The process could help reduce emissions.
- ['Make' magazine debuts television series](#) – Make magazine now has videos for those who are truly innovative. Mixing old and new technology, Make magazine shows how to make unusual items.

### Medical

- [Body repair 'could be ramped up'](#) – New drugs can trick the body into ramping up its repair mechanisms and repair tissues much more rapidly.

- [Edible technology relays medical data from inside the body](#) – Digestible sensors that are made of food products are activated by stomach fluids. Once swallowed, the sensors can send a digital signal through the body to a receiver. The receiver date- and time-stamps, decodes, and records information about the drug and the dosage. It also measures and reports heart rate, activity, and respiratory rate.
- [Microbot motors fit to swim human arteries \(Video\)](#) – Interesting video of the latest microbot motor which can be injected into an artery.
- [A Digital Health-Care Revolution](#) – There is a positive relationship between the degree of “wiredness” and the efficacy of a hospital according to a recent study. There is now a plan to continue the march toward a more electronic health care system.

### Military

- [DOD seeks virtual versions of military parents to talk to kids at home](#) – DoD has begun accepting proposals for the development of a virtual parent to substitute for deployed military moms and dads.
- [Coming to the Battlefield: Stone-Cold Robot Killers](#) – For several years progress toward robots that can engage in battle has continued. This is the latest update on several amazing developments in this area.
- [MIT Sending Smart Robots Into War Zones to Save Lives](#) – MIT now has a robot forklift that can be used in a war zone to keep soldiers out of danger.
- [The Army's Remote-Controlled Beetle](#) – Yet another example of the miniaturization of robots for use by the Army.

### MISC

- [What Will Change Everything?](#) – The futurist organization EDGE has an annual question for the big thinkers to answer. This year’s question---What will change everything? Read the very interesting answers from prominent thinkers.

- [Top Technology Breakthroughs of 2008](#) – A summary of some very interesting and important technology breakthroughs for 2008. Several of these will have a significant impact on our society.
- [Immoral advances: Is science out of control?](#) – Many advances in science would shock our parents and grandparents, yet are becoming accepted today. However, there is somewhat of a moral backlash against some developments.
- [The Digital Road to Recovery: A Stimulus Plan](#) – An interesting alternate stimulus plan which emphasizes developing our digital resources to revitalize the economy.
- [Designing Executive Dashboards - Part 1](#) – Executive dashboards are becoming more popular. If you are not familiar with the dashboard concept, this article will refresh you. NOTE: There is a link to part 2 of this series at the bottom of the article.
- [Engineering Edible Bacteria](#) – How would you like to have bacteria that can fight cavities, produce vitamins, and treat lactose intolerance? All soon to be possible.
- [Reflections on a Crisis \(Video\)](#) – Two of my favorite big thinkers, Nicholas Taleb (Black Swan author) and Daniel Kahneman (Nobel prize winner) reflect on how the economic bubble burst and what should have been done to prevent it.

### [Nanotechnology](#)

- [Nanotechnology's biggest stories of 2008](#) – Tremendous progress was made in the world of nanotechnology during 2008. Read here about some of the most dramatic breakthroughs.
- [Nanobot lets DNA legs do the walking](#) – The major development needed for nanotechnology to take off is the molecular machine. This article shows that we are getting much closer to just such a development.

### [Neural Networks](#)

- [Predicting Breakdowns](#) – I have long discussed the coming change in approach to maintenance described in this article. Instead of waiting for something to break and then fixing it, why not fix it before it breaks! Sound impossible, not with a combination of embedded sensors and neural networks to predict breakdowns prior to their occurrence.

### [Quantum Computing](#)

- [New record for information storage and retrieval lifetime advances quantum networks](#) – If you are keeping track of developments in the world of quantum computing, this new record is a significant development. NOTE: Although the concepts behind quantum computing are complex and not easily understood, the ultimate success of the quantum approach will be extremely important.

### [RFID](#)

- [Smart Bottles Reduce Glass Breakage](#) – There are many applications emerging which involve RFID sensors and chips. This is one of the more interesting ones. By embedding RFID smart sensors into glass bottles as they are produced, these ‘smart’ bottles can report on their likelihood of breakage prior to it happening!
- [RFID Works for Big Brother](#) – One of the most popular TV shows, Big Brother, is now using RFID chips to track the show’s members. The software also allows producers to analyze location data, to determine such things as how long a particular participant spends in any one location—such as in bed, or in the garden—and when, as well as the length of time one participant spends with another.

### [Robots](#)

- [Robots for Healthcare Final Report](#) – An **outstanding** indepth report on how robots can and are being used in healthcare. This report includes case studies, information on

technological advances, and a discussion of cultural implications.

- [Video: the year in robots](#) – In case you missed it, here are videos of the most impressive robotic developments of 2008.

### [Search Engines](#)

- [Searchme, A Visual Search Engine](#) – Searchme presents search information in a more visual manner, thereby improving how relevant links are identified.

### [Semantic Web](#)

- [Semantic E-Mail Delivery](#) – A prototype e-mail system being tested at Stanford University later this year will radically change how users specify where their messages are supposed to be delivered. Called SEAmail, for "semantic e-mail addressing," the system allows users to direct a message to people who fulfill certain criteria without necessarily knowing recipients' e-mail addresses, or even their names.
- [Did Google Just Expose Semantic Data in Search Results?](#) – Google appears well on its way to developing its version of the Semantic Web. The examples in this article show how Google can connect the dots and put information into the proper context.
- [Expert System Brings Semantic Smarts to Advertising](#) – This company promises to transform unstructured information into structured data. Another example of the progress being made in moving toward the Semantic Web.

### [Sensors](#)

- [intelligent pill targets drug development and treatment for digestive tract diseases](#) – We now have an intelligent pill, the iPill, which can be swallowed and traverse the digestive track while dispensing medicine appropriately via preprogrammed instructions.

- [The Glucose-Monitoring Tattoo](#) – A novel nanosensor can now be used for skin-based glucose sensing. As the glucose level increases, the "tattoo" would fluoresce under an infrared light, telling a diabetic whether or not she needs an insulin shot following a meal.
- [Sensor in artery measures blood pressure](#) – There is now an implantable sensor which can automatically take blood pressure readings 30 times per second and transmit the readings to an external recording device for relay to medical personnel.

### [Simulation](#)

- [Building Safer, Superior Stents](#) – Researchers at MIT have developed a computer model that simulates the dynamics of blood flowing around a drug-eluting stent. This allows them to evaluate how the drug is released and distributed over time in the arterial wall.

### [Virtual Reality](#)

- [Virtual World Research, Part 1: A Place to Experiment](#) – Universities and government agencies are conducting all sorts of research, scientific and social, in virtual worlds because of a combination of low cost and excellent fidelity. NOTE: Here is a link to [part 2 of this article](#).

### [Web 2.0](#)

- [US to use Web 2.0 to win "war of ideas": US image-maker](#) – The United States is embracing social networks and other Web 2.0 tools to win the "war of ideas" with Islamic militants and other extremist groups
- [The Machine is Using Us \(video\)](#) – Fascinating video illustrating the tremendous progress and change in how the web is being used to change our world of information.
- [Post Anything, Anywhere](#) – Pixelpipe allows posting of almost any type of

information item to any other item. Images, pdf files, videos, etc. can be posted to a large variety of documents and sites.

- [Crowd-Sourcing the World](#) – Tapping into human expertise to tackle problems that computers struggle with is also a growing business: people will work on these tasks, even for pennies.
- [The Unforeseen Consequences of the Social Web](#) – The social Web has given users great power: the ability to create and share content with people around the world - easily and quickly. The problem of course, is that power is often not compatible with effective and clear thinking. The thought that germinated in an instant can be immortalized in perpetuity on the Web.
- [Wiki Your Town Council](#) – A new effort seeks to create a database on all elected US officials. This includes an ambitious new effort to create a central repository of data on all 513,000 U.S. elected officials, down to village councilor and sewer district board member.
- [10 Ways Social Media Will Change in 2009](#) – As social media continue to evolve, many significant changes are in store for the upcoming year.