

E.I.T. Links

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

“Sometimes I wonder whether the world is being run by smart people who are putting us on or by imbeciles who really mean it.” -Mark Twain. ”

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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.

Note: This newsletter contains links found during December 2007 and January 2008, 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

Links for this Issue

Future

- [Visions of the Future](#) – The BBC has produced the first of a three part series, Visions of the Future. The first part, the Intelligence Revolution, is found here. This is one of the best videos I have ever seen to give a feeling of the future.
- [Five Innovations that Will Change Our Lives Over the Next Five Years](#) – For a broader look at what is likely make our world markedly different, check out these predictions.
- [Networked, Smarter Homes](#) (includes video) – Our homes are getting smarter and more capable. Check out the new options

including the use of sensors.

- [Gates hails age of digital senses](#) – Bill Gates has some remarkable predictions about how our senses will become our new way of interacting with our computers.

Sensors

- [Microchips Everywhere: a Future Vision](#) – Here's a vision of the not-so-distant future: -Microchips with antennas will be embedded in virtually everything you buy, wear, drive and read, allowing retailers and law enforcement to track consumer items - and, by extension, consumers - wherever they go, from a distance.
- [Delivering Drugs with MEMS](#) – As the size of sensors continues to shrink, the use of such sensors to smartly deliver drugs will continue to develop.
- [Cheap sensors could capture your every move](#) (includes video) – Sensors could actually capture every moment of your life. Some are already doing just this.
- [Brain Sensor for Market Research](#) – Claims to be able to read minds have been around for some time. However, it looks like it can be actually done (sort of), or at least beginning to be accomplished.
- ['Nanocavity' Sensor Detects Virus-Sized Particles](#) – Another medical application of sensors, this time to detect virus-sized particles, perhaps useful in biosensor situations.

- [Surveillance Society: New High-Tech Cameras Are Watching You](#) – In the era of computer-controlled surveillance, your every move could be captured by cameras, whether you're shopping in the grocery store or driving on the freeway. Proponents say it will keep us safe, but at what cost?
- [Smart Badges Track Human Behavior](#) – There are conference badges to collect data on people's interactions and visualize the social network. New research from MIT's Media Lab has shown that a sensor-laden conference badge might be able to help people venture out, form new connections, and gain insight into how they interact with others at such events.
- [Intelligent foam could keep shop shelves stacked](#) – How about sensors that can tell you when the shelves need to be restocked? Very useful application of sensor technology.

Neural Networks

- [Artificial intelligence in 'power' prediction](#) – As you know, I am a big fan of neural networks for applications where pattern recognition is key. Here is an application showing how neural networks can be used to forecast power consumption.
- [Technology tunes into our emotions](#) – Another example of the neural network approach, this time to track changes in facial expression, trying to detect different emotions.
- [Zoodango - Artificial Intelligence?](#) – Zoodango will be the first website to use highly computational math and neural networks to help users make decisions on "where" and "when" to meet up with friends.
- [Elevators with brains](#) – Ever wondered how elevators figure out which floor to sit on? Well, some of them use neural networks to learn patterns of use.

Educational Technology

- [PBS Lets Kids Play in Virtual Educational 'Neighborhood'](#) – This virtual neighborhood

is designed to let children 3 to 6 play and learn with the help of characters such as Curious George and The Berenstain Bears. Activities will be added every week featuring Bob the Builder, Thomas & Friends and characters from Mister Rogers' Neighborhood.

- [Internet opens elite college materials to all](#) – An MIT initiative called "OpenCourseWare" makes virtually all the school's courses available online for free — lecture notes, readings, tests and often video lectures.

Brain

- [A Working Brain Model](#) – An ambitious project to create an accurate computer model of the brain has reached an impressive milestone. Scientists in Switzerland working with IBM researchers have shown that their computer simulation of the neocortical column, arguably the most complex part of a mammal's brain, appears to behave like its biological counterpart.

Search Engines

- [Ask.com's new 'eraser' will scrub search requests from its computers](#) – A new tool will help you prevent your searches from being added to a database. Those concerned with privacy will enjoy this feature.
- [Google's director of research talks about the evolution of Web search](#) – If you are curious about the future of web search, this article will enlighten you.
- [Find Music with your Voice or Keyboard](#) – You can now search for music by singing or playing a few notes from the song you are seeking! Check it out.

Medical

- [Argosy Visible Body Out in Beta](#) – Argosy Publishing, Inc. has finally released their impressive 3D anatomic visualization system to the public through their Internet Explorer only site. Requiring an installation of an ActiveX controller, the browser

becomes a powerful tool to look at the body at every depth and from every angle, browse through the various anatomical systems, and easily locate obfuscated and hard to see details.

- [E-noses Could Make Diseases Something to Sniff at](#) – The use of smells to identify diseases is highlighted in this article. By using, Certain diseases have distinct odors which can be recognized based on their patterns.
- [Tiny Living Machines](#) -- Devices made of heart tissue could screen drug candidates and be used to power implantable robots.
- [A New Approach to Medical Education](#) – The acceleration of biomedical understanding is now so rapid that by the time a student graduates from medical school, much of what he or she learned may be outdated or even irrelevant. A new approach, emphasizing team orientation, is emerging.
- [Medical Silhouette Mobile](#) – Remember the medical tricorder from Star Trek? Well, this is the latest and most amazing approach to the same concept.

[Nanotechnology](#)

- [Technology Roadmap for Productive Nanosystems](#) – If you are curious as to how we will eventually get to nanosystems that can produce objects, this article lays out a very detailed roadmap that the community has accepted.
- [NNI Strategic Plan](#) – The National Nanotechnology Initiative has published their new strategic plan, available here. The plan describes the vision, goals, and priorities of the NNI.
- [The Year in Nanotech](#) – If you want to know what specific progress was made in nanotechnology during 2007, this article will give a good update.
- [No More Thumbprints](#) – A nanotechnology success story, microspheres which have led to super oil-repellent materials that are self-

cleaning.

[Artificial Intelligence - General](#)

- [Creativity--The Last Human Stronghold?](#)– As AI and machines continue to progress in doing the things that heretofore humans have always done, the question becomes what remains for humans to do. This article looks at innovation and creativity as being the last frontier. There is an interesting historical perspective in the article.

[Robots](#)

- [The Year in Robots](#) – This year (2007) robots moved ever closer to doing more things we as humans thought only we could do. From battlefields to healthcare, robots are on the move. The link includes a video of a violin-playing robot.
- [Monkey brains use web link to control robot legs](#) – Would you believe that brain signals from monkeys in North Carolina can control a pair of robot legs in Japan?
- [Your Robotic Personal Assistant](#) – New software lets robots pick up objects they have never seen before--an important step toward creating multifunctional domestic helpers.
- [The Robots Among Us](#) – The use of impressive robots continues to amaze. This is a good summary of how robots are being incorporated into everyday life.
- [Honda networks robots to work in pairs](#) – Honda has the first robots to work together, adding to their capability. They also share information seamlessly.
- [Humanoid could teach Japanese dentists to feel people's pain](#) – Japan's future dentists may soon be able to better appreciate patients' pain by training on a humanoid robot that can mumble "ouch" when the drill hits a nerve.
- [Robot Dinosaur Finally Released](#)– I have previously mentioned Pleo, the robot dinosaur. This toy blurs the distinction between pet and toy.

[Manufacturing](#)

- ["Smart" tires can warn of impending flat](#) – An experimental tire can sense damage and warn drivers of a potential flat, U.S. researchers said on Tuesday, offering the latest advance in "smart" car technology.
- [3D tissue printer](#) – Save your printers, you might need them to print almost anything from skin and bone to pancreatic or nerve tissue – an exciting idea with huge potential.

[Semantic Web](#)

- [Innovative computer system could facilitate global fish stock management](#) – There are plans to utilize a semantic web application to assist in the prevention of depletion and overfishing of world fish stocks.

[Miscellaneous](#)

- [Tech Designing With Thought](#) – Here is an excellent interview with one of my favorite authors and thinkers, Don Norman, who discusses the future of human-computer interaction.
- [2007: Top 10 technology videos](#) – The top 10 technology videos are here at this link. Very interesting viewing, many of the videos feature robots.
- [Science Breakthroughs of the Year](#) – The top 10 science breakthroughs of 2007 are profiled here. Some of them are rather startling.
- [Transforming Communication](#) – With the new Ribbit approach, users can have all of their phones ring when a call arrives or have one phone make the others quiet, etc. Interesting development.

[Knowledge Management](#)

- [Online library gives readers access to 1.5 million books](#) – Anyone who can get on the Internet now has access to a collection of books the size of a large university library.

- [Google Plans Service to Store Users' Data](#) – Google is preparing a service that would let users store on its computers essentially all of the files they might keep on their personal-computer hard drives -- such as word-processing documents, digital music, video clips and images. The service could let users access their files via the Internet from different computers and mobile devices when they sign on with a password, and share them online with friends.

[Genetic Algorithms](#)

- [Nymbler: the newest baby name toy](#) – Here is an example of a genetic algorithm being used for something very unique--- developing new baby names.

[Machine Learning](#)

- [Software That Learns from Users](#) – An update on one of my favorite applications, CALO (Cognitive Assistant that Learns and Organizes). CALO will be, if successful, one of the most innovative and creative uses of multiple artificial intelligence technologies, a personal assistant. If you are not familiar with the project, this will get you caught up.

[Kurzweil](#)

- [The Future of AI](#) (audio) – One of my favorite futurists, Ray Kurzweil, gives his latest views on where AI is headed.
- [The Grill: Ray Kurzweil talks about 'augmented reality' and the Singularity](#) – Part 1 of a several part interview/discussion with Ray Kurzweil on the future. My most favorite futurist provides some excellent insights into what is coming.

[NLP](#)

- [Yahoo's Plan for a Smarter In-Box](#) – Yahoo is integrating a number of new features into its in-box. In a simple example, they showed how interactions between their e-mail program and features such as a mapping tool could make it easy to organize a social event.

[Speech Recognition](#)

- [The Coming Wave of Gadgets That Listen and Obey](#) – There are many gadgets that are hitting the market incorporating speech recognition and elements of natural language processing. This article highlights several of them.
- [French Navy uses Second Life to Recruit](#) – Interesting approach to recruiting. Second life has many uses.
- [IBM virtual world defies laws of physics](#) – IBM has created a virtual world with some interesting aspects to it--trying to foster creativity.
- [Nasa investigates virtual space](#) – Even NASA is investigating how virtual spaces can be used effectively for training.
- [Virtual World Workforce, Part 1: Promising the World](#) – The use of virtual worlds continues to expand, this time to recruit and conduct job fairs.
- [Virtual World Workforce Part 2: Real-Life Pitfalls](#) – Part 2 of the continuing story deals with many of the pitfalls and barriers to effectively utilizing virtual worlds.

Decision Making

- [Raiding the Enemy's Mind](#) – DARPA is working on a program called Adversarial Intelligence and Decision-making (RAID), a tool for semi-automated generation of enemy estimates. Based on multiple simulation-based experiments as well as on a live-force demonstration, DARPA researchers find that the RAID software can, on average, be at least comparable to a competent staff in terms of accuracy, and may offer significant advantages in terms of speed and personnel requirements.

Information Overload

- [Software That Organizes Intelligently](#) – Creative ways in which to organize information are discussed in this article. A soon to be released product, Smart Desktop, will attempt to organize information automatically and intelligently.
- [TrueThinker Learns How Users Organize Info. Makes Growing Knowledge Easier, Faster](#) – A new online tool is now available to make sharing and learning information easier and faster. Try it out or get a year's subscription for \$24.95. The claims for what it can do are amazing.

Information Visualization

- [Mapping Professional Networks](#) – Software to help businesses visualize connections between colleagues has been released from IBM.

Innovation

- [The Year in Ideas](#) – Ever wonder where the interesting ideas come from? Here are some of the most interesting ones from 2007.

Virtual Reality