

# E.I.T. Links

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

“The Future has a way of arriving unannounced.”  
 - George Will

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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 Nov 2012, 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

- [Is artificial intelligence becoming a commodity?](#) – Artificial intelligence is fast becoming a pillar of the technology industry, but what is it? Forget sentient computers and biological brains; this is about developing software that solves problems, though logic and knowledge are

mere underlying traits. Some think AI could even save our species.

- [Noam Chomsky on Where Artificial Intelligence Went Wrong](#) -- Chomsky critiqued the field of AI for adopting an approach reminiscent of behaviorism, except in more modern, computationally sophisticated form. Chomsky argued that the field's heavy use of statistical techniques to pick regularities in masses of data is unlikely to yield the explanatory insight that science ought to offer. For Chomsky, the "new AI" -- focused on using statistical learning techniques to better mine and predict data -- is unlikely to yield general principles about the nature of intelligent beings or about cognition.

### Brain

- [The Most Amazing Race: Reverse-Engineering the Brain](#) – If the race to map the human genome was the last great competition in science, the challenge to reverse-engineer the brain is the most amazing race today. But experts wildly disagree on how we'll get there.
- [Collective Intelligence \(A conversation with Tom Malone\)](#) – THOMAS W. MALONE, the founding director of the MIT Center for Coordination Science and one of the two founding co-directors of the MIT Initiative on "Inventing the Organizations of the 21st Century" discusses “collective intelligence”.
- [Human Brain, Internet, and Cosmology: Similar Laws at Work?](#) – The structure of the universe and the laws that govern its

growth may be more similar than previously thought to the structure and growth of the human brain and other complex networks, such as the Internet or a social network of trust relationships between people, according to a new paper published in the science journal *Nature's Scientific Reports*

### [Data Mining/Business Intelligence](#)

- [Demystifying Big Data: A Practical Guide to Transforming the Business of Government](#) – Everyone is talking about Big Data, and how it will transform government, both in Washington and beyond the Beltway. What is Big Data? What capabilities are required to keep up? How do you use Big Data to make intelligent decisions? How will agencies effectively govern and secure huge volumes of information, while protecting privacy and civil liberties?

### [Educational Technology](#)

- [Recombinant Education](#) – Knowledge-based industries such as education continue to confront the most significant disruptions and also to find the greatest opportunities for recombination. In keeping with that trend, the next decade promises to bring extensive recombination to education, in essence to create a new learning ecosystem.
- [The Technology of Massive Open Online Courses](#) – So far, tearing down the paywalls around higher education has been the simple part. What's more challenging is making online match the quality of their in-person equivalents. That means racing to set up live forums for class discussions, keeping the site from crashing amidst the crush of students, and urgently seeking ways to make classes more interactive and to automate grading as much as possible.
- [The Most Important Education Technology in 200 Years](#) – Many believe that education is about to change dramatically. The reason is the power of the Web and its associated data-crunching technologies. Thanks to these changes, it's now possible to stream video classes with sophisticated interactive

elements, and researchers can scoop up student data that could help them make teaching more effective. The technology is powerful, fairly cheap, and global in its reach.

- [The Library of Utopia](#) – Google's ambitious book-scanning program is foundering in the courts. Now a Harvard-led group is launching its own sweeping effort to put our literary heritage online. Will the Ivy League succeed where Silicon Valley failed?

### [Future](#)

- [Human enhancement and the future of work](#) – Very thorough report from a joint workshop hosted by the Academy of Medical Sciences, the British Academy, the Royal Academy of Engineering and the Royal Society, outlining the many challenges and opportunities coming soon as humans become even more "technologically enhanced".
- [How the Internet of Everything Will Change the World... for the Better](#) – There is no better time to be alive than now. That's because we are entering an era where the Internet has the potential to dramatically improve the lives of everyone on our planet—from accelerating the discovery of cures for diseases, to understanding climate change, to enhancing the way companies do business, to making every day more enjoyable.
- [World Future Society 20 Forecasts for 2013-2025](#) – One of the best forecasting societies makes their latest predictions, including implications and recommendations for accommodating the upcoming developments.
- [50 Technologies that will Change the World](#) – Outstanding summary and insights into the technologies that will change the world. Not just the "what", but also the "so what".
- [Vision of the future: 10 hi-tech inventions we'll hopefully be using in 2030](#) – Yet another forecast for the future--this one from one of my favorite (and one of the most credible) "futurists", Ian

Pearson.

### Information Visualization

- [Envisioning financial technologies \[Infographic\]](#) – Another great graphic, this one showing the interrelationships of the many developing technologies related to the world of finance.

### Innovation

- [The Competitiveness and Innovative Capacity of the United States](#) – Extremely detailed report from the Department of Commerce outlining the opportunities and challenges relating to the innovative capabilities of the US. The report addresses a wide array of issues and ideas.
- [Medical devices powered by the ear itself](#) – For the first time, researchers power an implantable electronic device using an electrical potential — a natural battery — deep in the inner ear.
- [The Economist reveals its 2012 Innovation Awards winners](#) – *The Economist* magazine has announced the winners of its 2012 Innovation Awards. Selected from fields as diverse as bioscience, telecommunications, energy and aerospace, the winners were selected by a panel of judges, comprised largely of previous award winners. As diverse as they were, those awarded did share one particular trait: far from being pie-in-the-sky ideas, their innovations were all proven technologies.
- [Is this the biggest breakthrough in propulsion since the jet engine?](#) – Critical tests have been successfully completed on the key technology for SABRE, an engine that will enable aircraft to reach the opposite side of the world in under four hours, or to fly directly into orbit and return in a single stage, taking off and landing on a runway.

### Kurzweil

- [Kurzweil Responds: Don't Underestimate the Singularity](#) – Recently, Paul Allen and a

colleague challenged the prediction that computers will soon exceed human intelligence. Now Ray Kurzweil, the leading proponent of the “Singularity,” offers a rebuttal.

- [How to Create a Mind, The Secret of Human Thought Revealed](#) – In his latest book, “How to Create a Mind”, futurist Ray Kurzweil explores the limitless potential of reverse engineering the human mind.

### Machine Learning

- [Microsoft Seeks an Edge in Analyzing Big Data](#) – Microsoft’s machine-learning software will crawl internal corporate computer systems much the way the company’s Bing search engine crawls the Internet looking for Web sites and the links among them. The idea is to predict which software applications are most likely to fail when seemingly unrelated programs are tweaked.
- [Scientists See Promise in Deep-Learning Programs](#) – Using an artificial intelligence technique inspired by theories about how the brain recognizes patterns, technology companies are reporting startling gains in fields as diverse as computer vision, speech recognition and the identification of promising new molecules for designing drugs.

### Medical

- [A new method for early cancer detection](#) – It may soon be possible to test a person for cancer with just a drop of their blood and a small machine. As part of a European research project, scientists have developed a device for detecting the HSP70 protein, which is over-expressed in patients with many types of cancer. The objective: to make a diagnosis extremely early in the disease process, thereby improving outcomes for patients.

### Military

- [iRobot® 110 FirstLook® \(video\)](#) – The iRobot 110 Firstlook is a small, light,

throwable robot that provides hasty situational awareness, performs persistent observation, and investigates confined spaces.

### MISC

- [How Science Can Build a Better You](#) – IF a brain implant were safe and available and allowed you to operate your iPad or car using only thought, would you want one? What about an embedded device that gently bathed your brain in electrons and boosted memory and attention? Would you order one for your children?
- [Memoto Lifelogging Camera](#) – A tiny, automatic camera and app that gives you a searchable and shareable photographic memory.
- [Industrial Internet: Pushing the Boundaries of Minds and Machines](#) – An outstanding, detailed report on the coming new industrial internet. Includes details outlining how the integration of the internet, people, and smart machines will dramatically change the industrial approach in several areas.
- [7 Most Important Tech Trends Of 2012](#) – An outline of the seven most important trends related to technology, including big data, online training, among others.
- [Meeker's Address on the State of USA Inc.](#) – An outstanding presentation by Mary Meeker (one of my 'big thinkers'), outlining the challenges facing the United States business community.

### NLP

- [Microsoft Brings Star Trek's Voice Translator to Life](#) – It could be the next best thing to learning a new language. Microsoft researchers have demonstrated software that translates spoken English into spoken Chinese almost instantly, while preserving the unique cadence of the speaker's voice—a trick that could make conversation more effective and personal.

### Quantum Computing

- [First Teleportation from One Macroscopic Object to Another](#) – Physicists have teleported quantum information from one ensemble of atoms to another 150 metres away, a demonstration that paves the way towards quantum routers and a quantum Internet.

### Robots

- [Book-riffling robot scans one page at a time](#) – This odd contraption is actually a new way to scan and digitise the world's books - at a speed of 250 pages per minute. Although it's only a research machine, that reading rate easily beats manually-fed commercial scanners that only scan around 12 pages per minute.

### Search Engines

- [Can Google compete with the next generation of search engines?](#) – Today's search function is mainly linking to mostly static content. It is not able to differentiate on an individual level which of the potentially relevant answers is the most accurate one for your particular search just by referencing popular keywords — it uses a popularity algorithm as a proxy to solve this. But, as we know, what's popular isn't always the answer to our specific question or search. Likewise, modern lifestyles have experienced the limitations of the mobile interface, making it difficult to research topics on the go.

### Sensors

- [Pressure switch inside the head](#) – An increase in cerebral pressure may cause dementia and could destroy the brain. Companies have been seeking to find monitoring sensors that can be implanted into the brain, and read from outside the body. A tiny sensor may provide the help needed.
- [Computer science helping the aged stay home](#) – The researchers are adapting radio-

frequency identification (RFID) and sensor technologies to automatically identify and monitor human activity; to be able to determine if an individual's normal routine is being maintained so that timely assistance can be provided if it is needed.

- [Cellular Data Network for Inanimate Objects Goes Live in France](#) – A startup hopes to connect millions of low-power sensors worldwide to the Internet, making everything—from power grids to home appliances—smarter.
- [The Internet of Things, Taking On a Life Of Its Own](#) – The Internet (or Web) of Things is the next big wave in the Internet's development - at least as disruptive as the web itself. Using smart-tagging and advanced connectivity to digitize dumb products - from bikes and bottles to refrigerators and cars - and connect them to the Internet, will allow people and companies to interact with them in new and almost unimaginable ways. Objects will be able to talk to and control each other, and collect, receive and send information.

### Simulation/Games

- [Organ-on-a-Chip Mimics Deadly Lung Condition](#) – Researchers at Harvard University have shown that their “lung-on-a-chip” technology can mimic a life-threatening lung condition. They also report that scientists can uncover new aspects of the disease using the lung chip that would not be found with animal experiments.

### Virtual/Augmented Reality

- [Ingress. The game.](#) – *Ingress* runs as an Android app, tied to the real world through GPS. You and your smartphone need to be within range of a portal to interact with it. "Exotic matter" (XM) is collected as you explore your town and allows you to take control of a portal. You can then link it with two other portals to create a triangle. Your side now "owns" that territory.
- [Four Perspectives On Augmented Reality And Its Future](#) – The concepts behind the technology are beginning to change what we

think of ourselves, objects and the people in the world that surround us. With Google Glass people will see a data layer that is not visible to the human eye. Through an iOS or Android device, a person can now use apps to provide a different context for playing games, monitoring environments or tracking one's brain activity.

- [Augmented Light Bulb Turns a Desk Into a Touch Screen](#) – The LuminAR device, created by Linder and colleagues at the Media Lab, can project interactive images onto a surface, sensing when a person's finger or hand points to an element within those images. Linder describes LuminAR as an augmented-reality system because the images and interfaces it projects can alter the function of a surface or object.

### Web 2.0

- [The 30 Best Web 2.0 Tools For Teachers \(2012 Edition\)](#) – Presentation of the most useful web 2.0 tools for educators.