

E.I.T. Links

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

“We are called to be architects of the future, not its victims.”
 - R. Buckminster Fuller

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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 Apr 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

- [The Hunt for AI \(video\)](#) – An outstanding BBC video about how Artificial Intelligence is progressing in many areas.

Apps for Smartphones and Tablets

- [Mobile Travel Apps Can Now Check Your Calendar](#) – Hipmunk, the clever tool for searching for flights and hotel rooms, just got a little more clever. It’s adding a new feature to its iPhone, iPad and Android apps that sucks in your calendar appointments and visualizes them, so you can avoid flights that conflict with your appointments and find hotels that are convenient to them.
- [Decide when to buy](#) – Decide advises you to buy or wait based on our proprietary price and model predictions. Our price predictions are right 77% of the time, and when they are we save you \$87 per product on average.
- [Deals and Rewards](#) – With shopkick though, you treat yourself with rewards just by walking into many stores where you already like to shop. Yup, you get rewards not just for purchase, but simply for walking in. We call the rewards points “kicks.” All you need is the shopkick app, no plastic cards. A few steps later, boom, you’re cashin’ in your treat. Free and simple.
- [OfficeDrop](#) – Scan, Access & Share Paper & Digital Files in the Cloud. For small business & home offices.
- [Bump Launches Payments App To Let You Share Money By Tapping Phones Together](#) – It’s a simple solution, powered by PayPal, and designed to solve the headache of splitting drink or dinner tabs. Similar solutions exist, including one from Venmo and even PayPal’s own Bump-enabled app which came out in 2010.

- [Acrosshair Browser](#) – The browser uses 3D navigation which you can see as you spin around. Local data is presented on the go.
- [Spotcrime](#) – Search for crime reports by city, state, or zip.
- [Peaks augmented reality](#) – Simply hold the iPhone camera in the direction you're interested in and voila! You instantly get the name, location and altitude of the peaks you're looking at. Whether hiking or biking, this is a great app to have along on your trip.

Brain

- [Researchers use brain injury data to map intelligence in the brain](#) – Scientists report that they have mapped the physical architecture of intelligence in the brain. There is one of the largest and most comprehensive analyses so far of the brain structures vital to general intelligence and to specific aspects of intellectual functioning.
- [Scientists to build 'human brain': Supercomputer will simulate the entire mind and will help fight against brain diseases](#) – The human brain's power could rival any machine. And now scientists are trying to build one using the world's most powerful computer. They hope to complete it within 12 years. He said: 'The complexity of the brain, with its billions of interconnected neurons, makes it hard for neuroscientists to truly understand how it works.'

Chatbots

- [Social Intelligence](#) – The popularity of Siri shows that a digital assistant needs more than just intelligence to succeed; it also needs tact, charm, and surprisingly, wit. Errors cause frustration and annoyance with any computer interface.

Data Mining/Business Intelligence

- [Data analytics driving medical breakthroughs](#) – Society is "on the cusp of being able to do more than ever before, and support decision-making in ways that have

not been possible before," says Dr. Harlan Krumholz, professor of medicine at Yale University and a physician who is also involved in big-data research projects with large hospital consortia.

Educational Technology

- [Solving College With Big Data](#) – College is stuck in the past, and tech is always trying to tow it out of the mud. The trick is finding a solution that provides more access to higher education, improves the learning experience, *and* enables future improvement, instead of mirroring college in some company's proprietary system. Coursera has such an offering, and it announces today that some of the world's top universities will participate in its experiment.
- [MIT launches student-produced educational video initiative](#) – MIT has launched an initiative encouraging its students to produce short videos teaching basic concepts in science and engineering. The videos — aimed at younger students, in grades from kindergarten through high school — will be accessible through a dedicated MIT website and YouTube channel. A subset of the videos will also be available on Khan Academy, a popular not-for-profit educational site founded by an MIT alumnus.

Information Visualization

- [Supramap](#) – A web application for integrating genetic, evolutionary, geospatial, and temporal data. (NOTE: The H1N1 video is amazing.)

Innovation

- [Read all the magazines you want for one low price.](#) – A new service that allows you, for one subscription price, to read all the magazines you wish.
- [Through a glass, clearly](#) – MIT researchers find a way to make glass that's anti-fogging, self-cleaning and free of glare.

- [Netgear releases first 802.11AC wifi router](#)
– The NETGEAR R6300 WiFi Router, powered by Broadcom’s 5G WiFi IEEE 802.11ac chips, is up to three times faster than today’s 802.11n routers. The NETGEAR R6300 WiFi Router has speeds of up to 1300 Mbps on 5GHz and 450 Mbps on 2.4GHz enabling consumers to download web content from any device in the home in a fraction of the time it would take on a similar 802.11n device.
- [Re-defining Natural Resources](#) – Planetary Resources will be the leader in attempting to acquire natural resources from the solar system, including asteroids.
- [Tiny reader makes fast, cheap DNA sequencing feasible](#) – Researchers have devised a nanoscale sensor to electronically read the sequence of a single DNA molecule, a technique that is fast and inexpensive and could make DNA sequencing widely available.
- [A new dimension for solar energy](#) – A team of MIT researchers has come up with a very different approach: building cubes or towers that extend the solar cells upward in three-dimensional configurations. Amazingly, the results from the structures they’ve tested show power output ranging from double to more than 20 times that of fixed flat panels with the same base area.

[Knowledge Management](#)

- [Building the #Knowosphere \(video keynote presentation\)](#) – The “knowosphere” — a word intentionally echoing the more allegorical “noosphere,” the “planet of the mind” of Vladimir Vernadsky and Pierre Teilhard de Chardin. New ways to share observations and shape ideas that are bound to have profound impacts on the quality of the human journey.

[Machine Learning](#)

- [Artificial Intelligence Provides Easy Autism Diagnosis in Minutes](#) – The computational algorithms described in the published paper are referred to as “machine-learning

algorithms”—a form of artificial intelligence where data is analyzed leading to a resulting diagnosis for autism that can be made efficiently, effectively and without the potential for subjective human error. The algorithms were applied toward large data samples of patients who had previously been diagnosed with autism through the ADOS exam.

[Manufacturing](#)

- [MIT Brains Work On “Smart Sand” Robots](#)
– Nowadays, if you want something built, you take wood or other materials and build or cut it out of that. But, what if you could have a computer model of what you want, and have that thing magically appear out of a box of sand?
- [Printable Houses and the Future Opportunity Therein](#) – While we have still not seen our first “printed home” just yet, they will be coming very soon. Perhaps within a year. Commercial buildings will soon follow. For an industry firmly entrenched in working with nails and screws, the prospects of replacing saws and hammers with giant printing machines seems frightening. But getting beyond this hesitancy lies the biggest construction boom in all history.
- [A primer on 3D printing \(TED video\)](#) – 2012 may be the year of 3D printing, when this three-decade-old technology finally becomes accessible and even commonplace. Lisa Harouni gives a useful introduction to this fascinating way of making things -- including intricate objects once impossible to create.
- [Researchers Develop A Path To Liquid Solar Cells That Can Be Printed Onto Surfaces](#) – Scientists at USC have developed a potential pathway to cheap, stable solar cells made from nanocrystals so small they can exist as a liquid ink and be painted or printed onto clear surfaces. The solar nanocrystals are about four nanometers in size — meaning you could fit more than 250,000,000,000 on the head of a pin — and float them in a liquid solution, so “like you print a newspaper, you can print solar cells.”

- [Printable Spacecraft May Flutter Down on Alien Worlds](#) – The onslaught of ultra-tiny [technology](#) is giving rise to the idea of “printable spacecraft” consisting of electronic circuits, power generation, sensing, fluid handling, propulsion, telecommunications and mobility subsystems — all integrated onto a single substrate. The project, if successful, could allow scientists to one day pepper other worlds with scads of spacecraft the size of postage stamps or confetti.

Medical

- [First Bedside Genetic Test Could Prevent Heart Complications](#) – For some cardiac patients, recovery from a common heart procedure can be complicated by a single gene responsible for drug processing. The risk could be lowered with the first bedside genetic test of its kind. The test shows promise for quickly and easily identifying patients who need a different medication.
- [A Nobel Prize winner on diagnostic medical devices: they're all apps \(video\)](#) – “Entire diagnostic tools could become mobile-phone based,” said Yunus, who was at this week’s World Health Care Congress in Washington, D.C. “The mobile phone could become the central device. The rest become apps to download.”
- [The Mindblowing \(and Creepy\) Implications of Artificial Intelligence in Medicine](#) – AI is beginning to play an ever-more important role in medicine—especially after IBM’s Watson is now being employed to help advance the practice of medicine by empowering physicians. As the mountains of data generated from everything from medical journals to medical devices grow, sifting through it to glean insights is an increasingly important need.
- [Harvard's Wyss Institute Creates Living Human Gut-on-a-Chip](#) – Researchers at the Wyss Institute for Biologically Inspired Engineering at Harvard University have created a gut-on-a-chip microdevice lined by living human cells that mimics the structure, physiology, and mechanics of the human intestine -- even supporting the growth of

living microbes within its luminal space. As a more accurate alternative to conventional cell culture and animal models, the microdevice could help researchers gain new insights into intestinal disorders, such as Crohn's disease and ulcerative colitis, and also evaluate the safety and efficacy of potential treatments.

- [One Drug to Shrink All Tumors](#) – A single drug can shrink or cure human breast, ovary, colon, bladder, brain, liver, and prostate tumors that have been transplanted into mice, researchers have found. The treatment, an antibody that blocks a "do not eat" signal normally displayed on tumor cells, coaxes the immune system to destroy the cancer cells.

Military

- [U.S. troops to have 'super vision' as Pentagon orders electric contact lenses that let them 'see' through drones flying overhead](#) – Google wowed the world this week with its Project Glass computer glasses - but the U.S. Army is investing in a technology one step ahead. The Pentagon has placed an order with Innovega for lenses which focus 3D battlefield information from drones and satellites directly into people's eyeballs. The tiny 'screens' sit directly on users' eyeballs and work with a pair of lightweight glasses with a built-in translucent screen.

MISC

- [Myna audio editor from Aviary](#) – Use Myna to remix music tracks and audio clips. Apply sound effects and record your own voice or instruments.
- [Which Way Next? \(video\)](#) – Which Way Next is a Singularity University webcast series of monthly round-table discussions on exponential technologies with leaders in industry, science and technology. This episode includes a discussion of how advances in artificial intelligence, robotics and digital manufacturing will enable us to design, print and manufacture complex products in our homes.

- [Crowd computing taps artificial intelligence to revolutionize the power of our collective brains](#) – CrowdControl takes large complex jobs and breaks them into tiny pieces, then sources the piecework out to millions of micro-task workers around the world.
- [Do-it-yourself cat door recognizes your feline](#) – Eight years ago, an image-recognition software company solved the same problem with its company cat, Flo. Quantum Picture developed a cat door that let Flo in, but locked her out if it saw she was carrying something in her mouth. At the time, the door connected to a desktop computer that ran the program that snapped pictures of Flo and analyzed them as she approached the door.
- [Introducing Google Drive... yes, really](#) – Google Drive—a place where you can create, share, collaborate, and keep all of your stuff. Whether you're working with a friend on a joint research project, planning a wedding with your fiancé or tracking a budget with roommates, you can do it in Drive. You can upload and access all of your files, including videos, photos, Google Docs, PDFs and beyond.
- [The debate about defeating aging \(video\)](#) – Interesting debate about defeating aging, including discussion of the ramifications of such an accomplishment, if successful.

NLP

- [Can an Algorithm Write a Better News Story Than a Human Reporter?](#) – Every 30 seconds or so, the algorithmic bull pen of Narrative Science, a 30-person company occupying a large room on the fringes of the Chicago Loop, extrudes a story whose very byline is a question of philosophical inquiry. The computer-written product could be a pennant-waving second-half update of a Big Ten basketball contest, a sober preview of a corporate earnings statement, or a blithe summary of the presidential horse race drawn from Twitter posts. The articles run on the websites of respected publishers like Forbes.

Quantum Computing

- [Scientists Make Quantum Communication Breakthrough](#) – Scientists at the Max Planck Institute have begun to harness quantum communication, or what Einstein called 'spooky action at a distance'. Physicists have set up the first elementary quantum network by successfully passing 'two coupled single-atom nodes that communicate quantum information via the coherent exchange of single photons.'

Robots

- [Robot with Human Skeleton Steps Toward Artificial Intelligence](#) – The idea of biomimetic robots is not new — scientists have been building robots based on animals like fish and birds for a while now. The audacity of this project is try to mimic the internal structures of an animal — in this case, us — all in pursuit of an even more audacious and absurd goal: artificial intelligence.
- [Making the future](#) – Many of the new production methods in this next revolution will require fewer people working on the factory floor. Thanks to smarter and more dexterous robots, some lights-out manufacturing is now possible.
- [The 'living' micro-robot that could detect diseases in humans](#) – A tiny prototype robot that functions like a living creature is being developed that one day could be safely used to pinpoint diseases within the human body. The intention is to engineer and integrate robot components that respond to light and chemicals in the same way as biological systems. This is a completely innovative way of pushing robotics forward.

Sensors

- [The Computing Trend that Will Change Everything](#) – The performance of computers has shown remarkable and steady growth, doubling every year and a half since the 1970s. What most folks don't know, however, is that the *electrical efficiency* of computing (the number of computations that

can be completed per kilowatt-hour of electricity used) has also doubled every year and a half since the dawn of the computer age.

- [New Technology Teaches Homes to Protect Seniors](#) – An Orlando startup is ready to launch an exciting new technology designed to help make ageing in place a safe and secure reality for seniors who live alone. Necessity, has developed a system of sensors linked with an artificial intelligence algorithm that is able to learn the senior's habits and detect patterns that could indicate a fall or loss of consciousness and initiate a personal response protocol if necessary.
- [A Startup Puts the Internet in Your Couch Cushions](#) – It involves Ninja Blocks—little computerized, sensor-equipped boxes that Wotton helped create. The blocks connect to the Internet to carry out preset actions in response to stimuli.
- [Implantable, Wireless Sensors Share Secrets of Healing Tissues](#) – A new implantable sensor developed at Rensselaer Polytechnic Institute can wirelessly transmit data from the site of a recent orthopedic surgery. Inexpensive to make and highly reliable, this new sensor holds the promise of more accurate, more cost-effective, and less invasive post-surgery monitoring and diagnosis.

[Speech Recognition](#)

- [Scribe Healthcare Interactive Includes Customizable Cloud Features for Greater Flexibility](#) – A revolutionary speech recognition software called Scribe Interactive can immediately generate transcription layout from dictation.

[Virtual/Augmented Reality](#)

- [Google's Project Glass: You ain't seen nothin' yet](#) – Google's Project Glass demo is certainly the coolest hardware demo so far this year. Behind the scenes is something equally intriguing: artificial-intelligence software. For the most part, the augmented-reality glasses do what a person could do

with a smartphone, such as look up information and socialize. But the demo also shows glimpses of an artificial-intelligence (AI) system working behind the scenes. It's the AI system that could make mobile devices, including wearable computers, far more powerful and take on more complex tasks, according to an expert.