

E.I.T. Links

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

“If you are not prepared to be wrong, you’ll never come up with anything original.”
 - Sir Ken Robinson

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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 Dec 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

- [10 jobs being automated at a surprising pace](#) – There’s no question that many of the world’s routine tasks are now being subjected to automation, either through robots or software. Now, the next frontier is already opening up: the automation or robotization of non-routine tasks —

affecting jobs that once seemed immune to automation.

- [Another job being automated at a surprising pace: the boss](#) – An algorithm designed by researchers at the University of Massachusetts: “AutoMan.” He calls AutoMan “the first fully automatic system that can delegate tasks to human workers via crowdsourcing platforms such as Amazon’s Mechanical Turk.”

Apps for Smartphones and Tablets

- [‘Dental Surgery’ Is The Most Bizarre iPad App I’ve Ever Seen](#) – This game is completely bizarre. Upon launching it, that music is the first thing you notice: a single synthesized measure that blares and loops forever. A splash screen gives you a pretty clear idea of what the game is all about. “DENTAL SURGERY” rests above a graphical caricature of a wide-jawed, blue-eyed man (presumably the dentist) flanked by trays of surgical implements.
- [An app to model life’s big decisions](#) – If you’re faced with a big decision, you no longer need to go with your intuition - there’s an app for that. The app, called iMODELER, is an offshoot of a European Union research project into decision support systems. It visualizes personal decisions or strategies in a way that its creators say will lead to “non-linear” decisions that are less influenced by emotions and impart a clearer understanding of life’s complex interconnections.

Educational Technology

- [Announcing the Santa Fe Institute's Massive Open On-Line Courses](#) – Santa Fe Institute will be launching a series of MOOCs (Massive Open On-line Courses), covering the field of complex systems science. Our first course, Introduction to Complexity, will be an accessible introduction to the field, with no pre-requisites.

Future

- [The 22nd Century at First Light: Envisioning Life in the Year 2100](#) – The next 88 years may see changes that come exponentially faster than the previous 88 years. What new inventions will come out of nowhere and change everything? What will our families look like? How will we govern ourselves? What new crimes or other threats loom ahead? Will we be happy? How? THE FUTURIST invited WFS members and friends to submit forecasts, scenarios, wild cards, dreams, and nightmares about the earth, humanity, governance, commerce, science and technology, and more.
- [The Future Report](#) – A wide ranging indepth report about several possible scenarios. The report is divided into themes and is fully referenced. There are over 180 links to the sources that have informed our thinking and they are listed in the endnotes. The timeline that we've drawn up serves to illustrate the volume of change but also that change happens in parallel across all fields and geographies at the same time. Those changes have a tendency to conspire together to create compelling change scenarios. It is often at these inflection points that new business models form, new sub-sectors are created or when new solutions displace existing products and services and frequently their providers.

Information Visualization

- [The Future of Higher Education \[Infographic\]](#) – Another great graphic, this one outlining many of the changes and technologies related to the world of

education.

- [Four Charts That Illustrate The Transformation of Personal Computing](#) – Venture capitalist Mary Meeker gave her year-end “State of the Internet” presentation to much geeky fanfare. In her talk, Meeker, who works for Kleiner Perkins Caufield & Byers, used several telling charts to reiterate something we’ve known for a while: the trend shaping the Web is the explosion in popularity of connected mobile devices.

Innovation

- [What Does 2,000-Times-Faster Broadband Look Like?](#) – It ain't just about pink pixels. From innovation to infrastructure, a new breakthrough from across the pond could have far-reaching, super-fast implications.
- [A Real-Life Pixar Lamp That Interacts With The World Around It](#) – Pinokio, a brilliant project by three students at Victoria University of Wellington, proves that the concept of a light that can interact with the world can hold true in the physical world, even when the lamp in question is wrought out of steel and aluminum.
- [With driverless cars, Volvo seeks injury-free cars by 2020](#) – Volvo believes that with the driverless car technology it's developing, we could see virtually zero car deaths, at least in cars with the technology, within seven years.
- [A Retailer For Free Stuff](#) – Yerdle, a new platform that lets people give away and lend items to friends (and friends of friends) for free.
- [New technology could deliver text messages via contact lens](#) – Researchers at Ghent University in Belgium have developed a new technology that allows LCD displays to show text on the spherical, small circle of a contact lens. And it can project images using wireless technology.

Intelligent Agents

- [The iPhone Gets an Answer to Google Now](#) – This summer, Google revealed a novel

response to the challenges of finding information using a small, mobile screen: Google Now, an app that tries to anticipate your needs and offer information such as transit schedules precisely when you need them.

Knowledge Management

- [Vitals](#) – Vitals turns information into knowledge that helps you make better health decisions. We believe that when patients are able to find the right doctor or health facility, it leads to trusted relationships, improved care and better overall health. Vitals takes the guess work out of the question “Which doctor is best for me?” We provide you with powerful search tools and comprehensive information on doctors to help you make sense of your choices quickly and with confidence.

Kurzweil

- [Ray Kurzweil, Father Of The Singularity, Is Going To Work At Google](#) – Ray Kurzweil, one of the most wide-eyed futurists around, is going to work at Google. The KurzweilAI press release says he's joining Google to "work on new projects involving machine learning and language processing."

Manufacturing

- [The new maker rules](#) – Mr Pettis, the founder of MakerBot, a maker of low-cost 3D printers, spoke at the opening of his firm's first retail store on November 20th in New York. It will sell desktop MakerBots, which make things out of plastic, for just \$2,200. It is still early days, but MakerBots and machines like them are “empowering people to make the things they want, rather than buy them from factories,” says Mr Pettis.
- [Manufacturing the Future](#) – The global manufacturing sector has undergone a tumultuous decade: large developing economies leaped into the first tier of manufacturing nations, a severe recession choked off demand, and manufacturing

employment fell at an accelerated rate in advanced economies. Still, manufacturing remains critically important to both the developing and the advanced world. In the former, it continues to provide a pathway from subsistence agriculture to rising incomes and living standards. In the latter, it remains a vital source of innovation and competitiveness, making outsized contributions to research and development, exports, and productivity growth. But the manufacturing sector has changed—bringing both opportunities and challenges—and neither business leaders nor policy makers can rely on old responses in the new manufacturing environment.

- [Here's What A 3D-Printed Record Sounds Like \[Video\]](#) – If you ever wanted to print out your favorite albums at home, that weird little itch of yours may soon be scratched. Amanda Ghassaei, an editor at Instructables and DIY audio hardware geek, recently succeeded in 3D printing 12-inch records containing music by artists like Nirvana, The Pixies and Daft Punk. It sounds terrible, but the achievement is still pretty impressive.

Medical

- [Top Five Healthcare IT Trends for 2013](#) – AT&T outlines the five key IT healthcare trends for 2013, some of which might surprise you.
- [Vision-Restoring Implants that Fit Inside the Eye](#) – A coming generation of retinal implants that fit entirely inside the eye will use nanoscale electronic components to dramatically improve vision quality for the wearer, according to two research teams developing such devices.
- [Biomarking Time](#) – In a new study, researchers at the University of California, San Diego School of Medicine, with colleagues elsewhere, describe markers and a model that quantify how aging occurs at the level of genes and molecules, providing not just a more precise way to determine how old someone is, but also perhaps anticipate or treat ailments and diseases that come with the passage of time.

- [A Gadget that Makes You the Doctor](#) – For most of us, checking our health or diagnosing an illness means a trip to the doctor’s office. For Walter De Brouwer, it involves holding a little square up to his temple or spitting onto the edge of a blue plastic square, snapping a photo with his iPhone, and then reading his diagnosis on the small, glowing screen.
- [The Machine that Will Help End TB](#) – Speedy diagnosis and recovery are made possible by a machine called a GeneXpert. Although the advanced molecular tricks it uses to identify the DNA of *M. tuberculosis* would have been unimaginable outside a state-of-the-art biology lab a few years ago, the device is simple to use. A technician squirts a sputum sample from a patient into what looks like a printer cartridge and then clicks that into the machine, which performs a reaction that amplifies specific bits of *M. tuberculosis* DNA if they are present.
- [DARPA’s expanding foam staunches internal bleeding](#) – To staunch internal bleeding in soldiers wounded on the battlefield, the U.S. military is testing an injectable foam that expands inside the body. The foam starts as two liquids in a canister. When injected through the navel, the liquids mix and expand 30 times the original volume, spreading through the abdominal cavity while conforming to tissue surfaces. The solid foam applies pressure on internal injuries.
- [Synthetic Overview of the Collaborative Economy](#) – Two main agents of transformation guide this work. One is the emergence of community dynamics as an essential ingredient of doing business. It is no longer a matter of autonomous and separated corporations marketing to essentially isolated consumers, it is now a matter of deeply inter-networked economic actors involved in vocal and productive communities. The second is that the combined effect of digital reproduction and the increasingly 'socialized' production of value, makes the individual and corporate privatization of 'intellectual' property if not untenable, then certainly more difficult, and in all likelihood, ultimately unproductive. Hence the combined development of community-oriented and 'open' business models, which rely on more 'social' forms of intellectual property.
- [5 science breakthroughs in 2012](#) – Five remarkable breakthroughs in science are highlighted in this article.

Neural Networks

- [Artificial Intelligence and Cancer Diagnosis: Meet the 2012 Google Science Fair Winner](#) – Brittany Wenger's winning Google Science Fair project involved the creation of an artificial neural network (ANN) (and a cloud component for global access) to help with the evaluation of breast cancer biopsies.
- [Machine sorts batteries by using artificial intelligence](#) – Research at Gothenburg University and Chalmers University of Technology, both in Sweden, has resulted in a new type of machine that sorts used batteries by means of artificial intelligence (AI). The sorting of up to 10 batteries a second is made possible by the machine’s so-called neural network, which was trained to recognise about 2,000 different types of batteries by taking pictures of them from all possible angles.

Military

- [Micro Drones Will Follow You Indoors](#) – Unmanned Aerial Vehicles (UAVs) or drones are an increasingly important part of the U.S. military’s strategy. Much smaller “micro-UAVs could soon follow soldiers, police officers and other emergency personnel inside buildings, too. A startup called CyPhy Works has developed two such micro UAVs for military and emergency service use.

MISC

RFID

- [RFID Improves Efficiency Of Blood Supply Chain](#) – The Transfusion Medicine RFID Consortium found that the use of RFID during the pilot resulted in a 33 percent reduction in reconciliation issues or misplaced products at the blood-donation points, as well as an 87 percent decrease in reconciliation issues or misplaced products when blood arrived at BloodCenter of Wisconsin's headquarters. In addition, efficiency during final inventory check-in at the BloodCenter of Wisconsin increased by 63 percent.
- [Glimpse of your life in 2020 thanks to the Internet of Things](#) – What if all objects were interconnected and started to sense their surroundings and communicate with each other? The Internet of Things (IoT) will have that sort of ubiquitous machine-to-machine (M2M) connectivity. Since there are estimates that between 50 billion to 500 billion devices will have a mobile connection to the cloud by 2020, here's a glimpse of our possible future.

Robots

- [Welcome to the world of robots \(video\)](#) – Checkout videos of the most advanced robots in existence today.
- [Mind-controlled robotic arm has skill and speed of human limb](#) – A paralyzed woman has been able to feed herself chocolate and move everyday items using a robotic arm directly controlled by thought, showing a level of agility and control approaching that of a human limb.
- [Telepresence Robots Let Employees 'Beam' Into Work](#) – More than a dozen companies that sell so-called telepresence robots. These remote-controlled machines are equipped with video cameras, speakers, microphones and wheels that allow users to see, hear, talk and "walk" in faraway locations.

Sensors

- [How Technology Can Reduce Firefighter Injuries](#) – The most common injury to firefighters isn't any dramatic, life-threatening thing. Rather, it's the more mundane wear-and-tear of this intensely physical job: damage to the muscles and skeleton. A Cornell professor hopes to reduce those injuries, in a clever way: by re-engineering firefighters boots and gear.
- [The Morning Briefing: The 'Internet of Things'](#) – Several interesting links to articles citing the progress of the "Internet of Things" (IoT).
- [A Cheap, Accurate Cancer Sensor, Created By A 15-Year-Old](#) – A 15-year-old student from Maryland came up with a paper sensor that detects pancreatic cancer 168 times faster than current tests. It's also 90% accurate, 400 times more sensitive, and 26,000 times less expensive than today's methods. In short: It's a lot better.
- [Stick-N-Find Bluetooth-powered stickers will help you find anything](#) – Stick-N-Find stickers will offer consumers the ability to find any object using a smartphone and a Bluetooth connection. After a user attaches a Stick-N-Find Bluetooth sticker to any object, they can check distance from the object using a smartphone application. In addition, the user can trigger an audible buzzer to hear the sticker as well as turn on a blinking red light housed within the sticker to see the object in the dark. This type of technology can be useful for locating lost car keys, expensive electronics like a smartphone or a remote control that's buried in the couch cushions.

Simulation/Games

- [The Game of Business](#) – The idea of making business a game is nothing new. Smart managers and marketeers have been subtly manipulating us to change how we shop and work for more than a century. In the last few years, the concept has become popular enough to be worthy of its own buzzword—“gamification,” which, as the name suggests, refers to using video game design techniques (progressing through increasingly difficult levels or team competitions, for example) to motivate people in other aspects of life, notably anything considered work.

Web 2.0

- [Blogs: vastly underused teaching and learning tool](#) – As a learning experience the benefits of blogs are clear. The act of writing forces you to précis your thoughts, reflect on experiences and come to some conclusions. The problem with much education and training is that written analysis is either too short (multiple choice or word/phrase answers) or too long (the long-form essays in higher education). Blogs provide a far more useful format. A blog post shouldn't be too short or too long. Some topics require no more than a paragraph or two, others a more considered couple of pages of detailed argument. Blogs force you to be concise but substantial.