E.I.T. Links

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

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"Technology is always evolving, and companies.. not just search companies.. can't be afraid to take advantage of change."
- Eric Schmidt, Google CEO

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Links for this Issue

AI General

- Could self-aware cities be the first forms of artificial intelligence? – The cities of the future will be huge and super-dense — but will they also be alive? Could the increasingly complex systems needed to manage the next generation of megacities become our first true artificial intelligence?

Artificial Life

- Riders on a swarm – Mimicking how birds, ants, and bees cooperate to accomplish something may, in fact, lead to the real thing.

Brain

- Human brain on a microchip nearly ready – The human brain on a microchip is almost ready! Turning into reality science fiction of films such as " The Terminator" - where machines and men meld into reality - Canadian scientists have successfully connected brain cells to a silicon chip to "hear" conversation between brain tissue.

- Digital Devices Deprive Brain of Needed Downtime – The constant din of computing access and multi-tasking can take a toll on the human brain.

Chatterbots

- "The Age of Assistants": The View From Inside SRI – We are today with virtual personal assistants (VPAs) where Facebook was in 2004 - simultaneously on the verge of something very big, and yet only at the very beginning of a decades-long trajectory.

Educational Technology

- [Bill Gates: In Five Years The Best Education Will Come From The Web](#) – Bill Gates describes his reasoning why the web will be the best source of education soon.

- [Replacing a Pile of Textbooks With an iPad](#) – Within a few years, the iPad or similar device could easily be the choice for students in school rather than carrying textbooks around.

Future

- [The Future of Music Technology](#) – Ten years ago, it was nuts to think you'd have your entire music collection in your pocket. Today, no biggie. So what's coming in the next decade? Plenty. The future of music technology is all about accessibility – easier access to both consuming, and creating, the music you want to hear.

Information Overload

- [Every 2 Days We Create As Much Information As We Did Up To 2003](#) – According to Eric Schmidt of Google, we are now creating as much information in two days as we created in the history of mankind up to 2003. Schmidt noted that while technology is neutral, he doesn't believe people are ready for what's coming.

Information Visualization

- [The beauty of data visualization](#) – (video) David McCandless turns complex data sets (like worldwide military spending, media buzz, Facebook status updates) into beautiful, simple diagrams that tease out unseen patterns and connections. Good design, he suggests, is the best way to navigate information glut -- and it may just change the way we see the world.

Innovation

- [Digital afterlife: Leaving your legacy online](#) – Sign a Digital Will to bequeath your confidential and personal electronic, online assets to your loved ones. This innovative idea allows you to develop a will that, upon your demise, is sent to the appropriate person(s). It can contain passwords to electronic records, details of data locked in CDs, DVDs, and cloud- or internet-based services like Facebook, Flickr and Gmail.

- [Holographic TV Dreams in Japan 2022 World Cup Bid (Network World)](#) (video) – Forget 3D TV, Japan is promoting the idea of ultra-realistic holographic broadcasts and the ability to zoom a virtual camera in behind players on the pitch if it secures the 2022 World Cup. Japan proposes expanding the World Cup to all 208 FIFA member nations through fan-fest events that will feature live, holographic coverage of the games. Fans will gather in stadiums thousands of kilometers from the action and watch the games as if they are taking place in front of their eyes.

Intelligent Agents

- [Back to the future: Why push technologies and search are about to explode](#) – Imagine if, instead of delivering up search results based on the keywords you typed in, your search tool was more of an omniscient oracle that could understand the nuances of both you as a person and as a searcher. Sound far fetched? Read this article for some insights as to the tremendous progress being made in just such an area.

- [Apple's Siri Teams Up With Wolfram Alpha](#) – In one of the most exciting developments thus far, two of my favorite (and most advanced) intelligent agent applications are now linked. Download the free app and see how well questions can be answered (NOTE: this is evidence of the progress mentioned in the previous link on Intelligent Agents.)

Machine Learning

- [Google Offers Cloud-Based Learning Engine](#) – Google has launched a service that could bring such smarts to many more apps. Google Prediction API provides a simple way for developers to create software

that learns how to handle incoming data. For example, the Google-hosted algorithms could be trained to sort e-mails into categories for "complaints" and "praise" using a dataset that provides many examples of both kinds. (NOTE: Since this article appeared, Google has indeed released its gmail application which sorts email automatically based on perceived priority.)

Manufacturing

- How DARPA Plans to Reinvent U.S. Manufacturing – What DARPA is proposing (in its new iFAB program) is a "foundry-style manufacturing capability." By which they mean microchip foundries - the generic, build-any-chip-for-any-designer factories that churn out microchips for every application you can imagine, and which are the dominant mode of manufacture for most of the silicon in use today. (NOTE: for more on a similar approach, listen to Neil Gershenfeld's amazing discussion of his already existing Fab Lab at: http://itc.conversationsnetwork.org/shows/detail782.html)

Medical

- US$240 TB-detecting microscope on par with $40,000 devices – In a paper published recently, researchers described how the US$240 Global Focus is able to detect TB-positive sputum smears just as well as laboratory microscopes worth over $40,000.

- E-Nose Sniffs Out Cancer for Quick, Painless Detection – A team of Israeli scientists has developed a breathalyzer that can diagnose and differentiate between at least four different common types of cancer. The device, which uses nanotechnology, could revolutionize the detection and treatment of cancer.

- New device developed to make health diagnosis cheaper and quicker – When bodily fluids such as blood are tested for infectious diseases and unhealthy protein levels, they're typically mixed with antibodies or other biological reactants to produce a positive or negative reaction.

Researchers from Arizona State University (ASU) have now come up with an alternative testing system that they claim is just as accurate, but much simpler, quicker and cheaper. It utilizes LED lights and simple microelectronic amplifiers, and actually uses the sample itself as a diagnostic tool.

- Hand-held detector aims to diagnose disease – Family doctors could instantly detect a raft of diseases – from breast cancer to MRSA – using a cheap hand-held device being developed by the UK-based R&D company Cambridge Consultants.

Military

- Explore Top Secret America – (video) Top Secret America" is a project nearly two years in the making that describes the huge national security buildup in the United States after the Sept. 11, 2001, attacks.

- Android Apps to Lend a Hand on the Battlefield – Already Android apps may be great for workplace productivity and fun and games. But a tech-product firm is now developing Droid solutions that are expected to help military troops in the heat of conflict.

MISC

- New Scientist Brainsources Its Latest Cover, While Guy Kawasaki Crowdsources His – British magazine New Scientist announced that it has used neuromarketing in a bid to choose its latest cover. Compare and contrast with the fact that entrepreneur and VC nabob Guy Kawasaki is to harness the power of the crowd to help design the cover of his next book. So, in a nutshell, we're seeing the power of the unconscious versus the power of the people here.

- Innovator: George Church – The synthetic biologist says he can create living things faster than nature can, essentially speeding up evolution. And, he says, he can do it cheaply.

- Gartner Hype Cycle 2010 Presentation – A presentation of the Gartner 2010 hype cycle.

(NOTE: Unless you are a Gartner client, you will not receive the accompanying script. However, the slides are excellent even standalone.

Robots

- [Millionaire builds 'intelligent robot' that sings Karaoke, laughs and tells jokes](#) – Mr Ellis has spent years creating the four-foot plastic robot in an echo of Geppetto, the fairy tale carpenter who crafted a puppet son that came to life called Pinocchio. His creation is so advanced it can tell jokes and keep its human parents up to date on their interests by scanning the internet.

- [MIT researchers unveil autonomous oil-absorbing robot](#) – Using a cutting edge nanotechnology, researchers at MIT have created a robotic prototype that could autonomously navigate the surface of the ocean to collect surface oil and process it on site.

- [Shape-shifting robots](#) – By combining origami and electrical engineering, researchers at MIT and Harvard are working to develop the ultimate reconfigurable robot — one that can turn into absolutely anything.

- [Next Generation Surgical Robots: Where's the Doctor?](#) – As physician-guided robots routinely operate on patients at most major hospitals, the next generation robot could eliminate a surprising element from that scenario -- the doctor.

Search Engines

- [A Search Service that Can Peer into the Future](#) – A Yahoo Research tool mines news archives for meaning--illuminating past, present, and even future events.

Sensors

- [The Difference Engine: Chattering objects](#) – An update on the 'internet of things', featuring some of the obstacles yet to be overcome. (NOTE: See the next link for more news about the 'internet of things'.)

- [10 YouTube videos about the Internet of Things](#) – The Internet of Things is what happens when you take everyday ordinary objects and put Internet-connected microchips inside them. These microchips help you not only keep track of your belongings, but many of these devices sense their surroundings and report it to other machines as well as to you when you most need it.

Simulation

- [TRAF*MAN Traffic Simulation for Decision Support using AI & VW](#)– (video) Traf*Man was developed by Ambient Performance, Masa Group and Coram UK with a UK Technology Strategy Board grant to explore the use of Artificial Intelligence and simulation technology to support traffic management for UK managed motorways.

Speech Recognition

- [Speech Recognition Systems Must Get Smarter](#) – Those who loathe talking on the phone to automated speech recognition systems may take solace in the fact that scientists are working to make such systems more lifelike and less annoying to use.

Virtual Reality

- [Japan mobile phone makers to roll out 'augmented reality'](#) – The "Terminator" had it, US fighter pilots use it and it's the next hot feature on Japanese smartphones -- "augmented reality" which peppers the world around you with useful bits of information.

Wearable Computers

- [VIRUS-BUILT WEARABLE BATTERIES COULD POWER MILITARY](#) – Viruses have plagued humanity for millennia, but now they have been tapped to build batteries that can be sprayed onto uniforms.

Web 2.0

- [App Lets You Know When Friends Are Nearby](#) – New services try to make location information useful but not invasive. Unlike some services, which bombard users with the location of everyone in their social network, face2face only notifies users when a contact is nearby, and it does not give out that contact's exact location.

- [Web 2.0 risks and rewards for federal agencies](#) – The nature of record keeping and government transparency in the information age is rapidly changing. Officials can text, tweet, direct message, send "Facemail," IM or Skype, all from a personal smartphone.