SteveKnode.com Jun 2010

E.I.T. Links

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

"If you don't know where you are going, you might end up someplace else."
- Yogi Berra

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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 Jun 2010, 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 and previous newsletters are available at: http://www.steveknode.com/newsletters.htm.

Anyone seeking more frequent updates can follow my 'tweets' via my twitter account, http://www.twitter.com/sknode

Links for this Issue

AI General

- Scope of Artificial Intelligence in Business – Artificial Intelligence is making quite an inroad into the business world. Finance, marketing, and HR applications and impacts are all featured in this article.
- An AI Physician On Every Smartphone? An Xprize Challenge – The latest Xprize challenge is the creation of an Artificial Intelligence physician that you could access from your smartphone. The possibilities are enormous, especially for the billion plus people around the world who live more than a few hours walk or drive from the nearest doctor.
- There's Nothing Elementary About IBM's Remarkable Watson – IBM is almost ready to challenge the best in a game of Jeopardy this Fall. Watch the included video to see how far Watson has come.

Brain

- Mind Over Mass Media – Interesting perspective relating to the recent articles about how our brains are being rewired or changed by media. This article puts a more optimistic spin on developments.

Chatterbots

- The New Face of Autism Therapy – With one in 110 children diagnosed with autism, and therapists in short supply, researchers are developing humanoids to fill the gaps. But can robots help patients forge stronger bonds with people?
- Counterinsurgency Training by 'Virtual Human' – Using artificial intelligence and the graphics techniques behind "Avatar", a USC institute creates 'virtual humans' and interactive immersions that train American soldiers to win hearts and minds in Afghanistan.

- Computers Learn to Listen, and Some Talk Back – Chatterbots are starting to perform many tasks that require interaction, thereby showing the progression in development of the technology.

Data Mining/Business Intelligence

- Searching for conflicts of interest – A law firm in the United Kingdom is using a search-powered solution to eliminate the hazard of conflicts of interest. A search platform is used to search all key business applications firmwide—including document, practice and case management systems and databases—to find potential conflicts.

Expert Systems

- Artificial Intelligence Added to Medloom Clinical Decision Support System – This system checks for interactions between drugs and warns of potential problems.

Future

- The Best Way to Predict the Future (video) – This outstanding video by Peter Diamandis discusses the future and how to predict it along with some thoughts on innovation.

Information Overload

- How to Manage Your News Consumption in the Real-Time Web Era – Is the Real-Time Web making news consumption better or worse? In a Wired magazine article, book author Nicholas Carr argues that the Internet is reducing our ability to comprehend content on the Web. In a separate blog post, Carr even suggests that websites and blogs should move hyperlinks from the body of an article to the bottom - apparently, links distract readers and cause them to understand an article less.

Information Visualization

- The Internet IS a Series of Tubes: Real-Time Mapping of the London Underground – The live train map for the London Underground is a nearly real-time Google Maps mashup that shows the various trains of the London Underground as they move about their subterranean travels.

- Project explores the 'internet of things' – Researchers from University College London have developed a digital tool that allows people to attach memories to objects in the form of text, audio or video.

Innovation

- LiveMatrix Launches – A company called LiveMatrix tracks live events on the Web including streaming video, auctions, sales, and competitions. By providing a listing for the Web that resembles TV timetables, the company hopes to "make the time dimension of the Web searchable," according to cofounder Nova Spivack.

- Qik on EVO Does Free Video Chat – Video chat continues to emerge, this app moves video chatting off the desktop and into the palm of your hand.

- Self-assembling vehicles take flight (w/ Video) – Researchers in Switzerland are developing miniature vehicles that can self-assemble and then take off vertically and fly as a stable array.

- Power your smart phone with sunlight on the go – An Ottawa-based company has developed an environmentally friendly and portable power charger for **handheld devices** like the smart phone, **iPod** and Nintendo, that eliminates the need for disposable batteries.

- An affordable, portable, pocket-sized Personal Fuel Cell – At last, the first portable, affordable hydrogen fuel cell for personal usage. The Horizon MiniPak might well prove to be the “disruptive” technology the press release claims it to be.

- The Verticle Farm Grows Up – An entirely new approach to indoor farming must be invented, employing cutting edge

technologies. The Vertical Farm must be efficient (cheap to construct and safe to operate). Vertical farms, many stories high, will be situated in the heart of the world's urban centers. If successfully implemented, they offer the promise of urban renewal, sustainable production of a safe and varied food supply (year-round crop production), and the eventual repair of ecosystems that have been sacrificed for horizontal farming.

- Calif. license plates might go digital, show ads – As electronic highway billboards flashing neon advertisements become more prevalent, the next frontier in distracted driving is already approaching _ ad-blaring license plates.

Intelligent Agents

- New virtual-agent software uses AI to help users – Rapid Adapt is based on a feature called AutoLearn, VirtuOz said, which automatically analyzes conversations between customers on the phone and the virtual agent. The goal is to find those customers' true intent, and then offer human administrators one of a small number of choices for how to proceed, based on the phone customer's needs and requests.

Knowledge Management

- Washington's I.T. Guy – The story of one man's quest to liberate all government information -- with or without the government's help.

- Knowledge Management & E-Learning: An International Journal – A journal with many relevant articles on KM and E-learning, published quarterly.

- Semantic startup Primal builds Pages around your thoughts – Primal tries to understand the actual meaning of a user's commands, and with Pages it tries to create a webpage that contains the exact information you're looking for.

Machine Learning

- AI That Picks Stocks Better Than the Pros – A computer science professor uses textual analysis of articles to beat the market. It works by ingesting large quantities of financial news stories along with minute-by-minute stock price data, and then using the former to figure out how to predict the latter. Then it buys, or shorts, every stock it believes will move more than 1% of its current price in the next 20 minutes - and it never holds a stock for longer.

Manufacturing

- Rise of the replicators – There have been amazing developments in the area of machines that can replicate parts. This one can replicate replacement parts for itself. (NOTE: You need to be a New Scientist subscriber to access the full article.)

- The Future By Design – Everything that's ever been made is being re-examined. Designers are deconstructing concepts, buildings, computers-you name it-and starting fresh. New technology is enabling new avenues and outlets for design as well. Here, a look at up-and-coming designers who are changing definitions and defying conventions in their respective fields, as well as a sampling of some of the most innovative creations emerging around the world.

Medical

- 10 iPad Apps for Health and Fitness – Of course, iPad apps related to health and fitness. Several are very interesting and useful.

- Engineers design pill that signals it has been swallowed – Seeking a way to confirm that patients have taken their medication, researchers have added a tiny microchip and digestible antenna to a standard pill capsule. The prototype is intended to pave the way for mass-produced pills that, when ingested, automatically alert doctors, loved ones or scientists working with patients in clinical drug trials.

- 'Tattoo' may help diabetics track their blood sugar – Chemical engineers are working on carbon nanotubes that could be injected under the skin to reveal blood glucose levels.

- DNA Robots to Hunt and Kill Cancer – Assembling a molecular-sized robot using DNA was recently demonstrated by researchers aiming for nano-robots to detect disease markers on a cell, diagnose it and deliver a cargo of cancer-killing drugs as appropriate.

- Just Breathe: New, Painless Diabetes Detection – Using nanotechnology, researchers have developed a breath sensor to rapidly detect Type 1 diabetes. Blood tests and finger pricks could become a thing of the past.

- Startup to Offer Patients a Genetic Profile of their Cancer – You can now obtain a personalized picture of your cancer. Many cancer researchers believe that therapies could be more effective if they target genetic aberrations in a patient's cancer. In recent years, there have been a handful of successes in targeting cancer treatments in this way.

- Regenerative Medicine 3: Tissue Engineering – Third part of this excellent series on Regenerative Medicine. This issue presents exemplary advances made over the past 18 months in an even more extraordinary potential form of regenerative medicine: Regeneration itself, as practiced by salamanders, zebra fish, and even human fetuses.

- Stem Cells From Own Eyes Restore Vision to Blind (Update1) – Patients blinded in one or both eyes by chemical burns regained their vision after healthy stem cells were extracted from their eyes and reimplanted, according to a report by Italian researchers at a scientific meeting.

- Old Livers Made New Again – Scientists have taken the first steps toward building functional, transplantable livers. In a study in rats, published online today by *Nature Medicine*, the researchers took donor livers, gently stripped them of their cells while leaving other material intact, and then used the remaining structure as a scaffold on which to grow healthy liver cells.

- An MRI Machine in the Palm of the Hand – Utilizing nuclear magnetic resonance spectroscopy, German researchers have developed a magnet that could lead to a pocket-sized MRI machine. This technology could revolutionize medical testing and research in other scientific fields.

- Three Technologies That Will Kill Medical Costs -- Utilizing advanced technologies in the medical industry has the potential to cut costs and provide constant and more accurate care than traditional methods. Here's a close look at three exciting new options: smart pills, wireless heart monitors, and robot surgeons.

- Smartphone add-on will bring eye tests to the masses – This clever smartphone app, combined with a special eyepiece, could very well allow almost anyone to conduct their own eye test.

- 21st century roadmap to make America the healthiest nation in the world – A Commission of national health care experts convened by the Center for the Study of the Presidency and Congress (CSPC) has unveiled a roadmap and integrated approach that will put "health" back into our nation's health care system as well as address key opportunities following passage of health care reform legislation.

Military

- Military-Grade Augmented Reality Could Redefine Modern Warfare – A Chicago-based company called Tanagram Partners is currently developing military-grade augmented reality technology that - if developed to the full potential of its prototypes - would completely change the face of military combat as we know it.

MISC

- Internet Speedtest results going public – Consumers and scholars will be able to

download statistics on user's average bandwidth for free.

- Steve Jobs at D8 on Flash, iPad and the post-PC era – Insightful interview with Steve Jobs, discussing the future.
- The Trilogy of Webs for Machines: Mashing It All Together – Connecting the three webs (Web of Data, Web of Identities, and Web of Services) is becoming very important to assist in dealing with the complex problems facing humanity.

Nanotechnology

- The needs of society are driving the nano revolution. – Nanotechnology applications are increasing across all industry sectors, strongly driven by societal needs. Advances in nanotechnology are contributing in medicine, automobiles, agriculture, etc. This is a fascinating look at some examples.

- Researchers create self-assembling nanodevices that move and change shape on demand – By emulating nature's design principles, a team at Harvard's Medical School has created nanodevices made of DNA that self-assemble and can be programmed to move and change shape on demand. These programmable nanodevices are highly suitable for medical applications because DNA is both biocompatible and biodegradable.

Neural Networks

- Using Neural Networks to Classify Music – Students at the University of Hong Kong describes a novel use of neural networks, collections of artificial neurons or nodes that can be trained to accomplish a wide variety of tasks, previously used only in image recognition. The result was a set of trained neural networks that could correctly identify the genre of a song, which in computer science is considered a very hard problem, with greater than 87 percent accuracy.

NLP

- Program detects sarcasm in your e-mail – Researchers have developed a computer program that can identify online sarcasm with an accuracy rate of about 80%.

- Translate the real world with Google Goggles – Google goggles can read English, French, Italian, German and Spanish and can translate to many more languages.

Robots

- High-Wire Robot to Inspect the Grid – A robot designed to crawl along tens of thousands of miles of transmission lines could help inspect North America's vast and aging grid infrastructure without the need for manned helicopters inspections.

- What's The Secret Behind Diapers.com Success? A Kiva Robot Warehouse – This excellent example shows how a robot application can improve operations quite significantly (includes video).

Search Engines

- Zoho Goes Beyond Google Apps With Unified Search – (includes video) Zoho has launched unified search today across all of its applications. Previously, Zoho had search on individual apps. The new capability means that people may search across all applications in one search query.

- Innovations in AI and Search (video) – The director of research at Google gives his outline for where search is headed.

Sensors

- Towards a Trillion Nodes: Crossbow Sensors – These sensors are used for crop monitoring, microclimate studies and environmental research - for example they've been deployed in vineyards. The sensors measure a range of things, such as soil moisture, ambient temperature and humidity, leaf wetness, soil water content, solar radiation.

- Vision and Challenges for Realising the Internet of Things – As the Internet of

Things continues to progress rapidly, these challenges will have to be overcome.

- Implantable & wearable monitoring devices for the tech-savvy generation – Implantable devices of all types are on the near horizon, further implementing one of my mantras, 'knowing everything about everything at all times.'

- 'Smart dust' aims to monitor everything – A vision from several years ago, "smart dust" is now taking shape.These "smart dust" particles monitor everything, acting like electronic nerve endings for the planet. Fitted with computing power, sensing equipment, wireless radios and long battery life, the smart dust would make observations and relay mountains of real-time data about people, cities and the natural environment.

Speech recognition

- Online Language Learning Company Babbel Adds Voice Recognition Tool – As important as memorizing vocabulary, conjugating verbs, and declining nouns are, nothing beats speaking practice when it comes to learning a foreign language. The German company Babbel helps make that a lot less intimidating for online learners today with integration of a speech recognition tool into its language learning system.

Virtual Reality

- How Augmented Reality Helps Doctors Save Lives – Several real world applications of Augmented Reality in medicine are highlighted in this article.

- How iPhone 4 Could Change Augmented Reality – The possibilities for Augmented Reality on the iPhone are tremendous, according to this article.

Wearable Computers

- Chemical sensors printed on elastic could lead to 'smart' underwear – Researchers are investigating new ways of making our clothing more "intelligent" – from smart shirts for theater ushers to the development of clothing that can respond to the wearer's emotive state. So would it surprise you to learn that your humble underpants could one day save your life? A new study has shown that printed sensors on the elastic band of your underpants could monitor biomarkers in your sweat and tears, make autonomous diagnoses and even administer life-saving drugs.

Web 2.0

- 6 Mashups of Music and Artificial Intelligence (includes video) – Several interesting mashups are highlighted in this article, helping people make music even if they have no formal training.

- Blogs and tweets could predict the future – Blogs and tweets are increasingly being used to make accurate predictions about the future (more of the 'Wisdom of Crowds' effect).

- The Future of Location Data, Beyond Social Networking -- Data about the geographic locations of people and things will in the near-term future become a massive flow of sensor, satellite and citizen input made freely available to developers through government and other collaboration programs.

- Meet the team that knows who is REALLY influential on Twitter (Klout) – The debate about who really has influence via twitter is answered here. You can also see how you rate with the twitter scoring tool.

- Why Twitter Is the Future of News –An unprecedented analysis reveals that the micro-blogging service is remarkably effective at spreading "important" information.