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TECHNO TRENDS

THE BIG IDEAS THAT ARE CHANGING EVERYTHING

SOCIAL NETWORKS THAT BOOST YOUR BUSINESS (PART I)

BY DANIEL BURRUS, CEO OF BURRUS RESEARCH

Most people are familiar with the term "Web 2.0," which refers to a second generation of web development and design that focuses on fostering social networking via the web. Innovative companies are beginning to embrace Web 2.0 as a way to enhance communication, information sharing, and collaboration, thereby allowing them to work smarter rather than harder.

Unfortunately, many businesses feel that Web 2.0 and social networking are for the younger generation and a waste of time when used by employees. However, once you understand the power of these applications and how to use them in your company, you'll quickly find that they can be invaluable tools to boost your bottom line. Following is an overview of some of the best Business 2.0 tools that are personal tools with business applicability.

FACEBOOK

Facebook enables you to connect and share with the people in your life. Users can join networks organized by city, workplace, school, and region to connect and interact with others. People can add friends, send them messages, and update their personal profiles to notify friends about themselves. *continued on page 2*

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SOCIAL NETWORKS *(continued from page 1)*

Business 2.0 use: Large organizations can connect all of their employees, or members, with Facebook. Some are finding an added advantage of using an internal, secure version of Facebook. This has helped organizations to dramatically increase their internal networking and collaboration. Ask yourself: Could we use Facebook, or our own internal version, to get people to collaborate at a higher level?

WIKIPEDIA

Wikipedia is a free online encyclopedia that anyone can use to find information on virtually any topic. Anyone can edit the content as well. Business 2.0 use: A large manufacturing company with engineers in locations around the world increased problem solving and collaboration by creating an internal, secure version of Wikipedia for sharing information on parts and service offerings as well as repair and maintenance instructions. Retailers and suppliers could create a version of Wikipedia to foster education and training as well as enhanced information sharing. Ask yourself: Could we create an internal version of Wikipedia to foster better information and knowledge sharing?

YOUTUBE

YouTube is a video sharing website where users can upload, view, and share video clips. YouTube displays a wide variety of user-generated video content as well as movie clips, product demonstrations, and commercials. Unregistered users can watch the videos, while registered users can upload an unlimited number of videos. Business 2.0 use: Businesses are posting humorous commercial videos to generate interest in their products with great success. The more entertaining it is, the more people watch it. Business partners could create a YouTube like channel for the purpose of educating and training. Ask Yourself: Could we enhance our marketing efforts as well as general communication by using YouTube?

DIGG

Digg is a social news web site made for people to discover and share content from anywhere on the Internet, by submitting and accessing links and stories. Voting stories thumbs up or a thumb down is the site's cornerstone function, respectively called digging and burying. Business 2.0 use: Many organizations have found this to be a good way to track the most interesting advances in technology or the most useful business news. Large organizations can create their own internal version for sharing what employees consider to be the most useful information. Ask yourself: Could we use Digg, or our own internal version, to get people to share their most interesting and valuable web-based information with each other? Next month, I will share two more personal tools along with some purely business 2.0 tools that will help create collaboration in a low-cost seamless way.

TECHNOLOGY NEWS HIGHLIGHTS

SMART PILL

A new medical device, which is scheduled to enter clinical trials later this year, will make it possible for doctors to more accurately dispense drugs that treat gastrointestinal (GI) disorders such as colon cancer, colitis, and Crohn's Disease. The ingestible electronic capsule, called the iPill, uses a pH sensor and thermometer to determine its location within the GI-tract. A radio transmitter and antenna are used to communicate with an external computer, and a tiny pump controlled by a built-in microprocessor dispenses the on-board supply of drugs at the optimal time. The biggest benefit of such a system is that it minimizes the toxic side effects of chemotherapy, steroids and other drugs on surrounding organs and tissue by more closely targeting the affected area. It will also open up possibilities for promising new treatments that could otherwise not be administered in high enough concentrations to be effective.

For information: Philips Research, High Tech Campus 5, 5656 AE Eindhoven, The Netherlands; phone: +31-40-27-91111; Web site: www.research.philips.com/newscenter/index.html

FIBER OPTICS FOR YOUR HOME

As consumer electronics (including televisions, computers, audio systems, and other peripherals) become more interconnected, the amount of data being transferred over home networks is increasing dramatically, especially in the form

of high resolution images and video. Because of this, high speed communication systems for the home user are expected to move away from USB and copper wiring to optical fiber and high speed wireless. The problem is that home applications of fiber optics typically involve shorter distances and sharper angles than conventional silica-based fibers are designed to handle. But a new fluororesin-based plastic optical fiber (POF) has recently been developed which is unbreakable, bendable and capable of transmitting data at speeds of more than 10Gbps even when it's tied in a knot! In addition, it can be installed by virtually any user with simple, inexpensive connectors. The company began shipping sample product last month.

For information: Asahi Glass Co., Ltd., 1-12-1, Yurakucho, Chiyoda-ku, Tokyo 100-8405, Japan; Web site: www.agc.co.jp/english/index.html

FAT-FIGHTING FABRIC

A revolutionary new material called Nanofront™ may actually help reduce body fat. Originally developed for use in industrial polishing cloths, the ultra-fine polyester fabric is made up of fibers that are only 700 nanometers in diameter (that's 1/7500th the size of a human hair). The increased surface area results in a highly flexible material that exhibits very little slippage (due to its high friction resistance), has excellent cooling properties, and absorbs moisture well, making it an ideal candidate for undergarments and sportswear. What the manufacturer didn't expect, however, was that wearing the fabric close to the body generates enough friction to work the underlying muscles and increase metabolism. The net result is that volunteers who wore Nanofront underwear over a 40-day period reduced their body fat by as much as several percent. Look for this new product to be available as early as next spring.

For information: Teijin Limited, 6-7, Minami-hommachi 1-chome, Chuo-ku, Osaka 541-8587, Japan; phone: +81-6-6268-2132; Web site: www.teijin.co.jp/english

INTERACTIVE TABLE DISPLAY

A new application of touch-screen technology could greatly enhance video collaboration and conferencing. The Lumisight Table is an interactive display that adjusts the projected images for up to four different viewers at a time. It uses a special film called Lumisty and a Fresnel lens in conjunction with a software algorithm that projects identical portions of an image in the same spot relative to any viewing angle. Public and private information for each viewer can also be integrated into the display. The next step will be to allow for three-dimensional manipulation of the image.

For information: Takeshhi Naemura, University of Tokyo; email: naemura@hc.ic.i.u-tokyo.ac.jp; Web site: www.hc.ic.i.u-tokyo.ac.jp/project/Lumisight/ or www.u-tokyo.ac.jp/index_e.html

DIAGNOSTIC NANOWIRES

Researchers have found a way to control how individual nanowires attach themselves to silicon chips. As a result, their electronic and structural properties can be tailored to very specific diagnostic applications. The first chips of this type were made by drilling an array of nano-sized wells into a silicon substrate. The chips were then submerged in ethanol while rhodium nanowires coated with strands of disease-specific DNA were released into the solution. When an electric charge was applied to selected wells, the nanowires were attracted to those spots and simply snapped into place. The process was then repeated for other areas of the chips using nanowires coated with different disease markers. By tracking the different DNA strands using fluorescence, it was determined that 99 percent of the nanowires ended up where they were meant to be. This technique of placing multiple markers on a single chip will enable clinicians to screen for several diseases at once. Having many copies of each disease marker will also minimize false positives and negatives.

For information: Christine Keating, Pennsylvania State University, 512 Chemistry Building, University Park, PA 16802; phone: 814-863-7832; email: keating@chem.psu.edu; Web site: www.psu.edu

SUPER-CHIP USES LESS POWER

A new microchip was recently unveiled that has seven times the computing power of existing models while consuming one-thirtieth the energy. How'd they do it? The key was to increase the signal to noise ratio. But instead of boosting power to drown out noise, the developers found a way to harness the interference that the chips generate. To put it in perspective…imagine a cell phone that would only require recharging once every two weeks or an implantable medical device that would last a lifetime.

The developers estimate that it will take about four years to tailor the devices to specific products.

For information: Yeo Kiat Seng, Nanyang Technological University, School of Electrical and Electronic Engineering, 76 Nanyang Drive, Basement 4, Block N2.1, Singapore 637331; phone: +65-6790-5630; email: eksyeo@ntu.edu.sg; Web site: www.ntu.edu.sg

UNDERGROUND SONAR

A sonar system has been developed that can accurately determine the position of objects underground. Its first application will be to align boring machines to ensure that they stay on track as they excavate tunnels. Sonar isn't typically used for this purpose because the waves don't travel well through the ground. However, the new device generates an output six times more powerful than traditional sonar equipment. The generator is attached to the tunneling equipment and monitored by multiple receivers above ground. The signals are triangulated to calculate the position with an error of less than 5 mm over a distance of 50 meters. When used underwater, it can pinpoint objects up to 1000 km away. It is estimated that the system will reduce the time required to locate objects by a factor of three, and do it at a quarter of the cost.

For information: Taisei Corporation, 1-25-1, Nishi-Shinjuku, Shinjuku-ku, Tokyo 163-0606, Japan; phone: +81-3-3348-1111; fax: +81-3-3345-0481; Web site: www.taisei.co.jp/english/

PLASTIC SOLAR CELLS

Dye-sensitive solar cells – also called Gratzel cells – are a promising alternative to conventional photovoltaic technology because they're flexible, durable, and potentially inexpensive to produce. However, they have been difficult to manufacture because they required the use of volatile electrolytes, which need to be carefully sealed inside the cells. Until now. By combining non-volatile electrolytes with a new dye, the inventor and his team have been able to achieve efficiencies of nearly 10 percent – the level needed to compete with conventional solar cell technologies. The key is that the new dye absorbs sunlight better, which also allows the thickness of the cell to be cut in half. Prototype devices have been shown to be stable for up to 1,000 hours when exposed to light and high temperatures.

For information: Michael Gratzel, Swiss Federal Institute of Technology, ETH Zentrum, Sonneggstrasse 5, CH-8092 Zurich, Switzerland; phone: +41-01-632-3769; fax: +41-01-632-1133; Web site: www.ethz.ch/index_EN

WIPERLESS WINDSHIELD

Japanese researchers have developed a special device for crystallizing titanium oxide that greatly improves its water-repelling properties. When used to treat surfaces, the process reduces roughness to less than one nanometer so that water droplets bead up and slide off at angles as small as 20 degrees. It's also more durable than organic water repellant materials. As a coating for windshields it could eliminate the need for wipers all together.

For information: Toshiya Watanabe, Watanabe Laboratory, University of Tokyo, 4-6-1 Komaba, Meguro-ku, Tokyo 153-8904, Japan; phone: +81-03-5452-5332; fax: +81-03-5452-5334; Web site: www.u-tokyo.ac.jp/index_e.html

MOVEABLE WING TIPS

Two aircraft manufacturers are working on improving fuel efficiency by making the 3-meter fins at the tips of the wings (also known as winglets) adjustable. During take-off, landing, climbing and descent, the wings would be straight to maximize lift. While cruising, the winglets would be angled to 30 degrees to minimize drag, and angling them 40 degrees would minimize wingspan while on the ground. One approach to achieving the flexibility needed involves the use of patented shape memory alloys, while another depends on proprietary hydraulics. Either way, varying the angle could result in as much as a five percent fuel reduction throughout the flight.

For information: Airbus UK, New Filton House, Filton, Bristol BS99 7AR, United Kingdom; phone: +44-1179-69-3831; Web site: www.airbus.com or Boeing, 100 North Riverside, Chicago, IL 60606; Web site: www.boeing.com

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