TECHNO TRENDS
THE BIG IDEAS THAT ARE CHANGING EVERYTHING

THE FUTURE OF APPS

BY DANIEL BURRUS, CEO OF BURRUS RESEARCH

No one can deny that the original telephone Alexander Graham Bell invented in 1876 has changed significantly. From a luxury item proudly displayed as the centerpiece of the home to something small, portable, and powerful that people keep within arms reach 24/7, the humble telephone has evolved into a mini personal computer capable of much more than traditional voice phone calls.

Today, with the advent of various Smart Phones, such as the iPhone, Blackberry, and Droid, phones have gotten…well…smarter. People can now download apps (short for applications) directly to their phone to help them with a number of everyday tasks. Whether you want to check flight schedules, create a to-do list, convert currency, track your daily caloric intake, relax to soothing sounds, or do any number of business or personal things, chances are there's an app for it.

As a result, businesses in every sector have been creating apps directly related to their core offerings. Some would even say that companies are "scrambling" to enter the apps market, believing that attracting additional customers and revenues is directly related to their app offerings.

continued on page 2

JULY 2010 VOL. XXVI, NO. 7

PUBLISHED BY: burrus research

800-827-6770
www.burrus.com

THE FUTURE OF APPS *(continued from page 1)*

Is creating apps a smart thing for businesses to do? Of course. Just as the phone has evolved, so has business. Having the ability to "touch" your customers when they're not in your store or on your website is vital to stay competitive. However, as technology and Smart Phones continue to evolve (which we know without a doubt that they will), it only makes sense that the apps companies create would have to change too. And that's exactly where many companies are missing the mark.

WHERE WE GO FROM HERE

While creating apps with a mass-market appeal is good (such as apps for finding a good restaurant or creating action lists), few companies are thinking about the evolution of apps and what the next generation of apps will be.

So what exactly will tomorrow's apps look like? The natural progression will be for apps to be enterprise level. In other words, there will need to be apps for purchasing, for logistics, for supply chain management, for lead generation, for patient care, etc. Tomorrow's apps will be like having a virtual assistant by your side. These apps won't just make you more productive with your work; they'll actually do some of the work for you. For example, in the medical field, we'll see apps for disease management, for patient records, and for remote diagnostics. The app will be more like an essential tool to perform a specific function rather than an ancillary item.

Aside from the app itself, the future of apps is also about where that app will be used. With Apple's launch of the iPad and soon competing smart pads by other manufacturers, apps are already finding new homes outside of the phone. Some Smart Phone apps are compatible with Smart Pads. But even those companies aren't thinking big enough…both literally and figuratively. Since the Smart Pads have bigger screens and more processing power, why should they do the same thing as the phone app? Why not take advantage of that extra space and power and come up with a new class of apps that can do things the phone apps can't? These are key questions companies must think about and address if they want to be serious players in the future app market.

But that's just the beginning. Next month, I will share the next evolution of apps for the Television and how to stake your claim in tomorrow's apps.

TECHNOLOGY NEWS HIGHLIGHTS

JUNCTIONLESS TRANSISTOR

In the quest for faster and faster transistors, one group of researchers is looking to the past – about 85 years! That's when an Austrian physicist first patented a simple version of the device, which, as it turns out, may hold the key to the transistors of tomorrow. The concept behind all of today's transistors includes a layer of one material sandwiched between two layers of another material. Electrons are exchanged between layers at the boundaries (or junctions), and as devices shrink in size, it has become harder and harder to make those junctions sharper. So, why not just eliminate them? That's essentially what the new device does by using only one type of "doping." The rod-shaped device is one-micron long, but to more effectively switch currents on and off and match up with existing components, the team is looking to shrink the device to 10 nanometers. More effective switching will allow the transistor to work at lower voltages and faster speeds while producing less heat.

For information: Jean-Pierre Colinge, Tyndall National Institute, Silicon Research Goup, Lee Maltings, Dyke Parade, Cork, Ireland; phone: +353-(0)21-90-4177; email: jean-piere.colinge@tyndall.ie; Web site: www.tyndall.ie

INEXPENSIVE SOLAR CELLS

The "Graetzel cell" – a low-cost alternative to silicon photovoltaic cells – was recently awarded the Millennium Technology prize. It consists of a layer of titanium dioxide nanoparticles that are covered with a dye squeezed from berries. Like the chlorophyll in green leaves, the dye absorbs much of the sun's energy, and the device coverts it to electricity in a process that has been likened to "artificial photosynthesis." Because it requires no elaborate manufacturing methods, the technology is viewed as a cost-effective alternative to fulfilling the world's future energy needs.

For information: Michael Graetzel, Ecole Polytechnique Federale de Lausanne, Laboratory of Photonics and Interfaces, CH Ga 526 (Bat. CH), Station 6, CH-1015 Lausanne, Switzerland; phone: +41-(0)21-693-3112; fax: +41-(0)21-693-6100; Web site: www.epfl.ch/index/en/html

PLASTIC FROM MUD

A new "smart" material could someday replace plastics, further reducing our reliance on oil. It's made from a few grams of nanoscale clay and 100 grams of water, with small quantities of sodium polyacrylate (a thickening agent) and an organic molecular glue. Even though it's almost 98 percent water by weight, the transparent, elastic hydrogel was strong enough to construct a 3.5 centimeter-wide, self-supporting bridge. When exposed to vibration, the bridge failed, but repaired itself once the stress was removed, likely due to the fact that it's held together by supramolecular forces. Freshly cut pieces of the material also stick to one another, making it easy to form complicated shapes.

For information: Takuzo Aida, University of Tokyo, Department of Chemistry and Biotechnology, School of Engineering, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113-8656, Japan; phone: +81-3-5841-7251; fax: +81-3-5841-7310; email: aida@macro.t.u-tokyo.ac.jp; Web site: www.u-tokyo.ac.jp/index_e.html

POWERFUL POTATOES

Researchers recently released a new technology to the developing world – free of charge – in the hope that it will help provide a sustainable source of energy in areas where the power infrastructure is lacking. It's based on the simple potato. Connecting zinc and copper electrodes to a slice of potato creates a highly efficient battery. And if the potato is boiled, the salt bridge capability is enhanced up to ten times, giving it power enough to run for days and even weeks, depending on conditions.

For information: Yaacov Michlin, CEO, Yissum Research Development Company Ltd., Hi-Tech Park, Edmond J. Safra Campus, Givat-Ram, P.O. Box 39135, Jerusalem 91390, Israel; phone: +972-2-658-6688; fax: +972-2-658-6689; Web site: www.yissum.co.il

ROBOT TEACHERS

Several projects are underway in research institutes throughout the world to investigate the viability of using robots as teachers. Far from the automatons that most people envision, artificial intelligence, motion tracking and speech recognition have produced engaging and highly effective instructors, especially in subjects or environments where repetition is key to learning. But research into how children interact with robot teachers has also opened up as new field of study called "affective computing" that is designed to make robots even more effective in the classroom. Interestingly, making a robot "look" human is not the most important characteristic when it comes to encouraging social interaction. Finding a physical "rhythm" that is synchronous with human behaviors (such as timing responses so that they are not too quick or too slow) makes a child more comfortable with – and therefore more trusting of – robots as teachers. Personality is important too. Studies indicate that a cooperative approach is much more effective than lecturing or instructing, especially in younger children. The vast amount of research currently underway will undoubtedly provide many interesting insights into the process of human learning.

For information: Javier Movellan, University of California at San Diego, Temporal Dynamics o Learning Center, Machine Perception Lab, Atkinson Hall, 6100, 9500 Gilman Drive, Mail Code 0440, LaJolla, CA 92093; phone: 858-822-5241; email: movellan@mplab.ucsd.edu; Web site: www.ucsd.edu

GREEN SOLUTION FOR WATER POLLUTION

A new compound has been developed that cleans and disinfects polluted water without any toxic byproducts and at a lower cost than current methods. Traditionally, cleaning up water pollution has required the use of two different substances – one to oxidize and one to coagulate. Carcinogens, including trihaomethanes and bromates are often byproducts of these methods. The new compound, which is ferrate-based, can perform both tasks, and the only byproducts are environmentally safe iron oxides. In addition, the product can be produced on site, eliminating issues with supply, stability and shelf life.

For information: Virender Sharma, Florida Institute of Technology, College of Science, Department of Chemistry, 150 W. University Blvd., Building 502, Room 220, Melbourne, FL 32901; phone: 321-674-8046; fax: 321-674-8951; email: vsharma@fit.edu or chemistry@fit..edu; Web site: www.fit.edu

STORIES FROM BEYOND THE GRAVE

Near field communications (NFC) has been widely used in object hyperlinking, a highly effective means of providing "how-to" instructions at the point-of-need. Now, thanks to a new application of this technology, you'll never have to worry about being remembered after you're gone. A new product called RosettaStone allows you to store up biographical information, as well as a picture, on a palm-sized stone tablet that can be installed in your headstone (or mounted to an existing one). Any passerby with an RFID-enabled mobile device can retrieve the details of your life by simply touching it to the tablet. The phone's magnetic field powers up the internal microchip just long enough to download the information. Standard internet-enabled cell phones can access the data by accessing a unique URL shown on the tablet. The millennium class granite tablets (which carry an inscription life of more than 3,000 years) can be engraved with a variety of symbols relating to the deceased's life. So…what do you want on your tombstone?

For information: Objecs, LLC, Tolleson, AZ; phone: 777-692-7009; email: support@objecs.com; Web site: www.objecs.com or www.personalrosettastone.com

NAVIGATING FOR FUEL EFFICIENCY

Satellite navigation systems have become increasingly capable of recommending the most fuel-efficient routes based on speed limits and number of intersections along a journey. But a new system called ECO2 takes it one step further. Since the best route may not be the same for all vehicles and all types of drivers, ECO2 connects to a car's central computer to access information, including the size of the engine, type of fuel, drag characteristics and whether the transmission is automatic or manual. It also allows the driver to select a preferred driving style – fast, normal or economical – and factors that into its algorithm for determining the most economical route. Tests show that ECO2 can reduce fuel consumption by up to 9 percent, while increasing the average trip time by only 9 percent.

For information: Robert Bosch, GmBH, Postfach 10 60 50, D-70049 Stuttgart, Germany; phone: +49-711-811-6403; fax: +49-711-811-7612; Web site: www.bosch.de

MAGLEV MEASURES FAT CONTENT

Engineers at Harvard have designed a portable sensor that can measure the densities of solids and liquids quickly and accurately. The technology is based on magnetic levitation (maglev), which is widely used in high-speed train applications. The sensor, about the size of an ice cube, is filled with a solution of paramagnetic ions and two magnets are positioned at each end. When samples are placed inside, density is measured as a function of the distance they travel through the fluid. It has been used to analyze the fat content of milk, cheese, vegetable oil, and peanut butter. It will also measure the salinity of water and can be used to monitor the water content of grains during the drying process.

For information: George Whitesides, Harvard University, Department of Chemistry and Chemical Biology, 32 Pierce Hall, 29 Oxford Street, Cambridge, MA 02138; phone: 617-495-3275; fax: 617-496-4654; email: mrsec@harvard.edu; Web site: www.mrsec.harvard.edu

HULU ON YOUR iPHONE

Hulu recently launched a new subscription service – Hulu Plus – that will allow users to view episodes not only on their computers, but on their iPhones and iPads too. Televisions equipped with certain Samsung Blu-ray players will also be able to tie into this service, and the company plans to include Playstation3 and Xbox early next year. Unlike Hulu's free service which airs only recent episodes, Hulu Plus offers the entire current season of popular television shows, plus multiple back seasons of many discontinued series and some movies. Hulu Plus content is available in high definition at up to 720p (as compared with 480p for the free service) and the cost for the service is $9.99 per month.

For information: Web site: www.hulu.com

Technotrends is published 12 times a year by Burrus Research, Inc., a research and consulting firm that monitors global advancements in science and technology and their direct impact on business and consumers. Mary Norby, Editor P.O. Box 47, Hartland, WI 53029-0047. To subscribe, call 800-827-6770, or email office@burrus.com. © 2010 Burrus Research, Inc.