TECHNO TRENDS
THE BIG IDEAS THAT ARE CHANGING EVERYTHING

X-BOX FOR BUSINESS & EDUCATION PART 2

BY DANIEL BURRUS, CEO OF BURRUS RESEARCH

For the past four years, I have been surveying my business audiences, asking them if they have seen or played any of the X-Box video games. At this point in time, I estimate the total surveyed audience to be about 300,000, and out of that, only about 5% have seen one of these powerful computers at work. Keep in mind that I usually talk to business leaders such as CEOs, CFOs, CIOs, as well as VPs and sales leaders from Fortune 500 companies. In other words, the leadership of today's major corporations is unaware of the power that is in the hands of our youth.

After I survey each audience, and we all see that only a few hands went up, I give them a homework assignment: get together with a kid and play one of the new video games. And then I give them their motivation. I tell them that while they are playing, think X-Box for business. Why? Because businesses spend large sums of money on training and education and any tool that can accelerate or enhance learning would save both time and money.

Last month, I described the results of twenty-three years of my observation, research, and experimentation into how to *Continued on page 2*

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X-BOX PART 2 *(continued from page 1)*

enhance learning. The breakthrough insight is that there are five elements that can dramatically accelerate learning. The learning experience needs to be immersive, interactive, fun, game-like, and competitive. This combination causes the learner to function at a very high level of concentration and focus, and learning is dramatically enhanced. All five of these aspects can be accomplished by partnering with today's video game companies to turn corporate education and training programs into new interactive video games for business.

X-BOX COMPATIBLE WITH BUSINESS

The beauty of using the X-Box 360 is that it is both inexpensive and widely available. It will easily integrate with enterprise computer systems because the new Windows operating system Vista, as well as Office 2007, uses the same XML language as the X-Box. This means that there will be no problem in getting the game player to work with business computing systems.

TECHNOLOGY NEWS HIGHLIGHTS

HARVESTING STEM CELLS WITHOUT HARMING EMBRYOS

Stem cell research has been hampered by the fact that the current methods typically involve destroying viable embryos. But one bioscience company has been working on a way to obtain stem cells without killing the original embryo. Using embryos left over from in vitro fertilization procedures, the researchers removed one cell from a young embryo containing eight to ten cells. Eventually, out of 16 embryos, they were able to isolate two stable stem cells capable of transforming into any of the three major cell tissue types.

A similar procedure is often used for pre-implantation genetic diagnosis, and it has been shown that these biopsied embryos can develop into normal babies. The company hopes that the new method will encourage political leaders to reconsider federal funding for stem cell research.

For information: Bob Lanza, Advanced Cell Technology, Inc., 1201 Harbor Bay Parkway, Suite 120, Alameda, CA 94502; phone: 510-748-4900; fax: 510-748-4950; Web site: www.advancedcell.com

APPLE TV

Apple Computer is working on a new set-top box that will allow users to stream content, such as movies from their computers and iPods, to a television set. Codenamed iTV (although that will not be the name of the final product), the system will feature USB 2.0, Ethernet, WiFi, optical audio, and HDMI ports as well as standard stereo audio ports and a built-in power supply. It will be compatible with both Macs and PCs and carry a price tag of $299. The release date is expected to be in early 2007.

For information: Web site: www.apple.com

SMALLEST GPS ON THE GLOBE

A semiconductor design company has shrunk the size of a GPS system so that it can fit into virtually any device, including watches, pedometers, and medical tracking systems. Using a basic GPS platform, they modified the circuitry to extract only the required information from satellite feeds and simultaneously convert the signals into digital data. The resulting chip is not only much smaller than typical GPS devices (it measures only 18mm square and weighs 7 grams) but faster, taking only about one second to display location information as compared to eight seconds for traditional systems.

As far as accuracy is concerned, the software can determine location within three meters, but precision can be increased to within several centimeters when coupled with digital mapping.

For information: C&N, Inc., Hiratomi Building 5F, 1-10-1, Uchi-Kanda, Chiyoda-ku, Tokyo 101-0047, Japan; phone: +81-3-5280-9031; fax: +81-3-5280-2617; Web site: www.candn.co.jp/english

A NEW DIMENSION IN FILMMAKING

A new technology called volumetric cinematography may soon begin transforming the way we view motion pictures – literally. The Contour™ Reality Capture System was designed to create realistic 3D representations of human faces and other objects that change their shape as they move. It uses an array of cameras to record a scene from many different angles. Phosphorescent powder, placed on the actors and props, helps to record subtle changes in surface characteristics.

Unlike current animation technology, which places between 30 and 160 marker dots on a human face, Contour captures up to 100,000 points at a precision of 0.1 mm. The result is a digital 3D image that can be manipulated like a video game. An actor can be aged or transformed into a totally different character, without losing the subtleties of their facial and body movements, a capability that has been dubbed "Digital Makeup." Filmmakers may have access to the technology by the end of the year.

For information: Mova, LLC, 355 Bryant Street, Suite 110, San Francisco, CA 94107; phone: 415-947-5590; Web site: www.mova.com

NEW SOURCES FOR ETHANOL

Most of the ethanol produced today is derived from sugar cane and corn, but because these crops are also utilized as food, the amount that can be supplied for bio-fuels is limited. Now, researchers have developed a technology to produce ethanol from "soft-biomass," including the inedible parts of plants, such as leaves, stalks and straw.

Until now, the largest obstacle to converting the cellulose found in soft biomass was that compounds produced during the decomposition process inhibited the spread of bacteria needed for fermentation. The researchers solved this problem by developing a microorganism that reduces the influence of inhibitors and boosts the conversion efficiency by up to 10 times. A pilot plant for mass-production is planned in two to three years.

For information: RITE: Research Institute of Innovative Technology for the Earth, 9-2, Kizugawa-dai, Kizu-Cho, Soraku-Gun, Kyoto 619-0292, Japan; phone: +81-774-75-2300; fax: +81-774-75-2314; Web site: www.rite.or.jp

SOLD TO THE LOWEST BIDDER!

A novel marketing idea that is catching on fast is turning the concept of auctions upside down by awarding the bid not to the highest bidder, but the lowest. Prizes for the auctions are products donated by large companies. Media partners pay to run promotions under their brands. And cell phone users simply have to text message the lowest unique bid to win amazing prizes – like a Mini Cooper for $50.43 or a plasma TV for $8.85. In return, companies reach a broad range of prospective customers. The goal is to get consumers to imagine them using the product, and participating companies find it to be an effective means of building brand association.

For information: Limbo 41414, Inc., 270 East Lane, Suite 1, Burlingame, CA 94010; phone: 877-715-4626; Web site: www.41414.com

MINIATURE PROJECTOR

Researchers at Fraunhofer Institute have developed a projector the size of a sugar cube, paving the way for them to be incorporated into a variety of handheld devices, including cameras and digital video players. The main breakthrough that allowed such a drastic reduction in size was replacing the micro-mirror array with a single mirror that can be tilted around two axes. The second challenge was to shrink the red, green and blue diode lasers that are used as light sources. Other applications for the technology could include inexpensive distance sensors in automobiles or robots.

For information: Andreas Brauer, Fraunhofer Institute for Applied Optics and Precision Engineering (IOF), Albert-Einstein-Str.7, 07745 Jena, Germany; phone: +49-36-41-807-404; fax: +49-36-41-807-600; email: andreas.brauer@iof.fraunhofer.de; Web site: www.iof.fraunhofer.de

I.D. SYSTEM USES BIO-ELECTRIC SIGNALS

A new biometric identification system called BioDynamic Signature™ has been shown to accurately verify a person's identity using the electrical impulses generated by their body. The system is designed so that a user would place two fingers from both hands on conductive contacts for a few seconds. The system records the electrophysiological signals that are generated by brain, heart, and central nervous system activity. These patterns of activity are unique to every individual,

providing a highly accurate means of identification. In comparison to fingerprint sensors, which can cost as much as $6.00 to implement, the new scanner technology would cost only $1.00, and it can be incorporated easily into computers, cell phones or PDAs.

For information: IDesia, 7 Halamish Street, Caesarea Industrial Park, P. O. Box 3080, Israel 38900; phone: +972-4-6371938; fax: +972-4-6376088; Web site: www.idesia-biometrics.com

NANO-SCALE GENERATOR

Researchers at Georgia Tech are looking at ways to generate electricity from within the body, paving the way for a whole new generation of self-powered, medical devices. Their "nano-generator" consists of a zinc-oxide nanowire, which uses a property called piezoelectric effect to convert mechanical movement, vibration, or hydraulic energy into electricity. When the wires are deflected, a voltage is generated in response to the mechanical stress.

Devices such as these could conceivably be used to generate power from body movement, sound waves, blood pressure, blood flow or a variety of other physiological properties. The energy they produce could then be used to drive implantable sensors, monitors, bio-detectors and other devices.

For information: Zhong Lin Wang, Georgia Institute of Technology, Materials Science and Engineering, 771 Ferst Drive, N.W., Love Building, Room 163, Atlanta, GA 30332-0245; phone: 404-894-8008; fax: 404-894-9140; email: zhong.wang@mse.gatech.edu; Web site: www.mse.gatech.edu or www.nanoscience.gatech.edu

ROLLIN' ROBOTS!

A new approach to locomotion may be the key to increasing agility and maneuverability of robots in normal home and workplace environments. Typical wheeled drives are slow, awkward, and require a large base for stability. But a new design called the "ballbot" can move around in any direction on a rubber ball about the size of a cantaloupe.

The five-foot tall, 95-pound robot is cylindrical in shape and uses a network of three gyroscopes to maintain its balance. Electric rollers on top of the ball can propel it in any direction and also keep its base centered underneath its mass. In fact, the upper half of the robot is heavier than the lower half, so it can easily maneuver into tight spaces and even rotate in place. Next, the researchers plan to attach mechanical arms to see how they affect the dynamic stability of the unit.

For information: Ralph Hollis, Carnegie Mellon University, Robotics Institute, 5000 Forbes Ave., Pittsburgh, PA 15213; phone: 412-268-8264; email: rhollis@andrew.cmu.edu; Web site: www.ri.cmu.edu

INNOVATIVE CONCRETE COOLS BUILDINGS

Engineers have developed a new type of concrete that they estimate will last for up to 10,000 years. A special mineral is mixed with the water, sand and gravel, and then poured into a frame reinforced with metal bars. The surface is then treated with carbon dioxide, which reacts with the mineral to fill gaps in the concrete. The resulting building material is impervious to moisture and salt, preventing corrosion of the reinforcing bars and prolonging the life of the material by as much as 100 times.

In another new development, engineers have designed a water-retentive concrete that can be used to cool buildings using rainwater. The material is made from cement, burnt stones and cellulose, and is coated with a ceramic material that reflects sunlight. The lightweight slabs are placed on the roof of a building, and as water evaporates from the concrete, it pulls heat from the building. In tests conducted during July and August, rooftop temperatures were reduced by 15-20 degrees Celsius (60-68 degrees Fahrenheit). The slabs also act as additional insulation during cold winter months.

For information: Kajima Corp., 2-7, Motoakasaka 1-chome, Minato-ku, Tokyo 107-8388, Japan, phone: +81-3-3404-3311; fax: +81-3-3470-1444; Web site: www.kajima.co.jp

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