



TECHNO

THE BIG IDEAS THAT
ARE CHANGING EVERYTHING

TRENDS

THE TRUST FACTOR

BY DANIEL BURRUS, CEO OF BURRUS RESEARCH



As you might guess, I review a variety of electronic newspapers and news sources every day, but after all these years, I still enjoy reading a traditional print version of the morning paper with that first cup of coffee. It might be because I spend so much time every day looking at a computer screen, that I just want to start the day unplugged, moving more than just my eyes.

A little over a month ago, the local newspaper I subscribe to sent me my annual renewal form in the mail. The annual renewal price was \$190. I was in the middle of a speaking tour and didn't have time to respond to the renewal notice. Another few weeks went by and then I received the marketing call. They said; "We noticed you did not renew your paper this year. If you renew now, it will only cost you \$90. That's a savings of \$100. Will you renew now?"

I said yes. They didn't know it, but I would have renewed at the usual \$190; I was just too busy. There is something else they obviously don't know. I will never trust them again. In just a few sentences, they taught me to never pay the bills they send me, because if I do, I'm ripping myself off. *Continued on page 2*

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THE TRUST FACTOR *(continued from page 1)*

THE REAL LESSON

I'm sure this is not what the management at the local paper wanted to teach me. How do mistakes like this get made? The answer is simple. We "assume" trust is there because we see organizations and ourselves as being trusting and trusted. Because trust is assumed in all that we do, we often fail to consider if our actions will undermine trust. In this case, the local paper taught me not to trust any of the offers they send me in the mail. I now know, there will be a better deal if I take no action and wait for the better offer.

NEVER ASSUME TRUST

Anytime you are introducing something new, a change of any kind, ask yourself what will happen to trust if you do it in this way? If the answer is that trust will go down, don't do it in that way. I didn't say don't do it. I said don't do it in that way. Change how you do it so that trust is maintained. And, if anyone in your organization can find a way to increase trust, reward those people openly because you will want that behavior repeated.

In my example, a better idea would have been to call me and say that if I would renew my newspaper subscription now, as a thank you for having me remain as a loyal customer, they would give me an additional three months free. I would bet that customers would see the extra months as a thank you, not a rip off, and trust would be maintained.

Another strategy would be to say they are offering me a one-time-only offer to renew at a reduced rate and this price would not be offered again. By emphasizing the one-time-only aspect of the offer, it is less likely to be seen as a rip off.

The moral of this story is: never teach your customers to distrust you.

TECHNOLOGY NEWS HIGHLIGHTS

SUPER STICKY STUFF

A new material, inspired by gecko feet, could someday make it possible to climb the side of a building without the use of a ladder. Called Synthetic Gecko, the revolutionary plastic is made up of tiny mushroom-like hairs called setae that produce weak intermolecular forces – known as van der Waals forces – which cause molecules to be attracted to each other. One square meter of Synthetic Gecko could suspend the weight of a car. The cumulative effect of millions of setae is what gives the material its super-adhesive properties. But because it works by molecular interaction, it doesn't feel sticky to the touch. It is manufactured by a technique that etches three-dimensional patterns into a substrate using light. The process is inexpensive and well known, and it can easily be scaled up for very large areas.

For information: BAE Systems, Advanced Technology Centre, Sowerby, Golf Course Lane Site, Filton, Bristol BS347QW, United Kingdom; phone: +44-117-302-8000; fax: +44-117-302-8007; Web site: www.baesystems.com

VIRTUAL SURGERY

Computer scientists at Brigham Young University have developed a 3D software tool that enables physicians to instantly visualize a patient's anatomy by extracting an image from CT scans, MRIs or 3D ultrasound data. Called "Live Surface," it provides surgeons with an interactive tool to easily isolate soft tissue structures (such as blood vessels, muscles and organs) as well as bone. Unlike other 3D systems, which are slow and provide limited detail, Live Surface uses a hierarchical algorithm (including a shape identification program similar to Adobe's "magnetic lasso") to eliminate irrelevant information quickly and easily. The computer can then devote its processing power to making refined calculations of only those portions of the image that are of interest to the clinician. The system can project an image of the anatomy onto the patient to provide a road map for the surgeon during an operation. It can also be used to enhance diagnosis or more accurately pinpoint the location of a tumor by providing multiple views of a patient's internal organs.

For information: William Barrett, Ph.D., Brigham Young University, Computer Science Department, 3361 TMCB, P. O. Box 26576, Provo, UT 84062; phone: 801-422-3027; fax: 801-422-0169; email: william_barrett@byu.edu; Web site: www.byu.edu

A NEW “SPIN” ON COMPUTER CHIPS

Today's computers use two different types of technology – semiconductors to make computations, and magnetic materials for data storage. But scientists at Princeton University recently discovered a way to build magnetic semiconductors, a finding which may someday lead to computer chips that not only calculate results, but store data as well. Using a scanning tunneling microscope, individual gallium atoms are replaced with manganese to enhance the magnetic properties of the material. In this way, they can make use of the flow of electrons and their quantum “spin” to develop dual-function chips, a technology which they have dubbed “spintronics.”

For information: Ali Yazdani, Princeton University, Department of Physics, 307 Jadwin Hall, Princeton, NJ 08544; phone: 609-258-4390; fax: 609-258-1006; email: yazdani@princeton.edu; Web site: www.princeton.edu

DIET PILL DOES MORE THAN MANAGE WEIGHT

An FDA decision on Rimonabant, a new weight loss drug, is due later this year. So what's so special about this pill? Not only does it help you shed pounds, it also controls cravings for nicotine and alcohol, while decreasing several risk factors for heart disease and diabetes. The new drug targets endocannabinoids – the same biochemicals that cause the “munchies” in marijuana smokers. Blocking these receptors in the brain suppresses appetite, not only for food, but for other substances as well. Some unexpected side benefits were that it also raised good cholesterol and lowered triglycerides, blood sugar, and certain hormones that are linked to heart disease. Rimonabant is currently available in the U.K. (and soon in Germany) under the name Acomplia.

For information: Sanofi-Aventis, 174 av. De France, 75013 Paris, France; phone: +33-1-5377-4400; Web site: www.sanofi-aventis.com or www.acompliaslim.com

DRONE AIRCRAFT AIDS POLICE

The Los Angeles County Sheriff's Department is in the process of testing a new system for trailing criminals. The Sky Seer™ is a small, low-cost unmanned aerial vehicle (UAV) designed for short-range monitoring and reconnaissance. Weighing only about five pounds, it can easily be deployed by one person, and will cruise at a speed of up to 30 miles per hour for 70 minutes at a range of 2 miles. The drone is equipped with a color or high-resolution black and white camera that sends video to the ground station. An optional thermal camera is also available for night operation.

For information: Octatron, Inc., 877 Executive Center Drive West, Suite 103, St. Petersburg, FL 33702; phone: 727-643-4090; fax: 727-578-5018; Web site: www.octatron.com

ULTRASONICS BOOST ETHANOL PRODUCTION

Engineers at Iowa State University have received a provisional patent to commercialize a process that increases ethanol production from corn by nearly 30 percent. Conventional methods use a dry-milling process that leaves much of the starch unconverted. But by pre-treating the corn with ultrasonics, it is broken into finer particles, allowing more of the starch to be exposed to the enzymes used to convert the sugars into ethanol.

For information: David Grewell, Ph.D., Iowa State University, 100 Davidson Hall, Ames, IA 50011; phone: 515-294-2036; fax: 515-294-2255; email: dgrewell@iastate.edu; Web site: www.iastate.edu

GESTURE RECOGNITION SOFTWARE

Researchers at the State University of New York have developed a “Fingertip Digitizer” that is capable of translating the meanings of hand gestures using a computer. The movements can then be used to execute commands in much the same way that a mouse directs a computer. The system can interpret such motions as finger waving, tapping, or pointing. Potential applications for the technology include personal computing, computer gaming, and medical diagnostics.

For information: Young-Seok Kim, Ph.D., State University of New York, Department of Mechanical and Aerospace Engineering, VR Lab, 809 Furnas Hall, Buffalo, NY 14260; phone: 716-645-2593; email: ykim5@buffalo.edu; Web site: www.buffalo.edu

ANTI-ALZHEIMER'S PILL

A new drug called PBT2 has shown promise as a means of slowing or stopping the onset of Alzheimer's disease. It works by reducing amyloid proteins and blocking their interaction with metals, such as copper and zinc, in the brain. In a 15-month trial on mice, amyloid protein levels were reduced by 60 percent within 24 hours. The subjects also demonstrated a significant improvement in spatial memory – an important indicator of cognitive function – after only four days. Human clinical trials of the new drug are expected to begin within a few weeks in Sweden.

For information: George Fink, Mental Health Research Institute of Victoria, 155 Oak Street, Parkville, Victoria 3052, Australia; phone: +61-3-9388-1633; fax: +61-3-9387-5061; Web site: www.mhri.edu.au

FACE SCANNER DETECTS SUN DAMAGE

A new scanning system, called Clarity Pro, is designed to help dermatologists and cosmetologists identify skin damage caused by the sun. It employs fluorescence spectroscopy – a technology used to inspect semiconductor wafers for defects – to produce white and UV images of a person's face. A software program analyzes the images to determine how much damage has occurred beneath the surface and forecast whether the patient is at risk for skin cancer. The system can also identify whether a clogged pore will turn into acne and how deep a wrinkle is likely to get. The scanner currently sells for \$20,000, but the manufacturer is purportedly also working on a smaller version for home use.

For information: Raj Chhibber, BrighTex Bio-Photonics, LLC, 5941 Optical Court, San Jose, CA 95138; phone: 408-960-3816; fax: 408-960-2916; Web site: www.btbp.org

PETAFLUP COMPUTER

The world's first petaflop computer – capable of performing one quadrillion floating point operations per second – has been installed at the Riken Institute in Japan. The MDGrape3, which is also known as Protein Explorer, will be used to study and analyze diseases, protein structures and the mechanisms of drug compounds at the molecular level. The special purpose computer contains 4,808 chips designed specifically to simulate molecular motion and forces, and is three times faster than the Blue Gene computer at Lawrence Livermore National Laboratory in terms of raw computing power.

For information: Riken Yokohama Institute, 1-7-22 Suehiro, Turumi-ku, Yokohama, Kanagawa 230-0045, Japan; phone: +81-45-503-9111; fax: +81-45-503-9113; Web site: www.riken.co.jp

AUTONOMOUS UNDERWATER ROBOTS

A field experiment, currently under way in Monterey Bay, uses robots to make detailed observations of the ocean without human input. The underwater robots, known as "gliders," swim in a series of rectangular patterns (similar to schools of fish) as they measure a variety of parameters, including ocean temperature, salinity, and currents. Control algorithms allow the gliders to make decisions independently about how to change their course on a day-to-day basis to capture the richest information possible. The patterns that they follow span a volume that is 20 kilometers wide, 40 kilometers long, and 400 meters deep. The constant mobility of the gliders enables them to map the dynamic nature of the sea as it shifts in time and space.

The information collected by the robots is analyzed to predict future ocean conditions using a process called Adaptive Sampling and Prediction (ASAP). As forecasts are updated, the investigative team can guide the robots toward features of interest. The program is expected to greatly enhance our understanding of the ocean and its chaotic behavior.

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