



# TECHNO

THE BIG IDEAS THAT  
ARE CHANGING EVERYTHING

# TRENDS

## INCREASE YOUR COMPANY'S TRUST FACTOR (PART II)

BY DANIEL BURRUS, CEO OF BURRUS RESEARCH



Trust mishaps don't just happen with external customers and the public; they also happen internally with employees. A few years ago one major

company laid-off a few thousand employees. Rather than meeting with people individually, laying them off with dignity and providing support services, the company had their security guards tell those being laid-off the bad news, gave them their paperwork, watched them clean out their desk, and then escorted the former employees out the door. The employees still working there learned one important lesson that day: Never trust upper management.

Last month, I shared two strategies to increase your company's trust factor to enhance the bottom line. This month, I would like to share two additional strategies to help foster trust in your organization.

### THINK IN TERMS OF THE OTHER PERSON'S PERSPECTIVE

No matter how hard you try, sometimes mistakes will happen and trust will decrease. But rather than accept the lower level of trust, see this time as an opportunity to raise the bar on trust with those who are feeling less of it. For example, suppose you have a major disagreement with one of your key distributors. *continued on page 2*

---

MARCH 2009

VOL. XXV, NO. 3

---

- Hydrophobic Coating
- 96% Efficient Solar Panels
- People Watcher
- Bionic Farmers
- Do-It-Yourself Smart Tags
- Lightning The Load
- Is It Really Decaf?
- You Too Can Have Superhero Vision
- Jet Biofuel
- Ultra-Thin E-Reader
- Smart Shirt

---

VISIT [TECHNOTRENDS.COM](http://TECHNOTRENDS.COM)

For an easy solution to keep up on the rapidly changing world of science and technology, visit our new updated web site [Technotrends.com](http://Technotrends.com)

SIGN UP FOR OUR FREE VIDEO E-BRIEFING

Visit our web site [www.Burrus.com](http://www.Burrus.com) and sign up on our home page to receive our free Video e-Briefing featuring highlights of our monthly Consumer Intentions and Actions Survey.

PUBLISHED BY: **burrus**  
research

800-827-6770

[www.burrus.com](http://www.burrus.com)

## TRUST FACTOR *(continued from page 1)*

You both think the other is wrong. This is when you need to step up and say to the distributor, "We've had a long and trusting relationship with you and we don't want to lose that. What can we do to make you happy?" The answer you'll hear will likely be more than fair because the conversation has now shifted from a confrontational to a relational one. Everyone will come out a winner.

### SURVEY CUSTOMERS AND EMPLOYEES ABOUT TRUST

Have employees, business partners, and customers rate you on trust. You could even have them fill out the trust meter for you. With this feedback, you will know where you stand and can make adjustments. All too often, trust is undermined and the company and its leaders are the last to know, and this can be disastrous. If you are the first to know, you can make corrections before it is too late. This also shows everyone that relationships and mutual trust are not just words, they are imperatives.

### TRUST PROVIDES A BIG ADVANTAGE IN ANY ECONOMY

Too often, customer service and support are cut back when the economy heads south. People are laid-off with no warning or support. Face-to-face customer meetings are cut back or canceled. But this is a time to do the opposite. When things are bad, relationships become more important! Doing things better stands out more. Becoming a trusted advisor versus a sales person stands out. Going the extra mile is more unique.

When you increase trust, your relationships will deepen and your business will improve.

## **TECHNOLOGY NEWS HIGHLIGHTS**

### HYDROPHOBIC COATING

Swiss researchers have developed a new coating that greatly enhances the water repellent properties of fabrics while still allowing them to breathe. It consists of a thin layer of silicon nanofilaments that are deposited on the material. The tiny needle-like structures seal the surface by trapping air molecules so that liquid never comes into contact with the fabric. The technique also works on glass, wood, metals and other materials to reduce or prevent rot, corrosion and growth of micro-organisms that thrive in a moist environment. And it serves to keep surfaces clean since droplets roll right off, taking dirt with them.

*For information: Dr. Stefan Seeger, University of Zurich, Institute of Physical Chemistry, Winterthurerstrasse 190, 8057 Zurich, Switzerland; phone: +41-44-635-4451; fax: +41-44-635-6813; email: [sseeger@pci.uzh.ch](mailto:sseeger@pci.uzh.ch); Web site: [www.uzh.ch/index\\_en.html](http://www.uzh.ch/index_en.html)*

### 96% EFFICIENT SOLAR PANELS

The efficiency of traditional solar panels is highly dependent on the angle at which sunlight strikes the collectors. But a new material has been developed that would greatly boost efficiency, regardless of the sun's direction. The thin silicon film (which is about 1/100th the thickness of a human hair) is constructed in layers of varying densities, with the top layer being the most porous. This creates a "funnel" effect which focuses light from virtually any angle toward the photovoltaic substrate. It also reduces reflection to further improve efficiency. The material would reduce cost by eliminating the hardware currently needed to rotate panels with the sun, and could be applied to any existing solar panel.

*For information: Shawn Yu Lin, Rensselaer Polytechnic, 110 Eighth Street, Troy, NY 12180; phone: 518-276-2978; fax: 518-276-8761; email: [sylin@rpi.edu](mailto:sylin@rpi.edu); Web site: [www.rpi.edu](http://www.rpi.edu)*

### PEOPLE WATCHER

A newly-developed image-analyzing algorithm works with twice the precision of current systems to automatically detect people in photographs or videos, even when viewed against complex backgrounds. The expert system "learns" to recognize the outline of a human body by analyzing some 5000 pictures. It can then process feeds at a rate of thirty frames per second to determine both the number of people present and their positions within the image. Applications for the technology include surveillance systems that detect prowlers and car-mounted cameras that can identify when

pedestrians are present. A commercial version of the software is expected to be available in two to three years.

*For information: Toshiba Corporation, 1-1 Shibaura 1-chome, Minato-ku, Tokyo 105-8001, Japan; phone: +81-3-3457-4511; fax: +81-3-3456-1631; Web site: [www.toshiba.com](http://www.toshiba.com)*

## BIONIC FARMERS

Researchers have developed a mechanized bodysuit that is designed to reduce the amount of energy farmers need to exert by 60-70 percent. It attaches at the shoulders, arms, back and legs to provide assistance with arm and leg movements associated with five different agricultural tasks. Sensors detect body movements and then generate signals to enhance and support specific motions. A speech recognition system also allows the wearer to input verbal commands. In tests at a university farm, it was shown to increase productivity by up to thirty percent. The team is currently working on ways to reduce the weight of the device from 25 kilograms to around ten kilograms. It could be available for research purposes as early as next year with commercial products available in five to seven years at a target selling price of 300,000 to 500,000 yen (US\$3,000-5,000)

*For information: Shigeki Toyama, Tokyo University of Agriculture and Technology, Division of Mechanical Systems Engineering, 2-24-16 Nakacho, Koganei, Tokyo 184-8588, Japan; fax: +81-42-385-7204; email: [mseadmin@cc.tuat.ac.jp](mailto:mseadmin@cc.tuat.ac.jp); Web site: [www.tuat.ac.jp/english/index.html](http://www.tuat.ac.jp/english/index.html)*

## DO-IT-YOURSELF SMART TAGS

A new Internet service called touchatag (formerly tikitag) allows you to create your own radio frequency identification (RFID) tags and 2D barcodes (QR codes) that automatically launch online applications (including Skype, iTunes and Web browsers) using a variety of devices. For example, you could attach a unique smart tag to a souvenir and configure it so that it points your Web browser to a picture album from your vacation. You could place a smart tag on a photo of your mom and automatically place a call to her when you scan it with your RFID-enabled mobile phone. Or you could seamlessly link clients to your Web site using a 2D matrix code printed on your business card or brochure. An application correlation service (ACS) database manages the link between each unique tag and the action that is to be initiated. You can even program a single tag to perform up to four different functions depending on the reader that is used. The system uses passive high frequency RFID operating at 13.56 MHz and is also compatible with near field communications. A starter kit, which includes the programmer module and ten tags, retails for about \$50.

*For information: Alcatel-Lucent, 54 rue de la Boetie, 75008 Paris, France; phone: +33-1-4076-1010; Web site: [www.alcatel-lucent.com](http://www.alcatel-lucent.com) or [www.touchatag.com](http://www.touchatag.com)*

## LIGHTENING THE LOAD

A new kind of stainless steel called S-4L is geared toward making auto frames lighter. Boosting chromium content to 16-18 percent and adding roughly .5 percent nitrogen makes the new material stronger than traditional steel. And keeping the carbon content below .1 percent keeps it more elastic while helping to facilitate machining and welding. The elasticity of S-4L is about one-and-a-half times greater than high tensile strength steel. Although it costs more, the new metal can be shaped 10 to 30 percent thinner, making it an attractive alternative for developing lighter yet more durable vehicles.

*For information: Nippon Metal Industry Co., Shinjuku Mitsui Building, 1-1, Nishi-Shinjuku 2-chome, Shinjuku-ku, Tokyo 163-0470, Japan; Web site: [www.nikkinko.co.jp/index\\_e/html](http://www.nikkinko.co.jp/index_e/html)*

## IS IT REALLY DECAF?

According to some studies, up to 30 percent of the coffee that is served up as decaf actually contains unacceptably high levels of caffeine – a real problem for those of use who can't tolerate the jolt. But a new product called the D+Caf™ Test Strip allows you to quickly and easily determine (with laboratory accuracy) whether that cup of coffee or tea you just ordered is decaf or not. Simply touch the beverage with one of the strips and, in as little as thirty seconds, you can read the results. The test is 98 percent accurate for beverages with more than 20 milligrams of caffeine per six ounce serving (the same serving of regular coffee would contain about 150 milligrams) and can be used on hot or cold beverages. One box of twenty strips retails for about \$9.95.

*For information: Silver Lake Research, P.O. Box 686, Monrovia, CA 91017; phone: 888-438-1942; fax: 626-359-6601; Web site: [www.silverlakeresearch.com](http://www.silverlakeresearch.com)*

## YOU TOO CAN HAVE SUPERHERO VISION

A new device, due to be released late this year, will allow homeowners and handymen to see through walls. Utilizing a technology called low wavelength imaging, it will be the first low-cost, portable microwave camera to deliver the same high-quality images as large, stationary machines currently in use. The affordable, battery operated tool will help take the guesswork out of home and office repairs and renovations by providing a clear, concise view of wiring, plumbing or other obstacles hidden behind walls, floors and ceilings. It can display, store, analyze and even transmit the images. Other potential applications for the technology include security scanning, industrial quality control and medical imaging.

*For information: Chris Adams, Walleye Technologies, 411A Highland Avenue, Suite 3467, Somerville, MA 02144; phone: 617-273-2551; fax: 617-625-4132; Web site: [www.walleyetechnologies.com](http://www.walleyetechnologies.com)*

## JET BIOFUEL

Japan Airlines recently conducted a test flight using a Boeing 737 powered by a 50/50 mixture of biofuel and regular jet fuel. The one-and-a-half hour flight, which took off from Haneda Airport in Tokyo, is one of a series of flights designed to demonstrate the viability of different plants as alternative energy sources for aviation. So far, they have tested biofuels from camelina, jatropha, and a mixture of jatropha and algae. The ability to create blends from local sources will allow for regional diversity and ensure availability of fuel on a localized basis.

*For information: Japan Airlines, 4-11, Higashi-shinagawa 2-chome, Shinagawa-ku, Tokyo 140-8605, Japan; Web site: [www.jal.com](http://www.jal.com)*

## ULTRA-THIN E-READER

Proprietary plastic electronics technology gives the Plastic Logic electronic reader the largest display in the industry (a full 8.5" by 11") while keeping it thin (about a quarter of an inch), lightweight, and durable. The new device features a user-friendly, touchscreen interface – making it ideal for viewing newspapers, periodicals and books – and utilizes e-ink to provide high readability and prolong battery life. It supports Microsoft Word, Excel, and PowerPoint documents as well as Adobe PDFs, and can store thousands of documents in its built in memory. The new e-reader is scheduled to be commercially available in 2010.

*For information: Plastic Logic Ltd., 296 Cambridge Science Park, Milton Road, Cambridge CB4 0WD, United Kingdom; phone: +44-(0)1223-706-000; fax: +44-(0)1223-706-006; Web site: [www.plasticlogic.com](http://www.plasticlogic.com)*

## SMART SHIRT

The LifeShirt® is a wearable remote patient monitoring (RPM) device that is designed to help clinicians gather physiological data from patients in everyday settings where they live, work, and play. The "smart garment" is as light as an undershirt, but has sensors embedded in the fabric to continuously monitor movement, respiration, posture, and activity level for twenty-four hours. Three additional electrodes are applied directly to the skin to measure heart rate and temperature. The system can also gather data on blood oxygen levels, brain wave activity, exhaled carbon dioxide, and cough for more in-depth studies. Devices such as this offer improved diagnosis of chronic conditions, such as cardiovascular disease and sleep disorders, while keeping costs down. It is estimated that RPM could save U.S. hospitals as much as \$200 billion over the next twenty-five years. Other applications for the LifeShirt include observing athletic performance, studying the effects of drugs on patients as they perform everyday activities, or monitoring exhaustion levels of emergency responders.

*For information: Howard Baker, CEO, Vivometrics Inc., 121 North Fir Street, Suite E, Ventura, CA 93001; phone: 805-667-2225; fax: 805-667-6646; email: [info@vivometrics.com](mailto:info@vivometrics.com); Web site: [www.vivometrics.com](http://www.vivometrics.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](mailto:office@burrus.com). © 2009 Burrus Research, Inc.