TECHNO TRENDS
THE BIG IDEAS THAT ARE CHANGING EVERYTHING

# 7 FAILURES OF BUSINESS GROWTH (PART III)

*BY DANIEL BURRUS, CEO OF BURRUS RESEARCH*

Over the last two months I have covered five of the seven failures of business growth: #1 Failure to anticipate, #2 Failure to communicate, #3 Failure to collaborate, #4 Failure to innovate, and #5 Failure to pre-solve problems.

In this issue, I'll share the final two failures of business growth and the strategies needed to grow your business for years to come.

#6 FAILURE TO DE-COMMODITIZE

Any product or service can be de-commoditized. Unfortunately, many companies don't take the initiative to make their product unique. They come up with something new, and make that their main product. But other people copy the product. Margins get thin. Sales slow down. And they end up competing on price. The key is to take your product and put a service wrapper around it. Here's an example: In the electricity industry, the utility provider cannot increase prices without permission from ratepayers. To de-commoditize themselves, one electric company created what they called "digital electricity." They told their customers, "If your company runs a lot of expensive computerized equipment and you don't want the electricity coming into your office to ever turn off or fluctuate in current or voltage, then you need digital electricity, which will cost more." Many big companies *continued on page 2*

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## 7 FAILURES OF GROWTH *(continued from page 1)*

signed up for the more expensive service, and in the near future, homeowners will have a similar interest because they will have multiple computers streaming audio and video in their home. This electric utility took a product and wrapped a service around it so they could charge more. Look at your product or service and think of ways that you can wrap a service around it to add value. But don't stop there. Keep adding value to it every year so you never become a commodity again.

#7 FAILURE TO DIFFERENTIATE

Over time, too many companies become just like everyone else. They don't continue to stand out. Even though they do strategic planning, it's usually just financial planning in disguise. True strategic planning needs to be more than numbers-based; it needs to focus on how you can differentiate your company and products from your competition instead of being and doing more of the same. So how do you differentiate? Simple…you stop doing all the failures of business growth just discussed. You start anticipating, communicating, collaborating, innovating, pre-solving problems, and de-commoditizing. Realize that you can infinitely differentiate your company if you have the courage to do the things your competition isn't doing.

BUSINSESS SUCCESS IS ON YOUR HORIZON

A weak economy doesn't have to limit business growth. When you know the failures to avoid and the strategies to combat them, you'll be well on your way to creating an organization that continues to grow despite outside conditions. So learn from these failures and rethink the way you do business. It'll pay off for years to come.

## *TECHNOLOGY NEWS HIGHLIGHTS*

## HIGH-SPEED, HIGH-RES CAMERA

A new CMOS (complementary metal-oxide semiconductor) chip has been developed that will substantially increase the resolution of professional quality digital cameras. At 24.81 megapixels, the new sensors can capture full-size 35mm images at an amazing 6.3 frames per second. In order to maintain uniform sensitivity and signal saturation, the device is fabricated using advanced planarization techniques. Each column within the sensor is also equipped with its own A/D converter to minimize noise and improve speed without sacrificing picture quality. Production is targeted for later this year.

*For information: Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo 108-0075, Japan; Web site: www.sony.net/SonyInfo/News/Press/*

## BETTER BIODIESEL

A new technique for turning cooking oil into fuel not only makes the process more efficient but also less costly. The key ingredient is a genetically engineered microorganism containing lipase, an enzyme that catalyzes the breakdown of fats. As a result, the process requires smaller amounts of alkaline chemicals that may be damaging to diesel engines. In addition, the glycerin by-products can be more easily removed, further reducing manufacturing costs. In comparison to conventional methods, which have a conversion efficiency of 50 to 60 percent, the new method boasts an efficiency of 90 percent. A pilot plant is planned for later this year.

*For information: Kobe University, 1-1 Rokkodai-cho, Nada-ku, Kobe 657-8501, Japan; phone: +81-78-881-1212; Web site: www.kobe-u.ac.jp/en/*

## CAPTURING $CO_2$ EMISSIONS

It has been estimated that 40 percent of the carbon dioxide released into the atmosphere comes from the 4,000 largest power generation and industrial plants, and a new coal-fired plant opens every week in China. So building more efficient carbon-capture facilities is imperative in our quest for a cleaner environment. A new technology called Just Catch Bio™ is capable of boosting the carbon dioxide capture rate from gas-fired power stations to 100 percent. The system draws the energy it requires (which would normally come from the power station itself) from an integrated biomass plant so the amount of power exported is unaffected. In addition, it scrubs the flue gases from both power plants, removing the carbon dioxide that would otherwise have been produced by the natural breakdown of the biomass. As an added benefit,

the biomass plant exports additional "green" power in the form of steam and electricity. The first of these systems is expected to be completed in 2009, and will be capable of removing up to 100,000 metric tons of carbon dioxide annually.

*For information: Aker Clean Carbon AS, Fjordalleen 16, 0115 Oslo, Norway; phone: +47-24-130000; fax: +47-24-130101; Web site: www.akercleancarbon.com*

## MIXED-FUEL CAR

In the first test-drive of its kind, Japanese researchers recently ran a standard auto on a mixture of hydrogen and gasoline, improving fuel efficiency and reducing carbon dioxide emissions by 30 percent. The engine was retrofitted with an onboard "dehydrogenation reactor," which extracts hydrogen from organic hydride using heat from the exhaust system. A mixture of 3 to 5 percent hydrogen was then added to the air intake resulting in a much leaner burn. This mixed-fuel approach could be the development that automakers have been looking for to meet European efficiency standards, which take effect in 2012. And since organic hydride is a liquid that can be stored and transported like gasoline, it's more likely to gain widespread acceptance in the short term than fuel cells.

*For information: Hrein Energy, Ueno Building 5F, 29-2, Nishi 2 chome, Kita 2 Jo, Chuo-ku, Sapporo 060-0002, Japan; Web site: www.hrein.jp/english/index.htm*

## ELECTRONICS OF DNA

In the growing field of nano-bioelectronics, Israeli researchers recently announced that they have uncovered the electronic structure of DNA, a discovery that could lead to faster and less costly methods for sequencing human DNA. It also represents a major step in studying the feasibility of creating biological circuits that would be capable of carrying out computing functions more efficiently than today's silicon technology. Using a scanning tunneling microscope, at temperatures of minus 195 degrees Celsius, the scientists were able to measure the current that passes across a long, homogeneous DNA molecule. Theoretical calculations based on quantum equations were then used to reveal the electronic structure. The results may also indicate what portions of the double helix actually contribute to the current flow.

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## BIOETHANOL DEHYDRATOR

A common issue in bioethanol production is how to remove the water that is generated as a by-product of the fermentation process. Conventional methods rely on distillation, which requires large amounts of energy in the form of heat. But a new de-watering membrane makes it possible to dehydrate biofuel twice as fast while consuming less energy. The membrane consists of bundles of porous ceramic tubes coated with a thin layer of zeolite. By carefully adjusting the amounts of silicon and aluminum (the hydrophilic and hydrophobic components) in the zeolite, the tubes can be constructed to quickly absorb water molecules and remove them, while allowing the larger ethanol molecules to pass through the membrane. Unlike other processes, which use a granular form of zeolite to absorb the water, the tubular design also eliminates the need to periodically regenerate the zeolite for reuse.

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## MORE POWERFUL UV-LED

Research into the use of ultraviolet (UV) light for removing toxins such as dioxins and PCBs has shown promising results, but the mercury lamps currently used have a relatively short life and their disposal poses an environmental hazard. UV light emitting diodes (LEDs) are a viable alternative, but their low power output has made them impractical for large-scale use.Recently, scientists discovered that simply altering the orientation of the crystal plane in relation to the substrate from vertical to horizontal increases the power output of UV LEDs by a factor of six. They believe that the addition of magnesium, silicon and other additives will boost the output even further toward the theoretical limit of 25 times current levels.

*For information: NTT Basic Research Laboratories, 3-1, Morinosato Wakamiya Atsugi-shi, Kanagawa 243-01, Japan, phone: +81-0462-40-3141; fax: +81-0462-70-2358; Web site: www.brl.ntt.co.jp/E/*

## HANDHELD PROJECTOR

A new display engine will soon allow projection display capabilities to be built into a variety of handheld devices. Called PicoP, the device uses lasers rather than bulky lenses to project bright, sharp images while using very little power and producing very little heat. Individual pixels are formed by bouncing red, green and blue light off of a pinhead-sized mirror at a rate of 24.4 million pixels per second. The device can generate a broader range of colors than many televisions, and in a dark room, it can fill a 100-inch screen with standard definition video. The first product to be released with PicoP technology will be a handheld (0.5 by 2.5 by 4.5 inch) projector called SHOW that connects to the video output of cell phones, digital cameras, laptops, and other mobile devices. The price of the pocket-sized device is estimated to be $300-$500.

*For information: Microvision, Inc., 62222 185th N.E., Redmond, WA 98052; phone: 425-936-6847; fax: 425-882-6600; Web site: www.microvision.com*

## BRIGHTER DISPLAYS FROM FISH DNA

A photonics expert has found a way to boost the brightness of organic light emitting diodes (OLEDs) by ten times using a very cheap and very plentiful additive – salmon sperm. In LEDs, packets of light (photons) are created when electrons collide with positively charged particles. But because they are constantly moving, many electrons never have the chance to make contact, so their photon-producing potential is never realized. However, when a thin film of DNA is introduced as a blocking layer, it slows down the electrons, giving them a better chance of generating photons. The result is an improvement in efficiency and brightness of one to two magnitudes. Although any DNA would fit the bill, salmon sperm is readily available. In the future, we can expect to see more and more precious metals being replaced by cheap renewable materials like this.

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## SPEAKING YOUR MIND

The Audeo is a new human-computer interface that can restore communication to people who can't speak. The lightweight, wireless neckband rests over the vocal chords where sensors intercept neurological signals from the brain and translate them using data analysis. The information can be processed into synthesized speech or be used to control other devices, such as a wheelchair.

*For information: Ambient Corporation, P.O. Box 2572, Champaign, IL 61825; phone: 217-408-4085; fax: 217-333-4050; Web site: www.theaudeo.com*

## BLOOD PRESSURE VACCINE

Researchers recently published the results of a Phase IIa clinical trial for a vaccine that fights high blood pressure. When compared to a placebo, the experimental vaccine showed a drop in both the systolic and diastolic values, particularly in the early morning when patients are at greatest risk for heart attack and stroke. In general, vaccines work by utilizing a person's own immune system to fight off infectious diseases. The new vaccine applies this same concept to chronic hypertension by signaling the immune system to build antibodies against a protein called angiotensin, which is instrumental in raising blood pressure during trauma or exertion. To do this, the protein is bound to a harmless fragment of a virus and injected into the patient's blood stream. When the immune system detects it, antibodies are automatically triggered to disable it. A vaccine such as this could help alleviate one of the biggest problems with treating chronic high blood pressure, namely, failure on the part of patients to take their pills.

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