



TECHNO

THE BIG IDEAS THAT
ARE CHANGING EVERYTHING

TRENDS

TAKE YOUR BIGGEST PROBLEM...AND SKIP IT

BY DANIEL BURRUS, CEO OF BURRUS RESEARCH



In my new book *Flash Foresight*, I share seven principles that can make invisible opportunities visible. Knowing when to skip your problems can quickly transform your work and life.

Every business has problems—some larger than others. Often when trying to “fix” a tough problem, the company gets even more mired in the challenge and can't get past the roadblock.

A better solution to solving those tough problems is to just skip it. That's right, skip the problem completely. When you confront your roadblock by leaping over it rather than having it stop you from reaching your goals, you see new solutions you never knew existed.

Realize that this strategy is very different from procrastination or avoidance, because it is based on recognizing the problem and making a conscious decision to find a way to move forward instead of being blocked by it. Here are some simple steps you can use to skip your problem.

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A NEW YORK TIMES BESTSELLER...

Flash Foresight has already been named a New York Times, Wall Street Journal and USA Today Bestseller. Daniel Burrus' new book was also #1 in hardcover and Kindle sales on Amazon.com You can get your hardcover or digital version of *Flash Foresight* at www.FlashForesight.com

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SKIP IT *(continued from page 1)*

YOUR PROBLEM ISN'T THE REAL PROBLEM

Often, you can't see the real problem because you're blinded by what you perceive is the problem. By skipping what you perceive as the problem, you are free to discover the real problem. Therefore, forget about what you think is the problem. If that problem simply didn't exist, what would you see in your company? Now the real problem (and solutions) can surface.

THINK IN TERMS OF OPPOSITES

Sometimes, the opposite of what you perceive is the problem is really your solution. For example, if your problem is "saving money," what's the opposite of that? Spending money. So instead of focusing on how you can save money, try focusing on your company's spending. When you focus on the spending and alter your company's spending habits, the "saving money" solution becomes evident.

LOOK AT TECHNOLOGY FOR HELP

Today's technology offers a wealth of options for solving numerous problems. Can't find a good typist for your company? How about using new and highly accurate dictation software? Need a way to get more ideas for products or services? Use the Internet to pull ideas from customers via online surveys. Look at what you need done and find a technology solution to automate it for you.

PEEL THE ONION

Think of your problem as the top layer of an onion. To find the problem, you need to peel it back by listing the components of the problem to see if you are working on the correct issue. Often you'll find that the core issue you're focusing on isn't the one that's causing the most pain, but that a sub-issue is truly at the heart of your problem.

FOCUS ON ONE PROBLEM AT A TIME

Sometimes a problem is complex and has many components working against you all at once. In fact, many problems are made up of multiple problems. You'll be better able to see the real problem (the one you should focus on) when you separate the other problems. Ultimately, every problem has a solution—some better than others. There are many paths to the same destination, and some don't have roadblocks. By asking yourself if you can skip the problem completely, you free your mind to look beyond the roadblock. That is usually where the best solution lies.

TECHNOLOGY NEWS HIGHLIGHTS

SELF-SEALING CO₂

Recent efforts to reduce greenhouse gas emissions in the atmosphere include carbon capture storage (CCS) projects, in which carbon dioxide is captured from fossil fuel plants and injected underground. It's typically stored in empty oil or gas reservoirs or porous rock deposits underneath a layer of caprock, but there are concerns that seismic and other geologic activity could allow it to leak out. And underground leaks are difficult to pinpoint since by the time it's detected at the surface, it could be miles away from the original fissure. Now a new process has been developed that would automatically seal any cracks that might develop in these underground storage areas. A substance is added to the CO₂ gas before it is pumped into the ground, which precipitates into a sealant whenever the gas density drops. Energy companies in Europe and South America are currently funding a three-year project to begin utilizing the new technology in the field.

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SATELLITE ON A CHIP

On this month's space shuttle mission, scientists are planning to test new technology that may be a first step in creating satellites the size of a microchip. Called ChipSats, they would be less than 1cm in diameter and weigh only a few milligrams. Built with off-the-shelf components, they would be inexpensive to manufacture, and because of their very

large area-to-mass ratio, they would be able to re-enter the atmosphere without burning up. Thousands of satellite chips could be deployed to monitor atmospheric conditions or magnetic fields simultaneously from multiple points. The chips contain all of the components necessary to collect data and transmit it back to Earth. This month's proof-of-concept experiments will test their survivability as well as the design.

For information: Mason Peck, Cornell University, Mechanical and Aerospace Engineering, Upson Hall, Room 212, Ithaca, NY 14853; phone: 607-255-4023; email: mp336@cornell.edu; Web site: www.cornell.edu

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QUICK-CHARGING BATTERIES

Illinois researchers recently developed a way to make batteries that can charge and discharge between 10 and 100 times faster than current technology. The key was to permeate the cathode (where the charge is stored) with a conductive metal lattice so that the electrons don't have so far to travel. They accomplished this by packing polystyrene nanospheres into a lattice structure, filling the gaps with nickel, and dissolving the styrene. The resulting three-dimensional scaffold was thinned down until it made up only about 6 percent of the total volume, and a thin film of storage material was then deposited on the scaffold. They found that the storage capacity of the new devices was actually about 10 to 20 percent greater than normal batteries. Batteries that can charge very quickly have obvious advantages. Imagine, for example, being able to charge an electric car in about the same time it would take to fill it with gas. On the opposite extreme, quickly discharging batteries could make solar or wind generator systems more attractive by providing faster, uninterrupted access to stored energy.

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GERM-KILLING TEXTILES

According to the European Centre for Disease Control (ECDC) antibiotic resistant bugs are the most important infectious disease threat in Europe and cause approximately 50,000 deaths every year in the EU alone. Now a team of researchers has harnessed the properties of nanomaterials to create textiles that will kill MRSA (methicillin resistant staphylococcus aureus) and other superbugs on contact. The patent-pending process embeds the photocatalytic nanoparticles in a way that minimizes "loose" or "free" particles. When exposed to light, these particles split water in the air and on surfaces into reactive compounds like peroxide, which have antimicrobial properties. When new, the fabric kills 100 percent of the superbugs that come into contact with it; even after ten washes, it's still 70 percent effective. The development could find applications in bedding, drapes and even uniforms – a market that's worth about \$1 billion annually.

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REDUCING POWER WASTE

A new technology was recently unveiled that could cut energy waste by up to 90 percent. It targets the modules that are used to convert power from alternating current to direct current and back again – a process that results in hundreds of terawatts of energy loss. In fact, full implementation would be the equivalent of taking 300 coal-powered power plants off the grid. Current power conversion modules are silicon-based, which is inefficient at high voltages because it does not completely cut the flow of power when turned off. The new design uses gallium nitride, which minimizes loss, especially at high power levels. Initial applications for the new devices will be aimed at manufacturing power supplies for computer servers to reduce power consumption in large data centers. In the future, it could also be used to improve the efficiency of inverters for solar panels and electric vehicles.

For information: Transphorm, 115 Castilian Drive, Goleta, CA 93117; phone: 805-456-1300; Web site: www.transphormusa.com

DEEP SEA SUBMARINE

Later this year, Virgin Oceanic will make its first dive to the bottom of the Mariana Trench – the deepest point on Earth at 7 miles (11 kilometers) below sea level. Over the two years following, the recently unveiled sub will make a total of five dives – to the depths of each of the world’s five oceans (Pacific, Atlantic, Indian, Arctic and Southern) – taking its pilot where no man has ever gone before. Built more like an airplane than a traditional submarine, the underwater craft can operate at depths up to 37,000 feet and withstand pressures 1,500 times that of an airplane. It’s constructed of carbon fiber and titanium with a quartz dome, travels at about three knots, and can dive 350 feet per minute. To date, less than 3 percent of the sea floor has been explored, and knowledge of the ocean at these depths is basically non-existent. The data and information collected during these dives will represent a monumental step forward in our understanding of the planet.

For information: Virgin Oceanic; email: info@virginocenic.com; Web site: www.virginocenic.com

TUMOR MONITOR

Researchers at MIT have developed an implantable device that can track the growth of tumors in the body. Unlike biopsies, which provide only a snapshot at a single point in time, the implant would be able to provide up-to-the-minute information on whether a tumor is growing or shrinking, its response to treatment, and if it is likely to metastasize. The tiny polyethylene device is implanted via a needle during a normal biopsy. It contains a semi-permeable membrane and is filled with nanoparticles that have been coated with antibodies. When target molecules (in this case, human chorionic gonadotropin, a hormone produced by tumor cells) enter the implant, they clump together. The clumps can then be detected by an MRI. The same technology can also be designed to monitor drug levels, to measure pH or oxygen levels, or to detect silent heart attacks.

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SELF-DRIVING CARS

Google recently took on a whole new challenge – making roads safer through the application of artificial intelligence. To that end, they’ve developed a fleet of automobiles that can drive themselves. So far, their seven test cars have driven over 1,000 miles without a bit of help from humans, and they’ve logged over 140,000 miles with only an occasional dose of human intervention. Although fully automated “robot cars” are still years from mass production, the benefits are far from science-fiction. Since robot drivers react faster than humans and don’t get sleepy, safety would be enhanced. Fuel consumption would also be reduced by eliminating heavy-footed, stop-and-go driving. And by reducing the possibility of accidents, vehicles could be built lighter, further improving fuel efficiency.

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LARGEST UNDERSEA CABLE

Iceland’s state-owned energy company is conducting a feasibility study to determine if they can export one of their greatest natural resources – geothermal energy. Because the island nation is essentially a volcanic landmass, geothermal energy is plentiful and easy to access. The naturally occurring steam can be used to drive turbines and produce electricity. Between geothermal plants and hydropower, Iceland generates all the power it needs without the need for fossil fuels of any kind. But getting it to other countries will require the largest undersea cabling system that has ever been attempted – between 745 and 1180 miles long. The goal is to export five terawatt-hours per year, which would be worth \$350 to \$448 million.

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