TECHNO TRENDS
THE BIG IDEAS THAT ARE CHANGING EVERYTHING

USE TECHNOLOGY TO SHAPE YOUR COMPANY'S FUTURE (PART II)

BY DANIEL BURRUS, CEO OF BURRUS RESEARCH

Last month, I discussed some of the technological advancements and transformations that are occurring today and the importance of embracing these changes to gain a competitive advantage.

This month I would like to share some tips and strategies on how to redefine and embrace the future.

TIME TO REDEFINE

Thanks to today's technology, companies can redefine who they are, what they offer, and how they offer it. In this case, the current technology shifts are actually tools of creation. As a result, by using technology effectively, your company can create new products, new services, and entire new markets—something technology couldn't readily do in the past.

Here are some ways to do that:

First, look at your products, services, or industry and see how today's new technologies can help you redefine things. For example, in early 2000, most people thought Apple was going out of business. That's when the company used technology to redefine themselves around music. Later they used technology to redefine again with the iPhone, which lead a telecommunications revolution. Now they're doing it again with the iPad by *continued on page 3*

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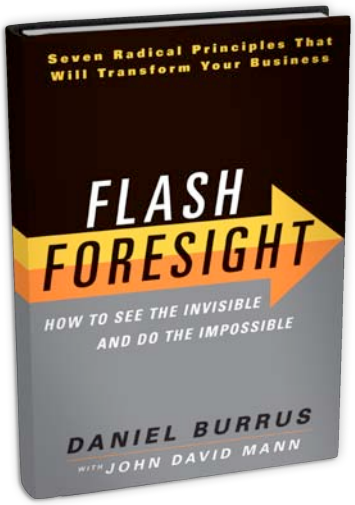
Seven Radical Principles That Will Transform Your Business

FLASH FORESIGHT

By Daniel Burrus with John David Mann



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TECHNOLOGY TO CHANGE YOUR COMPANY'S FUTURE *(continued from page 1)*

creating a new class of personal computer. They've not only redefined themselves, they've also redefined their industry.

Look at how technology is affecting your customers in your industry right now. Examine the overall customer experience as well as who is buying your offerings. Then, look at the specific ways in which you compete in the marketplace as well as what makes your company unique. Then, decide how technology can redefine the way you compete. For example, at one time, the Polaroid Company was the king of instant photography. But then technology and digital photography changed their industry, and the way they competed (instant photography) changed…but Polaroid didn't change with it. Instead, they made the mistake many businesses do: they used technology to get more efficient and lower their costs but failed to create new products and markets. Therefore, ask yourself: Is there a way you can use technology to change your product or how you service people?

Yes, the technology revolutions we're currently experiencing are redefining how companies make money, how professionals work, and how consumers buy. They're also redefining the strategic role technology plays in companies, enabling them to use it as a tool of creation. As such, savvy executives are analyzing how the company as a whole can use technology to redefine itself in the marketplace. From mobile finance and banking to geo-social networking tools, every vertical from real estate to manufacturing is going to be redefined in a short period of time. No executive can afford to move slowly; otherwise, he or she may miss the opportunity entirely.

EMBRACE THE FUTURE TODAY

Using technology such as apps, smart phones, and smart pads to shape and redefine your company needs to be one of your company's strategic imperatives. With the cost of hardware continuing to decrease and with bandwidth and processing power continuing to increase, it's easy to predict that cloud computing, apps, smart phones, and smart pads will gain even more popularity. As an executive, that can mean one of two things for you: 1) it can be a major headache, or 2) it can be a major opportunity. The difference is in how you look at the shifts and how you embrace the future.

Ultimately, staying ahead and forging new ground during a technology-driven transformation is indeed possible. It's all about looking at where the market is going rather than where it is today. It's about looking at where your customer is evolving, not where they used to be. When you change your mindset, ask some key questions, and then take action on what the answers reveal, you can use today's technology paradigm shifts to redefine your company, improve operations, create new revenue streams, and experience higher profits than ever before.

TECHNOLOGY NEWS HIGHLIGHTS

HYDROGEN STORAGE

While the focus on zero-emissions technologies for automobiles and other gas-powered vehicles seems to have shifted to electricity, Israeli scientists have not given up on the fuel cell as an alternative for the future. The biggest roadblock has been finding a safe and practical way to store hydrogen, a highly combustible gas that typically requires bulky tanks for safe transport and storage. Now a new technology is being evaluated which uses bundles of tiny tubes – known as capillary arrays – to store hydrogen. About the diameter of a drinking straw, it would take about 11,000 of them to fuel a car 250 miles, but that's still about half the size and weight of the tanks currently being installed in hydrogen-powered vehicles.

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LAB-GROWN BLOOD

A major medical breakthrough could greatly reduce the risk of rejection after transfusions by allowing patients to have a personal blood supply grown in the lab, using their own skin cells. A by-product of the rapidly evolving field of stem cell research, the procedure involves removing fibroblasts from skin samples, bathing them in growth solutions and switching specific genes on and off, effectively programming them to "morph" into blood cells. Experiments have been done using skin from adults as well as neonates, and the researchers have successfully generated multiple types of cells,

including red blood cells, white blood cells, macrophages, and cells that produce platelets. Leukemia patients may be the first to benefit from the new method. Instead of needing to find a donor match, which carries a high risk of rejection, blood could be produced from a patient's own skin cells, which do not carry the same genetic abnormalities that cause the cancer. The technique could be ready for testing in humans in as little as two years.

For information: Mick Bhatia, Director, Stem Cell and Cancer Research Institute, Michael G. De Groote Center for Learning, McMaster University, 1200 Main Street, W. Hamilton, Ontario, Canada L8N 3Z5; phone: 905-525-9140; fax: 905-522-7772; email: mbhatia@mcmaster.ca; Web site: www.mcmaster.ca/ or www.sccri.macmaster.ca/

COLOSSAL 3D TV

A prototype ultra-high resolution TV was recently unveiled that provides a 150-inch diagonal viewing area while delivering ultrasharp images. It's aimed at the ever-growing telemedicine market to provide doctors with more accurate and detailed diagnostic information and even to permit surgical procedures to be performed remotely. The rear-projection device uses high-performance photonic polymers and a light source which has double the intensity of conventional TVs to produce very high quality images. The technology also allows for data transfer speeds of up to 40 GB – fast enough to download an entire movie in about one second.

For information: Yasuhiro Koike, Keio University, Department of Applied Physis and Physicoinformatics, 3-1; Web site: www.keio.ac.jp/

AND THE NEXT JEOPARDY CONTESTANT WILL BE…

…A robot! Yes, in February, Jeopardy's two most successful contestants will compete against Watson, a computer that has been specifically designed to mimic human intelligence. The product of four years of development, Watson has the ability to analyze complexities of human language in a way that most computers cannot. Proprietary technologies allow it to sift through vast amounts of information in real time while processing a huge number of concurrent tasks. In addition to taking and passing the qualifying test, Watson has played more than 50 sparring games against former champions in preparation for the match. But the real benefit of such a computer is its capability for providing real-time analytics for fields such as healthcare diagnostics and customer service.

For information: David Ferrucci, IBM Corporation, Semantic Analysis and Integration Department, T.J. Watson Research Center, 1 New Orchard Road, Armonk, NY 10504; phone: 914-499-1900 or 800-426-4968; Web site: www.ibm.com or www.research.ibm.com

CURVED ESCALATOR

Patents have recently been granted on a new type of escalator that can be designed in any number of configurations, including curves and loops. Called the Levytator (after its inventor) it represents the first major redesign since the inception of the escalator 113 years ago. In addition to offering more design flexibility, the Levytator also makes more economical use of materials by eliminating redundant steps that move underneath. Instead, the continuous loop of curved steps can go up, flatten out and straighten, and go down again while passengers stay on board. This also makes maintenance easier because all steps are accessible from the top.

For information: Jack Levy, City University London, Mechanical Engineering; phone: +44-(0)20-7040-5060; Web site: www.city.ac.uk

WIRELESS CAR CHARGING

A new technology was recently unveiled that will allow electric vehicles to be charged wirelessly using inductive power transfer (IPT). The system effectively works as a transformer where one side is installed in the car and the other side is installed in a pad in the road. When the car is on top of the pad, it generates a magnetic field which induces an electrical current. The developers envision creating special "charging lanes" that would allow drivers to charge their cars as they drive, eliminating the anxiety of running out of power. IPT technology has already been used successfully in public transport for more than ten years – in fact, it's the method used to power Disney's underwater Nautilus system. Similar technology is also being used to charge mobile phones and electric toothbrushes. However, this will be the first pilot project for personal electric vehicles and a commercial-scale prototype is expected to be completed in 2012.

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GAMING METHODOLOGY FOR THE "REAL WORLD"

Advances in gaming technology are finding applications in many areas of computer programming including logistics and energy management. But it all starts with developing game characters that can think for themselves. Researchers are using a version of the Monte Carlo Tree Search (MCTS) algorithm to give video games something akin to artificial intelligence. Characters have the ability to make decisions based on a large number of possible actions rather than simply do what they've been programmed to do. From a gamer's standpoint, this will make for a much more challenging gaming experience. However, a more important use for the new algorithm may be in the real world. For example, MCTS is currently being evaluated in France as a means of controlling energy production based on changing levels of demand and diverting resources as needed.

For information: Simon Lucas, University of Essex, School of Computer Science and Electronic Engineering, email: sml@essec.ac.uk; Web site: www.essex.ac.uk

MOBILE HEART MONITORING

A new cardiac monitoring system is designed to help physicians track abnormalities remotely via mobile phone. At the heart of the system is a patch designed to be worn on the patient's chest. It contains an electrocardiogram (ECG) sensor system, two low-power amplifiers, and a microprocessor that analyzes the signal and transmits it wirelessly to the user's mobile phone. At that point, the information can be sent to any number of devices at a hospital or doctor's office. Unlike many current home monitoring devices that provide only heart rate data, the new device provides more in-depth diagnostic capability with beat-to-beat tracking of cardiac waveforms.

For information: Julien Penders, Imec/Holst Centre, High Tech Campus 31, 5656 AE Eindhoven, The Netherlands; phone: +31-40-4020-400

MESSAGE-ON-A-BOTTLE

Just in time for holiday gift-giving – vodka that sends your greetings for you! Yes, the latest retail gimmick in marketing spirits is a bottle with a built-in billboard. The electronic band of LEDs can be programmed with a scrolling message up to 255 characters in length via controls that are located right on the bottle. It's powered by a non-replaceable battery that will last up to 18 months depending on how often the display is turned on. (It automatically shuts off after three minutes and it even works if you keep your vodka in the freezer). But the Swedish bottler doesn't intend to stop there. In February they plan to release the "Observe" – an LCD version that will feature 1GB of memory and a rechargeable battery. The interactive display will come pre-loaded with photos and video, but users will also be able to upload their own via a standard USB connection.

For information: Medea Vodka, Schiedam, Holland; Web site: www.medeaspirits.com

ENERGY FROM COW BRAINS

Researchers have found that clathrin – a protein found in cow brains – may be useful as a scaffold for inorganic nanostructures used in solar cells and batteries. Clathrin, which is present in a variety of human cells as well, facilitates cell transport and can form a multiplicity of shapes such as cubes, sphere and tetrahedral. When combined with other materials, like gold and titanium dioxide, it can be used to create catalysts and electrodes with structures that are tailored for specific uses. Best of all, unlike synthetic materials used for similar purposes, the process does not require harsh chemicals or high temperatures.

For information: Shafigh Mehraeen, Stanford University, phone: 650-725-3150; email: shafigh@stanford.edu; Web site: www.stanford.edu

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