



TECHNO

THE BIG IDEAS THAT
ARE CHANGING EVERYTHING

TRENDS

THE FUTURE OF RADIO ADVERTISING

BY DANIEL BURRUS, CEO OF BURRUS RESEARCH



I just finished presenting a speech to the owners, operators, and marketers of radio stations across America. They have all had a very successful past selling radio advertising and serving the public. However, as they look to the future they are very worried. Today, most of their advertising customers see radio as "old media," versus YouTube, PODcasting, and Blogs, which are all part of what is seen as "new media." In addition, listeners have many new choices for entertainment, giving them less time to listen to radio. And, to make matters worse, Satellite Radio, launched a few years ago as a direct competitor, and Howard Stern's move to Satellite Radio, grabbed headlines. For many in my audience, the good old days seem to be in the past.

SCARCITY BRINGS SCARCITY – ABUNDANCE BRINGS ABUNDANCE

I found another problem in the industry. They operate under a scarcity mentality, which I find common among most well established industries. Why? Because in the old days, it worked. For the most part, everyone wanted a bigger piece of an ever-shrinking pie. They were used to competing with each other. The enemy was the other radio stations in the area.

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FUTURE OF RADIO *(continued from page 1)*

A NEW FUTUREVIEW

What is needed is a new view of the future based on seeing new media as a vehicle for extending the reach and redefining the power of radio. I explained that there is nothing more powerful than the spoken word and that, coupled with entertainment such as music, and the ability to deliver it to any device, including streaming radio to a cell phone or allowing listeners to listen to a show later via a PODcast, is what makes radio a timeless media, not old media.

The old view of radio is to think of it as a physical device just as many think of a newspaper as paper. In the past, newspapers delivered timely and relevant information and commentary on paper. Now, their reach has been extended thanks to what they once saw as the enemy, the Web. Profitable on-line versions of a newsletter such as The Wall Street Journal, have made the online version different, interactive, and complementary rather than redundant to the paper version.

When we think of radio as sponsored audio content and entertainment instead of a device, then new media can become a vehicle for growth rather than a threat. Listeners can already send text messages to the station and, thanks to new HD Radio, they will soon be able to get real-time information about road conditions or where the nearest location is for a product they may want to purchase. In addition, stations are no longer limited to audio content; they can now couple their messages and entertainment with Web-based video.

The enemy is not the other radio stations or Satellite radio, it is a scarcity mindset and a view that the good old days are gone. The future truth is that the good old days for radio have just started.

TECHNOLOGY NEWS HIGHLIGHTS

A NEW USE FOR KITCHEN GREASE

According to current estimates, 4 billion pounds of restaurant grease finds its way into U.S. landfills every year, where it may eventually release harmful methane gas into the atmosphere. But officials in Millbrae, California, have come up with a way to reduce the environmental impact of waste grease, and save money in the process, by converting it into "green power." Hauling companies pay a disposal fee to deliver their waste grease to a receiving station at the city's wastewater treatment plant. There, digester tanks containing microorganisms act like a human stomach to turn the grease into methane gas. This, in turn, is used to power a 250-kilowatt microturbine cogenerator that supplies the power to treat the city's wastewater. The only byproduct – heat – is re-circulated into the system to keep the digester at an optimum temperature. The Millbrae plant is expected to generate about 1.7 million kilowatt-hours of electricity annually – enough to meet 80 percent of the plant's power needs. It is estimated that this will reduce carbon dioxide emissions by 1.2 million pounds per year while saving the city about \$366,000 in utility costs.

For information: Chevron Energy Solutions, 345 California St., 18th Floor, San Francisco, CA 94104; phone: 800-982-6887; fax: 415-733-4950; Web site: www.chevronenergy.com

ONE-TWO PUNCH FOR CANCER CELLS

A promising new strategy for fighting cancer is currently under investigation at Johns Hopkins University, where researchers have developed a hybrid molecule that causes cancer cells to self-destruct. The new molecule combines butyrate – a fatty acid that is known to stop the uncontrolled growth of cancer cells – with N-acetyl-D-mannosamine (ManNAc) – a sugar that also plays a key role in cancer cell biology. The hybrid penetrates cell walls more readily than the two chemicals individually, and once inside, it is split apart by enzymes. The independent compounds then act by separate but complementary mechanisms to trigger cellular suicide (apoptosis). In lab test samples treated with the butyrate-ManNAc hybrid, all of the cancer cells died after 15 days. The team has filed for a patent on this new class of compounds and is preparing to begin conducting animal tests.

For information: Gopalan Sampathkumar, Johns Hopkins University School of Medicine, Whitaker Biomedical Engineering Institute, 720 Rutland Avenue, Baltimore, MD 21205; phone: 410-955-3132; fax: 410-502-9814; Web site: www.bme.jhu.edu

NEW INNOVATION IN COMPUTER MEMORY

An international team of scientists recently announced a breakthrough in computer memory that is 500 to 1,000 times faster than flash memory but uses half the power. Unlike traditional memory cells, which rely on the presence or absence of an electrical charge, the new technology – called “phase change” memory – is based on an alloy that can change rapidly between crystalline and amorphous phases. The phase is “set” by introducing an electrical pulse that heats the alloy to just above the melting point. If the pulse is turned off abruptly, the atoms freeze in a disordered (amorphous) state. If it is turned off more gradually (i.e., about 10 nanoseconds), the atoms assume a more ordered (crystalline) arrangement. No electrical power is required to maintain either phase, making phase change memory totally non-volatile (unlike SRAM and DRAM). It also maintains high performance levels at extremely small volumes, an important consideration as electronics continue to shrink in size.

For information: IBM Research, P. O. Box 218, Yorktown Heights, NY 10578; Web site: www.research.ibm.com Macronix International Co., Ltd., No. 16, Li-Hsin Road, Science Park, Hsinchu, Taiwan, R.O.C.; Web site: www.macronix.com Qimonda AG, Gustav-Heinemann-Ring 212, 81739 Munich, Germany; Web site: www.qimonda.com

WIKIPEDIA HELPS COMPUTERS THINK

Computer researchers have made another important advancement in artificial intelligence by devising a program to help computers “think smarter.” The new methodology utilizes the online encyclopedic database, Wikipedia, linking single words and phrases with larger concepts to more accurately discern the meaning of text or clarify ambiguous terms. For example, the program could distinguish whether the word “mouse” refers to a rodent or a computer peripheral. It can also make connections between topics that are related conceptually – such as “alternative fuel” and “hydrogen powered car” – even though the original text doesn’t contain those exact words. This background knowledge will be very useful in making Web searches and spam filters more reliable. The technique also has potential applications for security and intelligence.

For information: American Society for Technion-Israel Institute of Technology, 55 East 59th Street, New York, NY 10022; phone: 212-407-6300; fax: 212-753-2925; Web site: www.ats.org

TV ON A WINDOW

A new technology developed by researchers at Northwestern University could soon lead to displays that appear to float in space. The transparent, thin film transistors can be inexpensively assembled on glass or plastic, and are claimed to perform better than the silicon transistors currently used in LCDs. The new devices combine inorganic indium oxide film with layers of self-assembling organic molecules, which provide exceptional insulating properties. They can be fabricated at room temperature to minimize production costs, and combined easily with existing display technologies (e.g., LEDs, LCDs, and electroluminescent displays). Some applications include billboards that double as windows, windshields that display directions to your destination, or military goggles that illustrate tactical directives. Prototypes may be available in as little as 12 months.

For information: Tobin Marks, Northwestern University, Department of Chemistry, 2145 Sheridan Rd., Evanston, IL 60208; phone: 847-491-5371; fax: 847-491-7713; email: t-marks@northwestern.edu; Web site: www.northwestern.edu

ABUNDANT SOURCE OF STEM CELLS

Researchers recently identified the presence of stem cells in amniotic fluid, a discovery that could have a significant and positive impact on the future of stem cell research. Amniotic fluid-derived stem (AFS) cells possess characteristics of both embryonic and adult stem cells, indicating that they represent an intermediate stage. However, they are easily obtainable, self-renewing, and do not produce tumors.

Laboratory tests indicate that they are capable of producing a broad range of cells that may be of therapeutic value for use in nerve, muscle, bone, fat, blood vessel, and liver cells.

For information: Anthona Atala, M.D., Wake Forest University Medical Center, Medical Center Blvd., Winston-Salem, NC 27157; phone: 336-713-7293; fax: 336-713-7290; email: regenmed@wfubmc.edu; Web site: www.wfubmc.edu

“SMART” SILICON FLAKES

Nanosensors etched out of flakes of silicon could soon be used to detect a variety of environmental hazards.

Using a specialized electrochemical fabrication process, chemists at UCSD have developed low-power sensors that are sensitive to specific chemical and biological agents. Because they are composed of very thin layers, the particles normally reflect a specific color of light. However, when exposed to certain molecules, the crystals change color.

Similar devices could also be coated with tumor-specific peptides to home in on cancerous tumors, aiding in early diagnosis and therapy.

For information: Michael Sailor, University of California-San Diego, Department of Chemistry and Biochemistry, 9500 Gilman Drive #0358, La Jolla, CA 92093-0358; phone: 858-534-8188; fax: 858-534-5383; email: msailor@ucsd.edu; Web site: www.ucsd.edu

WIRELESS CHIP RIVALS RFID

An experimental chip, which is about the size of a grain of rice, could be the key to making digital information more readily accessible. Called “Memory Spot,” the chip can carry media or data, store up to 4 Mb of information, and has a transfer rate of 10Mbps. It can be attached unobtrusively to virtually any object.

The chip has an integrated antenna, and receives its power through inductive coupling with a read-write device. It could be incorporated into cell phones, PDAs, cameras, or a host of other devices.

The applications for Memory Spot are vast. They could be used to store medical records on a patient's wristband, attach catalogs to business cards, enhance security on identification documents, or add voice notes and graphic images to paper documents.

The cost to consumers for the chip is anticipated to be about \$1.00 each, but they are not expected to be commercially available for two to five years.

For information: Hewlett-Packard Company, 3000 Hanover Street, Palo Alto, CA 94304; phone: 650-857-1501; Web site: www.hp.com

REMOVABLE PAINT-LIKE COATING

Scientists at Cornell have developed a biodegradable coating that can be used to embellish sports fields, buildings, and even people, and then safely be washed away. First, the surface to be coated is sprayed with calcium chloride. Then, a solution of sodium alginate colored with food dye is applied. When the two solutions come into contact with each other, they form a network of bonds, resulting in a gel-like coating. To remove it, the gel is treated with a food preservative – disodium ethylenediamine tetraacetate – which dissolves the coating so that it can be washed away with water.

For information: David Tyler McQuade, Cornell University, Chemistry and Chemical Biology Department, 360 S.T. Olin Laboratory, Ithaca, NY 14853; phone: 607-254-4550; fax: 607-255-4137; email: dtm25@cornell.edu; Web site: www.cornell.edu

NON-CONTACT HEART SENSOR

Clinical trials of a new device for analyzing and diagnosing cardiac disease are slated to begin soon. The system utilizes a unique radio frequency technology that measures heart and lung function without skin contact, right through clothing. It is said to be capable of detecting, analyzing, and diagnosing structural defects.

The developers view this innovation as a way to address the global health issue of heart-related problems in both developed and developing countries.

For information: Iain Walker, CSIRO ICT Centre, Wireless Technology, P. O. Box 76, Epping, NSW 1710, Australia; phone: +61-2-9372-4410; fax: +61-2-9372-4111; email: iain.walker@csiro.au; Web site: www.csiro.au

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