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CAROCP Market Watch

A Trends & Forecasting Report

Neuroscience goes Hollywood

*Arts Media, and Entertainment Industry Sector
Marketing, Sales, and Service Industry Sector*

Although New York University is renowned for its legendary film makers including Spike Lee, Joel Coen, Oliver Stone and Martin Scorsese, recent developments in the psychology department, related to movies are taking center stage. Neuroscientists and researchers have been using films in their studies of the brain for the past several years, and what they are discovering could change the future of how films are made and marketed. Hollywood filmmakers and neuroscientists are starting to employ brain scans and other technologies to capture what is going on in the brains of moviegoers. This liaison may revolutionize how filmmakers create and market movies.

Researchers have been examining how people’s brains light up while watching certain movie scenes. Changes in blood flow to the different

parts of the brain can be tracked using a functional Magnetic Resonance Imaging (fMRI) device. Results of some of the experiments, using Alfred Hitchcock films and TV show episodes, reveal that with a high level of consistency, viewers share similar brain responses in the neocortex, the part of the brain that is responsible for perception and thinking. These results demonstrate that the movie maker has a certain level of control over the experience of the viewers. Studies involving the gaze patterns of test subjects to see where their eyes looked at any given time have also been conducted. Gaze maps also showed a strong correlation among viewers who witnessed the same movie scenes. Uri Hasson, a neuroscientist at NYU says “you can think about it as control by the director.

Hitchcock managed to take each main area and cause it to respond in a similar way, so he basically controlled what’s going on in the brain.” The research does not answer the question of whether greater control over the brain means that a movie is better, but it does empower directors to shape a viewer’s emotional and cognitive experience in the movie theater. NYU researchers envision directors using test results for editing purposes. “Is the musical score failing to arouse viewer’s brains in the climatic scene? Change it. People aren’t connecting so strongly to the main character? Maybe it’s time to rethink the character’s lines.” Each movie has many dimensions and the brain responds to each stimuli.

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The Tongue, it’s not just for Piercing Anymore

Health Science and Medical Technology Industry Sector

The human tongue is an amazing and busy body part. It is actually a collection of skeletal muscles bundled together on the floor of the mouth, and it is mainly responsible for manipulating food for chewing and swallowing. It is the primary organ of taste as much of the upper surface of the tongue is covered in papillae and taste buds. The tongue, with its

wide variety of possible movements, also controls the formation of sound and speech. The tongue is used for whistling and blowing bubbles from bubble gum too. Last but not least, the tongue can make the act of kissing a lot more interesting, sensuous and fun!

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Teens so over their Labels

Fashion and Interior Design, Finance and Business, Marketing, Sales and Services Industry Sectors

The souring job market and rising costs of the usual teenage indulgences — a slice of pizza, a drive to the mall, the hottest new jeans — are causing teens to do something they rarely do: be thrifty.

It's a far cry from the freewheeling spending of recent years, when teens splurged on \$100 Coach wristlet handbags, \$60 Juicy Couture T-shirts and \$80 skinny jeans from Abercrombie & Fitch.

Now, jobs for teens are less plentiful, and parents who supply the allowances are feeling the economic pinch themselves.

The stalwart retailers of teen apparel, such as Abercrombie and American Eagle Outfitters, are reporting sluggish sales, defying the belief that teen spending is recession-proof.

It's even becoming cool to be frugal. Last week, Ellegirl.com, the teen offshoot of Elle magazine, launched a new video fixture called Self-Made Girl on how to make clothes and accessories. The first video offers tips on how to create a prom clutch. "It's a little tacky in the economic unrest to tote a big logo bag," said Holly Siegel, the site's senior editor.

The job market for teens isn't what it used to be, either: Nathan Reeser, a Cincinnati 15-year-old, lost his job making pizza four months ago and has had to cut back on spending. He's shopping more at Target and less at Abercrombie & Fitch's Hollister stores.

"Now, I just get money from my parents, but they don't have as much because of taxes and everything else," he said.

While hiring in the overall job market fell by just 0.1 percent during the same period, teen hiring has slumped by 5 percent since March 2007, with many mom-and-pop stores, which typically hire younger workers, laying off employees.

Michael Niemira, chief economist at the International Council of Shopping Centers thinks it may get even worse. In the early 1990s, teen hiring dropped by 13 percent. Niemira, believes that means that if the larger job market mirrors the last teen hiring slump, "we're not out of the woods".

World News
August 22, 2008

Even in Sick Economy, Health Care Still Strong

Health Science and Medical Technology Sectors

Health care has become the beating heart of America's economy.

In the past 15 years, the health care economy has pumped out 4.5 million new jobs, including many in related fields such as drug development and health insurance. A dozen of the 30 fastest-growing occupations are related to health care. Even last month — as the unemployment rate took its biggest jump in 22 years — health care continued to add thousands of jobs.

No other industry matches this rapid growth spurt. Globalization has closed factories. New technologies have shrunk retailers and agriculture operations. Few jobs have been created in the finance and insurance industry recently, with the exception of health and real estate. Then the housing bubble burst.

The health care economy is bound to grow larger. The aging baby-boomer population is about to spur a wave of health care needs. Advances in technology are improving the survival rate of terminally ill and injured patients, who need extended therapy and care.

The health-care economy presently employs about 16.5 million Americans. The Congressional Budget Office forecasts that by 2082, rising health-care costs will account for nearly 50 percent of the national budget.

Although health care comes at a steep cost to the public and individuals. It also has brought about economic benefits, such as creating a second life for older manufacturing cities.

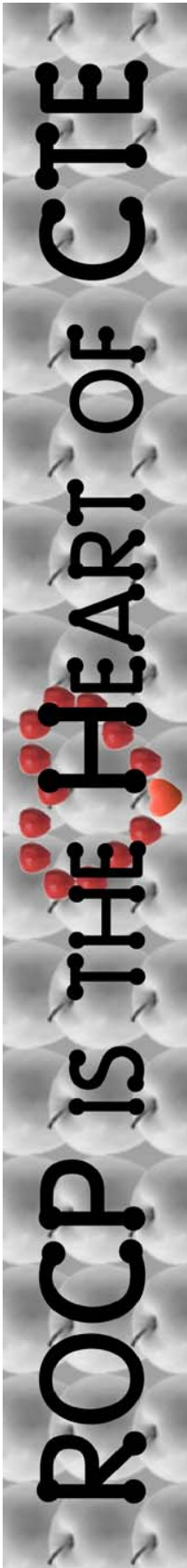
The auto industry has been steadily shrinking in greater Detroit, for example, shedding tens of thousands of car-manufacturing jobs in the past decade and Ford continues to cut white-collar salary costs by laying off workers.

Next year, however, the Henry Ford Health System plans to open a \$350 million community hospital employing 1,600 new hires.

Cleveland has emerged as a prime location for medical care and research. Longtime manufacturers, such as machine-tool behemoth Warner & Swasey, that once dominated the region's economy have been replaced by the Cleveland Clinic and University Hospitals and more than 500 companies providing medical goods and services.

Health care dominates in cities such as Pittsburgh and Memphis, Tenn., said Gerard Anderson, a Johns Hopkins University professor specializing in health-care economics.

"Health care is either the largest or second-largest producer of jobs and good works for that community," he said. "Often, the nicest building in the city



From Windmills to Eggbeaters

Energy and Utilities Industry Sector



Since ancient times, man has harnessed the power of wind. Wind has been used as an energy source for transportation, and for grinding grains in the production of flour and food supplies. The origins of the first windmill are unknown, but historians suggest that the first windmills came from Persia and the technology spread across northern Europe via the Crusades. European millwrights became highly skilled craftsmen, and developed the technology tremendously. As Europeans set off colonizing the rest of the globe, the use of various forms of windmills spread throughout the world. Today, the main source wind generated electricity comes from big wind turbines that have large propeller like blades. In California, these giant machines can be found in the foothills of the Tehachapi range, in the desert on the way to Palm Springs, and in the foothills east of San Francisco. Wind turbines are a green energy source in that they operate emission free and produce zero waste. Wind is a guaranteed fuel source, but not

practical for the individual consumer. Imagine what the neighbors would say if you erected a wind turbine in your back yard? From Holland, the country most famous for its windmills comes a new design for home wind power and it looks like a stylish eggbeater. The eggbeater, more commonly referred to as the Energy Ball, spins quieter and at lower wind speeds than most traditional propeller type turbines.

With a propeller model, the turning force is generated by the tips of the blades as they rotate perpendicularly through the air creating a swooshing noise. The Energy Ball has rotors bent around in the shape of a ball so that they primarily move parallel to the wind and generate less noise. "A small wind turbine has to be silent, otherwise it will be annoying to the community," says Erik Aurik, marketing manager for the Energy Ball. The noise from this new device is less than the sound of the wind, and it has the look of a futuristic weathervane that can be mounted on rooftops. Another

bonus of the Energy Ball is that it will rotate and generate electricity even when the wind speeds dip.

The Energy Ball is unique in that it has a horizontal axis, not a vertical one, and its design is based on the physics principle known as the Venturi effect. "The Venturi effect is characterized by a low pressure that occurs when a flow of air or liquid speeds up as it is constricted. Some perfume bottles use the Venturi effect to suck up perfume into the spray nozzle." The design of the Energy Ball causes the wind to constrict and lower the pressure inside the ball. This sucks in air flowing around the ball and helps to turn the rotor blades. The Venturi effect uses more of the wind and causes the turbine to be 40 percent more efficient than the traditional propeller style turbine.

Energy Balls can be installed on flat rooftops or on a pole and currently come in 1 and 2 meter diameters. *Continued on page 4*



The Social Network Becomes Career Safety Net

All Sectors

The old business adage that it's not what you know but who you know takes a twist in the Internet era: it's what you know about social-networking sites that can get you ahead.

If you have avoided social-networking sites like LinkedIn and Facebook with the excuse that they are the domain of desperate job hunters or attention-seeking teenagers, it's time to reconsider.

When Mr. So, a 32-year-old from Dublin, Calif., learned he had 45 days to find a new job before his company eliminated his division, he turned to friends online. Within hours of updating his job status on the social-networking site LinkedIn, Mr. So won four job interviews through his contacts there. Within a week, two of the interviews resulted in offers.

LinkedIn, described by some as the ultimate Rolodex, has more than 25 million

members and it is adding new ones at the rate of 1.2 million a month — or about one new networker every two seconds.

While it lacks the glamour of more popular sites like MySpace and Facebook, LinkedIn "is the place to be," said the Jupiter Research media analyst Barry Parr, if you want to make professional contacts online. LinkedIn is a "Chamber of Commerce mixer," he said.

And remember the other social-networking sites. If LinkedIn is the Chamber of Commerce luncheon, then Facebook is the after-hours party (and MySpace is the all-night rave) "Facebook seems a more natural way of communicating," said Debra Aho Williamson, senior analyst for eMarketer in Seattle. "LinkedIn seems more formal."

Facebook, which began in 2004 as a way for college students to communicate, has

more than 80 million active users. The fastest-growing segment is now those 25 years old and older, according to the company.

The site makes it easy to carry on a casual conversation or ask group questions. The easiest way to use it professionally is to join your employer's network. And it helps to post interesting links that are relevant to your job.

The site features classified ads in the Facebook Marketplace and there are job-hunting applications on the site, like Jobster. There are also tools for building a professional profile or online business cards. And you can use one of a handful of applications, liked LinkedIn Contacts, to connect your Facebook profile to LinkedIn.

New York Times
August 14, 2008.

Trends & Forecasting

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From Windmills to Eggbeaters

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A 1-meter ball can generate up to 500 kilowatt-hours/year and the 2-meter unit can supply up to 1,750 kilowatt-hours/year in locations with wind that averages 15 miles/hour.

While this does not replace the electricity needs of the average household, the technology is promising, and the design has the “wow” factor that is important for marketing. “There is a lot of interest worldwide,” Aurik said. “Everybody likes the design. It looks like an art piece.”

Michael Schirber, Special to LiveScience
September 10, 2008.

Even in Sick Economy, Health Care Still Strong

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is the hospital.”

By 2016, the Bureau of Labor Statistics predicts health-care employment to double the projected growth of all other industries combined.

“It’s one of those industries that doesn’t seem to be affected by economic downturn,” said Terry Schau, an economist at the bureau. “People get sick, and they’re going to need health care. The state of the economy may affect their ability to pay but not the demand.”

Washington Post
June 14, 2008

Neuroscience goes Hollywood

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Brain studies are also being conducted for marketing purposes. The Nielsen Company just invested in Neurofocus, a company designed to survey people’s responses to movie trailers and television ads. They bring people into the laboratory, wire them up with electrodes on their heads, and take measurements on their brains, eyes, heart rates and galvanic skin responses. Neurofocus doesn’t use the fMRI technology; instead, they use electroencephalography (EEG) data. The assessments allow Neurofocus to determine if a film sequence captures the viewer’s attention, and engages the viewer’s emotions and memories. The data is then used to extract the most interesting parts of a movie or TV show to make a trailer or advertisement. Watch for the expanding role of neuroscience coming soon to a theater near you!

Jeremy Hsu, Staff Writer
LiveScience

August 22, 2008.



The Tongue, it’s not just for Piercing Anymore

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Researchers are discovering new ways to harness the power and versatility of the human tongue. Due to its ability to work tirelessly, the tongue is being used in the development of assistive technology that allows individuals with disabilities to operate a computer, control a powered wheelchair and interact with their environments through movements of their tongues. The “Tongue Drive Operating System” operates a bit like a computer joystick. Movements are read by magnetic sensors placed on the roof of the mouth or behind the teeth that when activated, transmit wirelessly to a portable computer which in turn activates the movements of a cursor on the computer screen, or it can substitute for the joystick function in a powered wheelchair.

“We chose the tongue to operate the system because unlike hands and feet, which are controlled by the brain through the spinal cord, the tongue is directly connected to the brain by a cranial nerve that generally escapes damage in severe spinal cord injuries or neuromuscular diseases,” said Maysam Ghovanloo, a Georgia Tech researcher who started working on this project several years ago. “Tongue movements are also fast, accurate and do not require much thinking, concentration or effort.”

Other types of assistive devices use control systems to measure neck and head movements, but using the hardware can be tiring and difficult on smaller electronics like computers. Eye movement tracking devices are also innovative and promising, but quite expensive. As a result, expanding upon the use of the tongue in the development of assistive devices is a promising alternative. It is so promising, in fact, that the project has received funding from the Christopher and Dana Reeve Foundation.

Georgia Tech, June 20, 2008